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Massachusetts Amendments to NFPA @1, 2015 (effective October 18, 2019)

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527 CMR 1.00: MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE

Section:

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1.01: Title

527 CMR 1.00, as referred to as “this *Code*”, shall be known as the Massachusetts Comprehensive Fire Safety Code.

1.2 : Purpose

The purpose and the intent of 527 CMR 1.00 is to prescribe minimum requirements and controls to safeguard life, property and public welfare from the hazards of fire and explosion created by the storage, handling or use of substances, materials or devices, or from conditions, or materials hazardous to life, property and the public welfare as prescribed in M.G.L. chs. 22D and 148.

1.3 : Scope

The scope of 527 CMR 1.00 includes, but is not limited to, the following in accordance with M.G.L. c. 22D and M.G.L. c. 148 and as prescribed by M.G.L. c. 143, § 96:

- (1) Rules and regulations for the keeping, storage, use, manufacture, sale, handling, and transportation or other disposition of the following:
  - (a) Gunpowder, dynamite, crude petroleum or any of its products, or explosive or flammable fluids or compounds, tablets, torpedoes or any explosives of a like nature, or;
  - (b) Any explosives, fireworks, firecrackers, or any substance having such properties that it may ignite, or generate flammable or explosive vapors or gases to a dangerous extent.
- (2) Rules and regulations to prescribe the location, materials and construction of buildings to be used for any of the purposes provided in 527 CMR 1.03(1).
- (3) Rules and regulations to prevent or remedy any condition in or about any building, structure or other premises, or any ship or vessel which may tend to become a fire hazard or to cause a fire.
- (4) Rules and regulations to provide adequate safety requirements for the protection of the public in the event of a fire in or about any building, structure or other premises or any ship or vessel. Such rules shall require that any equipment, system or construction requirement relating to fire protection of persons or property within said building or structure, be installed in accordance with such applicable requirements as of the date of installation and shall be maintained in accordance with this *Code*.
- (5) Rules and regulations to provide for the safe storage, use, handling and manufacturing of corrosive liquids, oxidizing materials, toxic materials or poisonous gases.

1.4 : Adoption by Reference

527 CMR 1.00 adopts and incorporates, the provisions of (National Fire Protection Association) *NFPA 1 Fire Code* - 2015 edition as modified by 527 CMR 1.05.

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1.5 : Modifications to NFPA 1 Fire Code - 2015 Edition.

*NFPA 1 Fire Code* - 2015 Edition is modified, on a Chapter by Chapter basis, as follows:

**Chapter 1 Administration.** Chapter 1 is deleted in its entirety and replaced as follows:

**1.1 General Considerations.** This *Code* shall apply to both new and existing conditions. Unless the provisions of this *Code* specify that a requirement shall apply to existing occupancies, conditions or systems, an installation completed prior to the effective date of this *Code* shall be deemed in compliance if the installation was made in accordance with the applicable code in effect at the time of the installation and was "approved" by the AHJ. Notwithstanding the provisions of Section 1.1, if any prior installation or condition exists which constitutes an imminent danger; the AHJ may require compliance with the provisions of this *Code*.

Applicable Massachusetts General Law and requirements of the 780 CMR: *State Building Code* also referred herein as the (*Building Code*) and specialized codes as referenced in Chapter 2 and defined in Chapter 3 shall be adhered to in the design and construction of buildings, structures and equipment. The rules and regulations governed by Massachusetts General Law (M.G.L.) and other regulations of the *Building Code* or specialized codes are not enforced by the AHJ, as defined in 527 CMR 1.00, but rather the appropriate enforcement official.

**1.1.2 Construction Requirements for Buildings and Structures.** Unless regulated by 527 CMR 1.03(1), or as otherwise indicated by specific language, reference or context, any provision of 527 CMR 1.00 or any standard or code referenced in 527 CMR 1.00 relative to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of buildings or structures or any appurtenances connected or attached to such buildings, shall not be considered a requirement of this *Code*, but rather a reference to the applicable provisions of the *Building Code*. Such reference is for the convenience of the reader and shall be subject to the jurisdiction of the appropriate Building Official.

**1.1.3 Requirements of Specialized Codes.** Unless otherwise indicated by language, specific reference or context, any provisions of 527 CMR 1.00 or any standard or code referenced in 527 CMR 1.00 relative to the installation, alteration, replacement or repair of any equipment or system subject to the jurisdiction of a specialized code including, but not limited to: plumbing, electrical, sheet metal, or elevator, shall not be considered a requirement of this *Code*, but rather a reference to the applicable specialized code. Such reference is for the convenience of the reader and shall be subject to the jurisdiction of the appropriate specialized code official.

**1.1.4 Continued Maintenance of Any Equipment, System, Construction Requirement, Specification or Method Relating to Fire Protection.** Notwithstanding the provisions of Section 1.1.2 or 1.1.3, any equipment, system, construction requirement, specification or method relating to fire protection of persons or property within a building, structure, ship or vessel shall be properly maintained and shall continue to perform in accordance with the applicable requirements of the *Building Code* or applicable specialized code as of the date of such approved installation or construction.

**1.3.2\* Referenced Standards.**

**1.3.2.1** Except as provided in 1.1.2 relative to construction requirements for buildings or structures or 1.1.3, relative to requirements of specialized codes, all codes and standards referenced in 527 CMR 1.00 and listed in Chapter 2, which provide details regarding processes, methods, specifications, equipment testing and maintenance, design standards, performance, installation, or other pertinent criteria, shall be considered as part of this *Code*.

**1.3.2.3** Nothing herein shall diminish the authority of the AHJ to determine compliance with this *Code* for those activities or installations, as may be otherwise granted under the authority of the provisions of M.G.L. chs. 22D, 48, 148, 148A or other applicable provisions of Massachusetts Law.

1.05: continued

### **1.3.3 Conflicts.**

**1.3.3.1** When a requirement differs between this *Code* and a referenced document, the requirement of this *Code* shall apply.

**1.3.3.2** When a conflict between a general requirement and a specific requirement occurs, the specific requirement shall apply.

**1.3.3.3** When the requirements of this *Code* conflict with any other applicable regulation, or ordinance, the provisions which establish the higher standard for the promotion and protection of safety and welfare shall prevail.

**1.3.5 Vehicles and Marine Vessels.** Vehicles and marine vessels, or other similar conveyances, when in fixed locations and occupied as buildings, as described by 11.6 of NFPA 101: *Life Safety Code*, shall be treated as buildings and comply with this *Code*.

### **1.3.6 Buildings and Structures.**

**1.3.6.1** Buildings, structures, additions, and alterations permitted for construction after the adoption of this *Code* shall comply with the provisions stated herein for new buildings.

**1.3.6.2\*** Except as provided in 10.3.2, buildings in existence or permitted for construction prior to the adoption of this *Code* shall comply with the provisions stated herein or referenced for existing buildings.

**1.3.6.3** Repairs renovations, alterations, reconstruction, change of occupancy, and additions to buildings shall conform to this *Code*, and the *Building Code* and applicable specialized codes as authorized by M.G.L. c. 143, §96.

**1.3.6.4** Newly introduced equipment, materials, processes and operations regulated by this *Code* shall comply with the requirements for this *Code*.

**1.3.7 Severability.** If any provision of this *Code* or the application thereof to any person or circumstance is held invalid, the remainder of the *Code* and the application of such provision to other persons or circumstances shall not be affected thereby.

**1.4 Equivalencies, Alternatives, and Modifications.** The provisions of this *Code* shall not prevent the use of equivalencies, alternatives or modifications unless specifically prohibited herein.

**1.4.1 Equivalencies.** Nothing in this *Code* is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by this *Code*, provided technical documentation is submitted to the AHJ in writing to demonstrate equivalency and the system, method, or device is approved for the intended purpose.

**1.4.2 Alternatives.** The specific requirements of this *Code* shall be permitted to be altered by the AHJ upon application in writing to allow alternative methods that will secure equivalent fire safety, but in no case shall the alternative afford less fire safety, in the judgment of the AHJ, which would be provided by compliance with the provisions contained in this *Code*.

**1.4.3 Modifications.** The AHJ is authorized to modify any of the provisions of this *Code* upon application in writing by the owner, a lessee or a duly authorized representative where there are practical difficulties in the way of carrying out the provisions of this *Code*, provided that the intent of the *Building Code* be complied with and public safety is secured.

**1.4.4** Buildings with equivalency, alternatives, or modifications approved by the AHJ shall be considered as conforming with this *Code*.

**1.4.5** Each application for an alternative system, method or device regulated by this *Code* shall be filed with the AHJ in writing and shall be accompanied by such evidence, letters, statements, results of tests, or other supporting information as required to justify the request. The AHJ shall keep a record of actions on such applications together with the information that supported the action, and a signed copy of the AHJ's decision shall be provided to the applicant.

**1.5** : continued

**1.4.6 Approval.** Where allowed by this *Code*, the AHJ shall approve such alternative, systems, materials, or methods of design when it is substantiated that the standards of this *Code* are at least equaled. If, in the opinion of the AHJ, the standards of this *Code* shall not be equaled by the alternative requested, approval for permanent work shall be refused. Consideration shall be given to test or prototype installations.

**1.4.7 Tests.**

**1.4.7.1** Whenever evidence of compliance with the requirements of this *Code* is insufficient or evidence that any material or method does not conform to the requirements of this *Code* or to substantiate claims for alternative, equivalent or modifications to systems, materials, or methods, the AHJ shall be permitted to require tests for proof of compliance to be made at the expense of the owner or his or her agent.

**1.4.7.2** Test methods shall be as specified by this *Code* for the material in question. If appropriate test methods are not specified in this *Code*, the AHJ is authorized to accept an applicable test procedure from another recognized source.

**1.4.7.3** Copies of the results of all such tests shall be retained in accordance with Section 1.11.

**1.5 Units.**

**1.5.1 International System of Units.** Metric units of measurement in this *Code* are in accordance with the modernized metric system, known as the International System of Units (SI).

**1.5.2 Primary and Equivalent Values.** If a value for a measurement as given in this *Code* is followed by an equivalent value in other units, the first stated value shall be regarded as the requirement. A given equivalent value could be approximate.

**1.6 Enforcement.** This *Code* shall be administered and enforced by the AHJ.

**1.7 Authority.**

**1.7.1 Administration.** The provisions of this *Code* shall apply without restriction, unless specifically exempted.

**1.7.3 Interpretations.**

**1.7.3.1** Upon a written request of any interested person the Board of Fire Prevention Regulations may render written advisory rulings and interpretations of this *Code*, pursuant to the provisions of M.G.L. c. 30A, § 8.

**1.7.4 Enforcement Assistance.** Police and other enforcement agencies shall have authority to render necessary assistance in the enforcement of this *Code* when requested to do so by the AHJ.

**1.7.5 Delegation of Authority.** The AHJ may delegate to other qualified individuals such powers as necessary for the administration and enforcement of this *Code* as provided in M.G.L. c. 148.

**1.7.7 Inspections.**

**1.7.7.1** To the full extent allowed by the provisions of M.G.L. c. 148, the AHJ shall be authorized to inspect, at all reasonable times, any building or premises for dangerous or hazardous conditions or materials in order to determine compliance with this *Code*.

**1.7.7.1.1 Coordinated Inspections.** In circumstances involving compliance with two or more Massachusetts codes including, but not limited to, the *Building Code*, *Uniform State Plumbing Code*, *Massachusetts Electrical Code (Amendments)*, *Elevator Code* and *Sheet Metal Code*, the AHJ, while enforcing this *Code* shall, to the extent as reasonably practicable, coordinate inspections so that owners and occupants of a building or structure shall not be subjected to visits by numerous inspectors nor multiple or conflicting orders.

**1.7.7.1.2 Notification to Other Officials.** Whenever the AHJ observes an apparent or actual violation of some provision of law, ordinance, code or bylaw not within the AHJ's authority, the AHJ shall report the findings to the appropriate code official having jurisdiction to enforce said law, ordinance, code or bylaw.

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**1.7.7.2** The AHJ shall have authority to order, in writing, any person(s) to remove or remedy any dangerous or hazardous condition or material as provided in M.G.L. c. 148 and this *Code*.

**1.7.7.3** The AHJ engaged in fire prevention and inspection work shall be authorized at all reasonable times to enter and examine any building, structure, marine vessel, vehicle, or premises for the purpose of making fire safety inspections, to the full extent allowed by the provisions of M.G.L. c. 148 and this *Code*.

**1.7.7.4** Before entering, the AHJ shall obtain the consent of the occupant thereof or obtain a proper warrant authorizing entry for the purpose of inspection, except where an emergency exists, or as otherwise permitted by law.

**1.7.7.4.1** The applicant for any permit, certificate or license issued pursuant to the provisions of this *Code* or M.G.L. c. 148, or any person who seeks to renew or continue to hold such permit, certificate or license, shall be deemed to have consented to the inspection, at any reasonable hour, of any documents, premises, structure, marine vessel, building or vehicle reasonably associated with said permit, license or certificate, or application or renewal thereof, in order to confirm compliance with the requirements of this *Code*, M.G.L. c. 148 or other related law or regulation related to such permit, license or certificate.

**1.7.7.5** As used in 1.7.7.4, emergency shall mean conditions or circumstances that the AHJ knows, or has reason to believe, exist and that can constitute imminent danger.

**1.7.8 Imminent Danger Conditions.** Where conditions exist and are deemed to be an imminent danger by the AHJ, the AHJ shall have the authority to abate or require abatement of such conditions that are in violation of this *Code* or M.G.L. c. 148.

**1.7.9 Interference with Enforcement.** No person shall interfere or cause conditions that would interfere with an AHJ carrying out any duties or functions prescribed by this *Code*.

**1.7.10 Impersonation.** Persons shall not use a badge, uniform, or other credentials to impersonate the AHJ.

**1.7.12 Plans and Specifications.**

**1.7.12.1** The AHJ shall have the authority to require plans and specifications to ensure compliance with this *Code* and M.G.L. c. 148. Construction documents and shop drawings submitted shall be acted upon before work commences and within 30 days of the date of receipt of a completed application and construction documents unless extended by the AHJ.

**1.7.13 Inspection of Construction and Installation.**

**1.7.13.1** The AHJ shall be notified by the person performing the work when the installation is ready for a required inspection.

**1.7.13.2** Whenever any installation subject to inspection prior to use is covered or concealed without having first been inspected, the AHJ shall have the authority to require that such work be exposed for inspection.

**1.7.13.3** When any construction or installation work is being performed in violation of the plans and specifications as approved by the AHJ, a written notice shall be issued to the responsible party to stop work on that portion of the work that is in violation.

**1.7.13.4** The notice of violation shall identify the violation together with the Section of this *Code* in violation.

**1.7.13.5** The AHJ may issue a stop work order at which time the work shall not continue until the violation has been corrected.

**1.7.13.5.1** A stop work order, if issued, shall be incorporated with the notice of violation.

**1.7.14 Certificate of Occupancy.** When the *Building Code* requires a certificate of occupancy, the certificate of occupancy shall be issued in accordance with the *Building Code*.

**1.7.15 Stop Work Order.** AHJ shall have the authority to order an operation, construction or use stopped when any of the following conditions exist:

- (1) Work is being done contrary to provisions of this *Code*.
- (2) Work is occurring without a permit required by Section 1.12.
- (3) An imminent danger has been created.



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### **1.7.16 Imminent Dangers and Evacuation.**

**1.7.16.1** Whenever the maintenance, operation, or use of any land, building, structure, material or other object, or any part thereof, including vehicles used in the transport of hazardous materials, constitutes an imminent danger or a fire or explosion hazard which is dangerous or unsafe, or a menace to the public safety (including, but not limited to, fires, explosions, hazardous material incidents, motor vehicle accidents, structural collapses, mass casualty incidents and emergency extrication incidents) and the action to be taken to eliminate such dangerous or unsafe condition which create, or tend to create, the same is not specifically provided for in this *Code*, and unless otherwise prohibited by law, ordinance, by-law, or regulation, the AHJ is hereby authorized and empowered to take such action as may be necessary to abate such dangerous or unsafe conditions (directing employees of other city or town departments and agencies), including the evacuation of buildings and/or the transport of hazardous materials, the speed, routes, amounts, and hours of transport through the city, town or district shall also be regulated.

### **1.7.18 Public Fire Education.**

**1.7.18.1** The AHJ shall have the authority to develop and implement a public fire safety education program as deemed necessary for the general welfare with respect to the potential fire hazards within the jurisdiction.

**1.7.18.2** The AHJ shall have the authority to ensure duly authorized public fire safety education programs or public fire safety messages are disseminated to the general public.

### **1.10 Fire Prevention Regulations Appeals Board.**

#### **1.10.1 Establishment and Membership of the Fire Prevention Regulations Appeals Board.**

- (1) Pursuant to the provisions of M.G.L. c. 22D, § 5, there shall be a Fire Prevention Regulations Appeals Board.
- (2) The Appeals Board shall consist of the 16 members of the Board of Fire Prevention Regulations, established under M.G.L. c. 22D, § 4.
- (3) The Chairman of the Board of Fire Prevention Regulations shall serve as the chairman of the Appeals Board.

**1.10.1.1 Authority of the Fire Prevention Regulations Appeals Board.** The Fire Prevention Regulations Appeals Board is authorized to conduct appeals pursuant to the provisions of M.G.L. c. 22D, § 5.

- (1) Whoever is aggrieved by any act, rule, order, directive, decision or requirement of the AHJ charged with the enforcement of this *Code*, relative to the fire protection requirements for buildings or structures, may submit an application for an appeal to the Appeals Board within 45 days following the service of notice of such act, rule, order, decision, requirement or directive.

**1.10.1.2 Matters not within the Jurisdiction of the Appeals Board.** The Appeals Board does not have jurisdiction to hear appeals relating to the following matters:

- (1) Matters arising out of construction or installation requirements of the *Building Code*, (Building Code Appeals Board, M.G.L. c. 143, § 100);
- (2) Matters arising out of the enforcement of the statutory enhanced automatic sprinkler provisions of M.G.L. c. 148, § 26A½, 26G, 26G½, or 26H (Automatic Sprinkler Appeals Board, M.G.L. c. 6, § 201);
- (3) Matters arising out of an appeal of a determination of the municipal wiring inspector and/or involving the application of *Massachusetts Electrical Code (Amendments)*, (Board of Electrician's Appeal, M.G.L. c. 143, § 3P);
- (4) Matters arising out of the issuance of a "Non-Criminal Fire Code Violation Notice" issued under the civil enforcement provisions of M.G.L. c. 148A;
- (5) Matters arising out of the enforcement of a violation of any statute, including the provisions of M.G.L. c. 148 or arising out of any Order issued by the Head of the Fire Department or the State Fire Marshal relating to the abatement of a condition that constitutes a fire or explosion hazard or which is dangerous or unsafe or a menace to public safety (M.G.L. c. 148, § 5);

## 1.05: continued

(6) Administrative matters initiated by the State Fire Marshal relating to the suspension, revocation or refusal to issue any certificate of competency or user's certificate issued by the State Fire Marshal;

(7) Matters arising out of the AHJ's determination to suspend, revoke, issue or renew any permit based upon the exercise of discretionary function rather than a technical fire protection requirement of this *Code*; and

(8) Matters arising out of the enforcement of a city ordinance or town by-law or regulation promulgated or adopted by the municipality.

**1.10.1.3 Means of Appeal.** Application for an appeal shall be made, within 45 days following the service of notice of such act, rule, order, decision, requirement or directive which is the subject of the appeal on forms prescribed or approved by the Appeals Board.

**1.10.1.3.1** Such application shall be accompanied by the required fee and include copies of all records, references, reports and other information related to the appeal.

**1.10.1.3.2** An appeal shall stay all proceedings in the furtherance of the action or failure to act which is the subject of the appeal, unless the AHJ presents evidence that a stay would cause imminent peril of life or property.

**1.10.1.4 Appeals Board Hearings.** The Chairman of the Appeals Board shall designate three members of the Appeals Board to hold public hearings, hear testimony and take evidence.

**1.10.1.4.1** The Appeals Board shall not be bound by the strict rules of evidence prevailing in courts of law or equity.

**1.10.1.4.2** The chairman shall fix the time and place for hearings and a hearing shall take place not later than 60 days following the filing of an appeal, unless such time is extended by agreement with the appellant.

**1.10.1.4.3** The chairman shall give at least ten days notice of the time and place of the hearing to all interested parties. Any party may appear in person, by agent or by attorney at the hearing.

**1.10.1.5 Appeals Board Decisions.** The three members of the Appeals Board conducting the hearing shall decide the appeal and issue a written decision. Every decision shall require the concurrence of at least two of the three members and the written decision shall state findings of fact, conclusions and reasons for the decision and indicate the vote of each member participating in the decision.

**1.10.1.5.1** The Appeals Board shall issue a decision or order reversing, affirming or modifying, in whole or in part, such interpretation, order or decision, or a postponement of the application thereof, within 45 days following the hearing, unless such time is extended by agreement with the appellant.

**1.10.1.5.2** The Appeals Board may grant a variance from any provision of this *Code* and related rules and regulations in any particular case determine the suitability of alternate materials or methods of compliance and provide reasonable interpretations of this *Code* consistent with the purpose thereof.

**1.10.1.6 Record of Appeals Board Decisions.** A record of all Appeals Board decisions and of votes thereunder, properly indexed, shall be maintained in the office of the Department of Fire Services and shall be open to public inspection at all times during regular business hours.

## 1.11 Records and Reports

**1.11.1** A record of examinations, approvals, equivalencies, modifications and alternatives shall be maintained by the AHJ and shall be available for public inspection in accordance with provisions of the applicable Massachusetts Public Records Laws.

**1.11.2** In accordance with the provisions of the applicable Massachusetts Public Records Laws, the AHJ shall keep records of fire prevention inspections or investigations, including the date of inspections and a summary of violations found to exist, the date of the services of notices, and a record of the final disposition of all violations.

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### **1.11.3 Emergency Response Records.**

**1.11.3.2** The fire department shall report all incident data collected in accordance with the provisions of Massachusetts General Law, including M.G.L. c. 6A, § 18<sup>3</sup>/<sub>4</sub>(8) and M.G.L. 148, §§ 2 and 3.

**1.11.4** All records shall be retained in accordance with the manner and duration required by the Massachusetts Public Records Law.

### **1.12 Permits and Approvals.**

**1.12.1** An application for permit shall be made in writing on a form acceptable by the State Fire Marshal and submitted to the applicable enforcement AHJ. Such application shall be legible and completed in its entirety.

**1.12.1.2** The AHJ shall be authorized to issue permits and approvals as required by this *Code*.

**1.12.1.3** Persons named in the permit shall comply with this *Code*.

**1.12.2** Applications for permits shall be accompanied by such data as required by the AHJ and such fees as required by Massachusetts General Laws.

**1.12.2.1** The AHJ shall review all applications submitted and issue permits as required.

**1.12.2.2** If an application for a permit is rejected by the AHJ, a written notification shall be sent to the applicant as to the reasons for such rejection.

**1.12.2.3** Permits for activities requiring evidence of financial responsibility by the jurisdiction shall not be issued, unless proof of any required financial responsibility is furnished.

### **1.12.3 Conditions of Approval.**

**1.12.3.1** Any conditions of the approval by the AHJ of a permit shall remain with said permit, unless modified by the AHJ.

**1.12.3.2** The AHJ shall be permitted to require conditions of approval to be memorialized *via* recording on the permit or, if relating to land or buildings, at the appropriate registry of deeds.

### **1.12.4 Approvals by Other Authorities.**

**1.12.4.1** The AHJ shall have the authority to require evidence to show that other regulatory agencies having jurisdiction over the design, construction, alteration, repair, equipment, maintenance, process, activity and relocation of structures have issued appropriate approvals.

**1.12.4.2** The AHJ shall not be held responsible for enforcement of the regulations of such other regulatory agencies unless specifically mandated to enforce those agencies' regulations.

### **1.12.5 Misrepresentation.**

**1.12.5.1** Any attempt to misrepresent or otherwise deliberately or knowingly design, install, service, maintain, operate, sell, represent for sale, falsify records, reports, or applications; or other related activity in violation of the requirements prescribed by this *Code* shall be a violation of this *Code*.

**1.12.5.1.1** The installation or use, in any building, of any device or object that reasonably appears to be a smoke detector, sprinkler head, carbon monoxide alarm, heat detector, or any similar device, used for life safety or fire protection, that is in fact, neither designed nor capable of performing such life safety or fire protection function, shall be prohibited

**1.12.5.2** Such violations shall be cause for immediate suspension or revocation of any related approvals or permits issued.

**1.12.5.3** Such violations shall be subject to any other criminal or civil penalties provided by the laws or other applicable regulations of the Commonwealth of Massachusetts.

### **1.12.6 Permits.**

**1.12.6.1** A permit shall be conditioned upon the continued compliance with the requirements of this *Code* and shall constitute written authority issued by the AHJ to maintain, store, use, or handle materials; to conduct processes that could produce conditions hazardous to life or property; or to install equipment used in connection with such activities, or as authorized by this *Code*.



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**1.12.6.1.1** Unless specifically stated otherwise, permits required in Section 1.12.8 shall be issued by the AHJ and issued as a precondition before conducting any work or activity regulated under the provisions of this *Code*.

**1.12.6.2** Any permit issued under this *Code* is in addition to, and shall not take the place of any other approval, certificate, license, or permit required by any other regulations or laws.

**1.12.6.3** Where additional permits or approvals are required by other agencies, approval shall be obtained from those other agencies.

**1.12.6.4** The AHJ shall have the authority to require or conduct an inspection prior to the issuance of a permit.

**1.12.6.5** A permit issued under this *Code* shall remain valid for the period of time designated on the permit unless suspended, revoked or otherwise extended pursuant to Section 1.12.6.8.

**1.12.6.6** The permit shall be issued to one person or business only and shall be limited to locations or purposes described in the permit.

**1.12.6.7** Any change that affects any of the conditions of the permit shall require a new or amended permit.

**1.12.6.8** The AHJ shall have the authority to grant an extension of the permit time period upon presentation by the permittee of a satisfactory reason for failure to start or complete the work or activity authorized by the permit.

**1.12.6.9** A copy of the permit shall be posted or otherwise readily accessible at each place of operation and shall be subject to inspection as specified by the AHJ.

**1.12.6.10** Any activity authorized by any permit issued under this *Code* shall be conducted by the permittee or the permittee's agents or employees, in compliance with all requirements of this *Code* applicable thereto and in accordance with the approved plans and specifications.

**1.12.6.11** No permit issued under this *Code* shall be interpreted to justify a violation of any provision of this *Code* any other applicable law or regulation.

**1.12.6.12** Any addition or alteration of approved plans or specifications shall be approved in advance by the AHJ, as evidenced by the issuance of a new or amended permit.

**1.12.6.13** Permits shall bear the name and signature of the AHJ or that of the AHJ's designated representative. In addition, the permit shall indicate the following:

- (1) Operation or activities for which the permit is issued;
- (2) Address or location where the operation or activity is to be conducted;
- (3) Name of the owner, with the address and phone number and the name of the installer, with the address and phone number, if applicable;
- (4) Permit number;
- (5) Period of validity of the permit;
- (6) Inspection requirements and other permit conditions;
- (7) Name of the agency authorizing the permit (AHJ);
- (8) Date of Issuance;
- (9) Quantities of materials to be kept, used or stored, as applicable;
- (10) Certificate, and/or license issued under M.G.L. c. 148, § 13, as applicable;
- (11) Permit conditions as determined by the AHJ.

**1.12.6.14** Any application for, or acceptance of, any permit requested or issued pursuant to this *Code* shall constitute agreement and consent by the person making the application or accepting the permit, to allow the AHJ to enter the premises at any reasonable time to conduct such inspections or review such records as required by this *Code*.

**1.12.7 Revocation or Suspension of Permits and Approvals.**

**1.12.7.1** The AHJ shall be permitted to revoke or suspend a permit or approval issued by said AHJ if any violation of this *Code* or of M.G.L. c. 148 is found upon inspection or if any false statements or misrepresentations have been submitted in the permit application or plans on which the permit or approval was based.

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**1.12.7.2** Revocation or suspension shall be constituted when the permittee is duly notified by the AHJ.

**1.12.7.3** Any person who continues to engage in any permitted or approved business, operation, occupation, or uses any premises, after the permit or approval has been suspended or revoked pursuant to the provisions of this *Code* and before such suspended permit or approval has been reinstated or a new permit or approval is issued, shall be in violation of this *Code*.

**1.12.8\* General Requirements.** A permit and an application for permit shall be required as prescribed in 1.12.8. No work or activities described in this Section shall commence without first complying with Section 1.12 and the applicable Table in 1.12.8.

**A.1.12.8** See M.G.L. c. 148, § 10A regarding heads of fire departments, permits, inspections, and M.G.L. c. 148, § 23 regarding the keeping and use of flammable fluids, permit, and M.G.L. c. 148, § 24 regarding keeping and handling of fire menace material.

**1.12.8.1 General Safety with Regards to Open Air Burning, Use of a Torch, Fogging and Storage of Combustible Goods. [Chapter 10]**

**1.12.8.1.1** Permit holder shall be present at such burning to control the fire until it is entirely extinguished.

**1.12.8.1.2** Open air burning permits required by Sections 10.10.1, 10.10.4.1.1, and 10.10.4.1.2 shall be issued for a period not exceeding two days from the date of the permit.

**1.12.8.1.3 Removal of Paint using a Torch.**

**1.12.8.1.3.1 Permit.** A permit shall be required for the use of a torch or other flame or heat producing device for the removal of paint or the application or removal of roofing material from any building or structure. An approved fire extinguisher or an adequate water supply shall be readily available at all times.

**1.12.8.1** Table 1.12.8.1 shall apply to Chapter 10, entitled General Safety Requirement. A permit shall be used, completed, required and issued as a precondition before conducting any work/activity described by Table 1.12.8.1.

**Table 1.12.8.1\* Permits Required**

Chapter 10	General Requirements	
Work/Activity	Issuing Authority	Code Section
*Open Air Burning, <i>see</i> Annex	Forest Warden	10.10.1
*Ceremonial Bonfires, <i>see</i> Annex	Head of Fire Department	10.10.4.1.1
Open Flame (heat producing) devices		10.10.1 10.10.9.1
Storage of combustible materials		10.15.1.2 10.15.2.1 10.18.2
Fumigation and insecticidal fogging		10.20.1
*Use of canine guards, <i>see</i> Annex		10.21.1

**ATable 1.12.8.1(1)** See M.G.L. c. 48, § 13, regarding open fires granted by the forest warden or chief of the fire department in cities, towns and districts.

**ATable 1.12.8.1(2)** See M.G.L. c. 111, § 142 G, regarding the burning of Christmas trees and; M.G.L. c. 111, § 142H regarding, ceremonial bonfires; permits and M.G.L. c. 111, § 142I regarding, bonfires from July 2<sup>nd</sup> through July 6<sup>th</sup>.

**ATable 1.12.8.1(6)** See M.G.L. c. 148, § 28B regarding, buildings with canine guards.

1.05: continued

**1.12.8.2** Table 1.12.8.2 shall apply to Chapter 11, entitled Building Services. Except as permitted by 1.12.8.2.1, and by Table 1.12.8.50 for heating appliances, on a form approved by the State Fire Marshal, a permit shall be used, completed, required and issued as a precondition before conducting any work/activity by Table 1.12.8.2.

**1.12.8.2.1 Heating Appliances.**

- (1) A permit shall not be required for routine maintenance, such as the replacement of nozzles, ignition electrodes, or filters; and
- (2) If an installation is made under emergency conditions, an application for a permit shall be required within 24 hours thereafter, excluding Saturdays, Sundays and legal holidays.

**1.12.8.2.1.2 Inspection.**

**1.12.8.2.1.2.1** If after 30 days, an inspection is not conducted, the delivery of fuel oil shall not be prohibited for lack of a permit to store.

**Table 1.12.8.2\* Permits Required**

Chapter 11	Oil Burners and Fuel-oil	
Work/Activity	Issuing Authority	Code Section
*Installation or alteration of any fuel oil burning equipment. !Oil-line upgrade	Head of Fire Department	11.5.1.8
Storage of acceptable liquid fuel		11.5.1.10
*Installation, removal, or replacement of a fuel storage tank, unless provided otherwise in NFPA Chapter 66		

**ATable 1.12.8.2(1)** See M.G.L. c. 148, § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, § 10C regarding the alteration, repair or installation of oil burners; necessity of certificate; exceptions and; M.G.L. c. 148, § 38J regarding, residential property utilizing heating oil tanks; safety requirements; inspection; certification.

**ATable 1.12.8.2(2)** See M.G.L. c. 148, § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, 10C regarding, the alteration, repair or installation of oil burners; necessity of certificate;exceptions.

**ATable 1.12.8.2(3)** See M.G.L. c. 148 § 10A regarding, heads of fire departments; permits; inspections and; M.G.L. c. 148, § 23 regarding the keeping and use of inflammable fluids; permit and; M.G.L. c. 148, § 4 regarding, the keeping and handling of fire menace material; See M.G.L. c. 148, § 37 regarding, tanks more than 10,000 gallons used to store fluids other than water; permits; violation of statue or regulation and; annual inspections and Chapter 66 of NFPA 1.

**1.12.8.3 Smoke, Fire and Carbon Monoxide Protection Systems. [Chapter 13]**

**1.12.8.3.1** No person or entity may install any fire protection system in any new or existing building or structure without first complying with the provisions in this section and Table 1.12.8.3.

**1.12.8.3.2** A fire protection system shall include any wiring, equipment and systems used to detect, suppress or control smoke, fire and carbon monoxide or any combination thereof.

**1.12.8.3.3** No permit shall be required for the replacement, in kind, of an individual device (battery, carbon monoxide detector/alarm).

**1.12.8.3.4** See Chapter 42 for additional fire protection system requirements.

1.05: continued

**Table 1.12.8.3 Permits Required**

Chapter 13	Fire Protection System and Related Equipment	
Work/Activity	Issuing Authority	Chapter/Code Section/M.G.L.
Carbon monoxide/Smoke alarm installations [# 5 dwelling units] at time of property sale or transfer	Head of Fire Department	M.G.L. c. 148, §§ 26F and 26F½ <i>Known as a Certificate of Compliance</i>
Installations of carbon monoxide protection technical options.		Section 13.7.2
Impairment or disconnection of any sprinkler system, water main, hydrant, or other device used for fire protection-system, including carbon monoxide detection and alarm.		M.G.L c. 148, § 27A Section 13.7.2.2
		<i>See</i> Section 1.12.8.3

**1.12.8.4 Safeguarding Construction, Alteration, and Demolition Operations. [Chapter 16]**

**1.12.8.4.1** Permits must be obtained at least two days prior to the placement of a tar kettle on a roof.

**1.12.8.4.2** *See* Chapter 10.10 for additional permit requirements for tar pots.

**1.12.8.4.3** *See* Chapter 41 and Table 1.12.8.23 for permit requirements for Welding, Cutting, and Other Hot Work.

**Table 1.12.8.4 Permits Required**

Chapter 16	Safeguarding Construction, Alteration, and Demolition Operations	
Work/Activity	Issuing Authority	Code Section
Torch-applied roofing operations	Head of Fire Department	Section 16.6.1
Placement of a tar kettle on a roof		Section 16.7.1.2
Use of salamanders		Section 16.1.1.1
		<i>See Section 1.12.8.4</i>

**1.12.8.5 Combustible Waste and Refuse. [Chapter 19]**

**1.12.8.5.1** A permit shall not be required for containers which are delivered to a location and removed in the course of a single business day.

**1.12.8.5.2** Containers shall be marked with the name and telephone number of the company who can be reached in an emergency.

**Table 1.12.8.5 Permits Required**

Chapter 19	Combustible Waste, Refuse, and Rubbish Containers	
Work/Activity	Issuing Authority	Code Section
Rubbish containers > 6 cubic yards	Head of Fire Department	Section 19.1.1
		<i>See Section 1.12.8.5</i>

**1.12.8.6 Occupancy Fire Safety. [Chapter 20]**

1.05: continued

1.12.8.6.1 Unvented Heaters.

1.12.8.6.1.1 A copy of the manufacturer's installation/operating literature for unvented propane or natural gas-fired space heaters shall be submitted with each permit application.

1.12.8.6.1.2 Before operation of such heater, the Head of the Fire Department and the local or State Plumbing/Gas Inspector shall inspect the installation.

Table 1.12.8.6 Permits Required

Chapter 20	Occupancy Fire Safety	
Work/Activity/Location	Issuing Authority	Code Section
Assembly Occupancies	Head of Fire Department	Section 20.1.1.1
Food service provisions		Section 20.1.5.2.4.1
Open flame devices and Pyrotechnics		Section 20.1.5.3.1
Exposition Facilities		Section 20.1.5.5.1
Storage and handling, of cellulose nitrate film		Section 20.15.7.2
High-piled Storage		Section 20.15.8.2
Unvented propane or natural gas-fired space heaters		Sections 20.2.4.5.1, 20.3.2.1.1, 20.8.2.6.1, 20.9.2.2.1, 20.10.2.1, and 20.11.2.1
		See Section 1.12.8.6

1.12.8.7 Chapter 21 Reserved.

1.12.8.8 Chapter 22 Reserved.

1.12.8.9 Cleanrooms. [Chapter 23]

1.12.8.9.1 See chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.9 Permits Required

Chapter 23	Cleanrooms	
Work/Activity	Issuing Authority	Code Section
Use, storage or handling of hazardous materials	Head of Fire Department	Section 23.3 Section 61.1.2 Section 61.5.3.3.1 Section 63.1.2 Section 66.1.5 Section 69.1.2

1.12.8.10 Dry Cleaning. [Chapter 24]

1.12.8.10.1 See chapters 60 through 75 for permitting requirements regarding hazardous materials.

Table 1.12.8.10 Permits Required

Chapter 24	Dry Cleaning	
Work/Activity	Issuing Authority	Code Section
Use, storage or handling of hazardous materials	Head of Fire Department	Section 24.2 Section 61.1.2 Section 61.5.3.3.1 Section 63.1.2 Section 66.1.5



		Section 69.1.2
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1.05: continued

**1.12.8.11 Chapter 25 Reserved.**

**1.12.8.12 Laboratories Using Chemicals. [Chapter 26]**

**1.12.8.12.1** *See chapters 60 through 75 for permitting requirements regarding hazardous materials.*

**Table 1.12.8.12 Permits Required**

Chapter 26	Laboratories Using Chemicals	
Work/Activity	Issuing Authority	Code Section
The handling or storage of chemicals in laboratory buildings, laboratory units, and laboratory work areas whether located above or below grade.	Head of Fire Department	Section 26.2 Section 61.1.2 Section 61.5.3.3.1 Section 63.1.2 Section 66.1.5 Section 69.1.2

**1.12.8.13 Chapter 27 Reserved.**

**1.12.8.14 Chapter 28 Reserved.**

**1.12.8.15 Chapter 29 Reserved.**

**1.12.8.16 Motor Fuel Dispensing Facilities and Repair Garages. [Chapter 30]**

**1.12.8.16.1** *See chapters 60 through 75 for permitting requirements regarding hazardous materials.*

**Table 1.12.8.16 Permits Required**

Chapter 30	Motor Fuel Dispensing Facilities and Repair Garages	
Work/Activity	Issuing Authority	Code Section
Use, storage or handling of hazardous materials.	Head of Fire Department	Section 30.1.1.3 Section 61.1.2 Section 61.5.3.3.1 Section 63.1.2 Section 66.1.5 Section 69.1.2

**1.12.8.17 Forest Products. [Chapter 31]**

**Table 1.12.8.17 Permits Required**

Chapter 31	Forest Products	
Work/Activity	Issuing Authority	Code Section
Storage of mulch > 300 cubic yards.	Head of Fire Department	Section 31.2

**1.12.8.18 Motion Picture and Television Production Studio Soundstages and Approved Production Facilities. [Chapter 32]**

**1.12.8.18.1 Notification.**

**1.12.8.18.1.1** A permit shall not be required provided notification is given to the Head of the Fire Department for production locations where 15 through 30 on-site personnel are present, and permits are not specifically required by Chapter 32.

1.05: continued

**Table 1.12.8.18 Permits Required**

Chapter 32	Motion Picture and Television Production Studio Soundstages and Approved Production Facilities	
Work/Activity	Issuing Authority	Code Section
Soundstages and approved production facilities for activities listed.	Head of Fire Department	Section 32.4.2
Production locations.		Section 32.5.2
		See Section 1.12.8.18

**1.12.8.19. Chapter 33 Reserved.**

**1.12.8.20. Chapter 34 Reserved.**

**1.12.8.21** Table 1.12.8.21 shall apply to Chapter 38 entitled Cannabis Growing, Processing, or Extraction Facilities. A permit shall be used, completed, required and issued as a precondition before conducting any work/activity described by Table 1.12.8.21.

**Table 1.12.8.21\* Permits Required**

Work/Activity	Issuing Authority	Code Section
Processing or extraction of cannabis involving hazardous materials, <i>see</i> 38.1.	Head of Fire Department	38.2 60.8

**ATable 1.12.8.21.** A permit is required for processes involving hazardous materials in accordance with Section 60.8. Chapter 38 provides specific requirements for operations and equipment utilized in the processing and extraction activities commonly associated with cannabis processing facilities. It is generally accepted that processes involving hazardous materials will meet industry best practices. In the case of cannabis processing and extraction, compliance with the published regulations of Chapter 38 are the minimum industry standard.

**1.12.8.22 Dust Explosion and Fire Prevention. [Chapter 40]**

**Table 1.12.8.22 Permits Required**

Chapter 40	Dust Explosion and Fire Prevention	
Work/Activity	Issuing Authority	Code Section
An operation that uses or produces combustible dust.	Head of Fire Department	Section 40.2

**1.12.8.23 Welding, Cutting and Other Hot Work. [Chapter 41]**

**1.12.8.23.1 Application for a Permit.**

**1.12.8.23.1.1** A permit application shall specify the time and exact location of the work to be performed, the nature of the work to be done, and any special precautions to be taken during that work.

**1.12.8.23.1.2** On the permit application the applicant shall provide written authorization, signed by the propertyowner or his agent.

**1.12.8.23.2 Permit Requirements.**

**1.12.8.23.2.1** A single permit shall be permitted to be issued for both operation and storage.

**1.12.8.23.2.2** For daily activities, an annual hot work permit shall be permitted if in compliance with Section 41.7.

1.05: continued

- 1.12.8.23.2.3 A permit prescribed by the Head of the Fire Department shall be required before conducting hot work processes in other than a designated area.
- 1.12.8.23.2.3.1 A permit prescribed by the State Fire Marshal shall be used for hot work performed in other than designated areas.
- 1.12.8.23.2.3.2 Before hot work operations begin in a nondesignated location, a written hot work permit by the Permit Authorizing Individual (PAI) shall be required. [51B:5.4.1]
- 1.12.8.23.2.3.2.1 See 41.3.4.1.1.1 for sample hot work permit for permitted required areas.
- 1.12.8.23.3 Permits Not Required.
- 1.12.8.23.3.1 A hot work permit shall not be required by the Head of the Fire Department when hot work is conducted in approved and designated areas in accordance with Section 41.3.2.2.1.
- 1.12.8.23.3.1.1 See 41.5.4.4 Inspections permitted by the AHJ
- 1.12.8.23.3.2 A permit shall not be required when the purpose of performing hot work is necessary for required maintenance.
- 1.12.8.23.3.2.1 See Section 41.4 entitled Sole Proprietors and Individual Operators.
- 1.12.8.23.3.3 Where an approved facility hot work permit program exists that meets the requirements of Chapter 41, the permit shall be permitted to be issued for an entire facility
- 1.12.8.23.4 See Chapters 60 through 75 for permitting requirements regarding hazardous materials.
- 1.12.8.23.5 See Section 16.6 for permitting requirements regarding use of torch-applied roofing systems.
- 1.12.8.23.6 See Section 16.7 for permitting requirements regarding use of tar kettles.

Table 1.12.8.23 Permits Required

Chapter 41	Welding, Cutting, and Other Hot Work	
Work/Activity	Issuing Authority	Chapter/Code Section
Welding, Cutting and Other Hot Work	Head of Fire Department	Section 41.1.5.3 Section 41.3.2.2 Section 41.3.4
		See Section 1.12.8.23

- 1.12.8.24 Refueling Gaseous Fuel Containers, and Systems. [Chapter 42]
- 1.12.8.24.1 Application for Permit.
- 1.12.8.24.1.1 An application for a permit shall be submitted by the person, firm or corporation responsible for the installation or connection.
- 1.12.8.24.2 Permit Not Required.
- 1.12.8.24.2.1 A permit shall not be required to make a connection in the fueling of gaseous fuel vehicles, replacement of a portable container, or the filling of a stationary container.

Table 1.12.8.24 Permits Required

Chapter 42	Refueling [Gaseous Fuel Containers and Systems]	
Work/Activity	Issuing Authority	Code Section
Installation or connection of Gaseous Fuel Containers and Systems	Head of Fire Department	Section 42.2.2.1
		See Section 1.12.8.24

1.05: continued

**1.12.8.25 Refueling Cargo Tanks, Portable Tanks or Transfer Tanks.**

**1.12.8.25.1 General.**

**1.12.8.25.1.1** All tanks shall be considered full for the purpose of this *Code*.

**1.12.8.25.2 Cargo, Portable and Transfer Tanks.**

**1.12.8.25.2.1** A permit shall be required when tanks are left unattended.

**1.12.8.25.3 Vehicles and Contents.**

**1.12.8.25.3.1** Tanks shall only be left in an area remote from buildings of habitation in such a manner required by the AHJ.

**1.12.8.25.3.2** The Head of the Fire Department may assume control of the vehicle and its contents if the owner is unable or unwilling to remove the vehicle or its contents within a reasonable time.

**1.12.8.25.3.3 Inspections Required.**

**1.12.8.25.3.3.1** Transport vehicles used in the transportation of combustible liquids shall be subject to inspection by the AHJ.

**1.12.8.25.3.4 Exemption from Inspection.**

**1.12.8.25.3.4.1** If exempt from an inspection, a certificate of exemption shall be issued by the AHJ and carried in the transport vehicle at all times.

**1.12.8.25.3.4.2** A certificate of exemption shall remain in effect provided the tank vehicle is maintained in accordance with U.S. DOT, Title 49CFR.

**1.12.8.25.3.5 Permits Not Required.**

**1.12.8.25.3.5.1** A permit shall not be required for gasoline or other flammable petroleum product provided it is transported in an open vehicle or in a compartment of a closed vehicle separated from the passengers, where the total quantity does not exceed 21 gallons, provided such flammable liquid is contained in approved containers and with no individual container exceeding seven gallons capacity.

**1.12.8.25.3.5.2** A permit shall not be required for combustible liquids transported in any open vehicle or in the compartment of a closed vehicle separated from the passengers where the total quantity does not exceed 55 gallons, provided such combustible liquid is contained in approved containers, substantial metal drums or other similar containers.

**1.12.8.25.3.7 Alternate Fuels.**

**1.12.8.25.3.7.1 Notice of Completion and Inspection of Work.**

**1.12.8.25.3.7.1.1** Upon receipt of such notification of completion of the work, the AHJ shall make an inspection of the installation within a reasonable time. If the work is found to be in accordance with this *Code* and, if applicable, 502 CMR 5.00: *Permit Requirements and Annual Inspection of above Ground Storage Tanks or Containers of More than Ten Thousand Gallons Capacity*, the AHJ shall issue to the owner or occupant a permit for the keeping, storage, manufacture or sale in connection therewith, except where such storage is otherwise authorized by license.

**1.12.8.25.3.7.2 Certificate of Completion.**

**1.12.8.25.3.7.2.1** See Section 1.12.8.51 for Certificate of Completion requirements regarding alternate fuel storage installations and connections.

1.05: continued

Table 1.12.8.25\* Permits Required

Chapter 42	Refueling [Cargo Tanks, Portable Tanks or Transfer Tanks]	
Work/Activity	Issuing Authority	Code Section
*To store flammable and combustible liquids.	Head of Fire Department	Section 42.2.2.1
For dispensing motor fuel from a tank vehicle.		Section 42.8
Alternate fuels		

**ATable 1.12.8.25 Permits Required.** Used here, "to store" includes the parking location of Cargo Tanks, Portable Tanks, or Transfer Tanks during nonbusiness hours. As a condition of the flammable/combustible storage permit, the tank vehicle should comply with NFPA 385 as referenced in 42.7.2.2.1 and 42.7.6.2, the conditions of 42.15, and 49 CFR. Each tank vehicle should be specifically identified on the storage permit.

1.12.8.26 Refueling Marine Fueling. [Chapter 42]

1.12.8.26.1 Permit Holder. A permit holder shall comply with following:

- (1) The permit holder of every marine fueling facility shall designate one or more persons to be an authorized marine fueling operator.
- (2) Each marine fueling operator shall be as described in Section 1.12.8.26.3
- (3) The permit holder shall keep a written record for each authorized marine fueling operator.
  - (a) Such written record shall be maintained for a period of three years.
  - (b) Such written records shall include the following information:
    - 1. The name, home address, telephone number, and age;
    - 2. The date and location of the training;
    - 3. A summary of the training program topics;
    - 4. A dated signature of the employee administering the training; and
    - 5. A dated signature from the employee receiving the training.

1.12.8.26.2 Marine Fueling Operator. The operator shall be 18 years of age or older and responsible for the oversight of the actual fueling activity conducted by the marine fueling facility and shall comply with the following:

- (1) The operator shall be the permit holder or shall be an agent or employee under the direct control or supervision of said permit holder.
- (2) Each current or newly designated authorized marine fueling operator shall be adequately and properly trained prior to conducting any fueling activity.
- (3) Training shall be conducted at least on an annual basis and at a minimum, shall include the following areas:
  - (a) Familiarity of Chapter 42;
  - (b) The properties and hazards of flammable and combustible liquids;
  - (c) Handling precautions for flammable and combustible liquids;
  - (d) The manufacturers operating instructions for operating all fueling equipment (pumps, nozzles, controls, emergency shutoff, *etc.*) and related equipment; and
  - (e) Familiarity with the operation and location of all fueling equipment and of all emergency equipment and procedures, including:
    - 1. Emergency notifications (for mobile operators site by site specific);
    - 2. Evacuation procedures;
    - 3. Emergency shutoff equipment location and operation;
    - 4. Fire extinguisher locations and operations;
    - 5. Location and proper operation of any extinguishing systems; and
    - 6. Standby for the arrival of emergency responders.



1.05: continued

**Table 1.12.8.26 Permits Required**

Chapter 42	Refueling [Marine Fueling]	
Activity	Issuing Authority	Code Section
The dispensing, transferring of fuel at marine fueling facilities.	Head of Fire Department or State Fire Marshal	Section 42.9.1.4
To construct or alter a new or existing marine fueling facility.		
To maintain a fueling facility.		
		See Section 1.12.8.26

**1.12.8.27 Spraying, Dipping, and Coating Using Flammable or Combustible Materials.**

**1.12.8.27.1 Use Prohibited. [Chapter 43]**

**1.12.8.27.1.1** The use of any clear or pigmented wood finish, formulated with nitrocellulose or synthetic resins to dry by evaporation and without chemical reaction, having a flashpoint below 100°F, and having a vapor pressure not exceeding 40 psi at 100°F, including clear lacquer or sanding sealers, shall be prohibited. [M.G.L. c. 94, § 329]

**1.12.8.27.2** See Chapters 60 through 75 for permitting requirements regarding hazardous materials.

**Table 1.12.8.27 Permits Required**

Chapter 43	Spraying, Dipping, and Coating Using Flammable or Combustible Materials	
Work/Activity	Issuing Authority	Chapter
Storage, use or handling of hazardous materials	Head of Fire Department	43.1.1.4
		See Section 1.12.8.27

**1.12.8.28 Chapter 44 Reserved.**

**1.12.8.29 Combustible Fibers. [Chapter 45]**

**1.12.8.29.1** No permit shall be required for agricultural storage of combustible fibers.

**Table 1.12.8.29 Permits Required**

Chapter 45	Combustible Fibers	
Work/Activity	Issuing Authority	Code Section
For storage or handling of combustible fibers > 100 ft. <sup>3</sup> (2.8 m <sup>3</sup> )	Head of Fire Department	Section 45.1.3
		See Section 1.12.8.29

**1.12.8.30 Chapter 50 Reserved.**

**1.12.8.31 Industrial Ovens and Furnaces. [Chapter 51]**

**Table 1.12.8.31 Permits Required**

Chapter 51	Industrial Ovens and Furnaces	
Work/Activity	Issuing Authority	Code Section
Installation and operation of an oven or furnace.	Head of Fire Department	Section 51.1.2

1.05: continued

**1.12.8.32. Energy Storage Systems. [Chapter 52]**

**Table 1.12.8.32 Permits Required**

Chapter 52	Energy Storage Systems	
Work/Activity	Issuing Authority	Code Section
To install and operate energy storage systems having a capacity greater than the quantities listed in Table 52.3.1	Head of Fire Department	52.1.2
To install and or operate stationary battery systems having an electrolyte capacity more than 100 gal. (378.5 L) in sprinklered buildings or 50 gal. (189.3 L) in non-sprinklered buildings		52.2

**1.12.8.33 Chapter 53 Reserved.**

**1.12.8.34 Hazardous Material. [Chapter 60]**

**1.12.8.34.1 Permit Requirements.**

- (1) A permit holder shall apply for the renewal on an annual basis.
- (2) A new permit shall be required prior to engaging in any new or modified hazardous material process activity, which results in a change to a different process category authorized by the current permit.

**1.12.8.34.2 Process or Processing of any Hazardous Material at any Facility.**

- (1) A permit shall be required for the process or processing of any hazardous material at any facility identified in this *Code* as Category 2 through Category 5, as described in Chapter 60.
- (2) The AHJ may require technical assistance in accordance with Section 1.15 to evaluate the adequacy of a Category 3 or Category 4 facility process safety conditions, programs, procedures, and practices undertaken at the facility, but only after a notice of denial has been properly served upon the person making application.

**Table 1.12.8.34 Permits Required**

Chapter 60	Hazardous Material	
Work/Activity	Issuing Authority	Code Section
Process or Processing of any Hazardous Material in Category 2, 3, 4, and/or 5.	Head of Fire Department	Section 60.8.1.1.1
Crop ripening or color processing.	Head of Fire Department	Section 60.8.4 Where that process involves the storage, handling, and use of a flammable compressed gas ( <i>see</i> Section 63.1.2). Where that process involves the storage, handling, and use of a combustible or flammable liquid ( <i>see</i> Section 66.1.5).
		<i>See</i> Section 1.12.8.34
		<i>See</i> Table 1.12.8.50

**1.12.8.35 Aerosol Products. [Chapter 61]**

**1.12.8.35.1 Permit Requirement.**

- 1.12.8.35.1.1** A permit shall be required based on the aggregate quantity.

1.05: continued

**1.12.8.35.2 Permit Not Required.**

**1.12.8.35.2.1** A permit shall not be required for level 1 aerosol products.

**Table 1.12.8.35 Permits Required**

Chapter 61	Aerosol Products	
Work/Activity	Issuing Authority	Code Section
Storage > 500 lbs.	Head of Fire Department	Section 61.1.2
		See Section 1.12.8.35

**1.12.8.36 Chapter 62 Reserved.**

**1.12.8.37 Compressed Gases and Cryogenic Fluids. [Chapter 63]**

**1.12.8.37.1** Permits shall be required in accordance with Tables 1.12.8.37(a), (b) and (c).

**1.12.8.37.2** See Chapters 41, 42, 60, 63, and 69 for additional requirements and exceptions.

**Table 1.12.8.37(a) Permits Required**

Chapter 63	Compressed Gases and Cryogenic Fluids	
Work/Activity	Issuing Authority	Code Section
Storage of compressed gases Inside of a building/Outside of a building	Head of Fire Department	Section 63.1.2 (Also see Table 1.12.8.50) See Tables 1.12.8.37(b) and (c)

**Table 1.12.8.37(b) Permit Amounts for Compressed Gases**

Type of Gas	Amount*	
	ft. <sup>3</sup>	m <sup>3</sup>
Corrosive	\$200	\$ 0.5.7
Flammable	\$200	\$ 0.5.7
Highly toxic	Any amount	
Inert and simple asphyxiant	\$6000	\$169.9
Oxidizing (including oxygen)	\$504	\$14.3
Pyrophoric	Any amount	
Toxic	Any amount	
Unstable (reactive)	Any amount	

\*Cubic feet measured at normal temperature and pressure.

**Table 1.12.8.37(c) Permit Amounts for Cryogenics**

Type of Cryogen	Inside Building (gal.)	Outside Building (gal.)
Corrosive	Over 1	Over 1
Flammable	Over 1	60
Toxic/highly toxic	Over 1	Over 1
Nonflammable	60	500
Oxidizer (includes oxygen)	10	50

**1.12.8.38 Chapter 64 Reserved.**

**1.12.8.39 Blasting, Explosives, Fireworks, and Model Rocketry. [Chapter 65]**

1.05: continued

**1.12.8.39.1 Explosives and Blasting.**

**1.12.8.39.1.1 Permit Requirements.** Compliance with the following shall be required:

- (1) For the purpose of permitting, the capacity of a storage magazine, in pounds, shall be the maximum constructed storage capacity of the magazine as reported to the Alcohol Tobacco and Firearms (ATF).
- (2) Application for permit to conduct a blasting operation shall include the submittal of an Explosives User's Certificate and a Certificate of Competency.
- (3) A permit to detonate explosives shall not be issued, unless the person holds a valid certificate and a DigSafe number has been obtained in accordance with M.G.L. c. 82, § 40.
- (4) Such permit shall remain in effect for a minimum of 30 days, unless extended, suspended or revoked.
- (5) For deliveries of explosive materials to any magazine, building, or structure shall be in accordance with M.G.L. c. 148, § 12.

**1.12.8.39.1.1.1 Sale or Transfer.** Compliance with the following shall be required for permits:

- (1) The transferee shall immediately apply for a new permit for the magazine, building or structure.
- (2) Any owner shall notify the State Fire Marshal immediately of the sale or transfer of a magazine, building or structure. The owner shall remove the permit number from the magazine, building or structure upon sale or transfer.

**1.12.8.39.1.1.2 Application to Manufacture.**

**1.12.8.39.1.1.2.1** Applicants for a permit to manufacture explosives shall submit proof of license to manufacture explosives materials issued in accordance with 27 CFR Part 55, and a license and registration, as applicable, to keep, store, manufacture or sell explosive material, issued in accordance with M.G.L. c. 148, § 13 with an application for a permit.

**1.12.8.39.1.1.3 Plans.**

**1.12.8.39.1.1.3.1** A plan drawn to scale shall be required to be submitted with the application for permit showing the arrangement of the various buildings and magazines of the manufactory and the egress therefrom, their relative location to other buildings and property lines, and shall clearly indicate the following:

- (1) The location of the manufactory;
- (2) The name of the owner and/or occupant;
- (3) The kind and maximum quantities of the explosives, raw materials, and finished products, and the manner in which they are to be kept or stored; and
- (4) The nature of the work to be carried on in each building.

**1.12.8.39.1.1.4 Permits Not Required.** Permits shall not be required for the following:

- (1) For smokeless propellants displayed in commercial establishments intended for sale and not exceeding 25 lbs. and stored in original manufacturer's containers of one lb. maximum capacity.
- (2) Small arms ammunition, primers, smokeless propellants and black powder stored in original containers and stored in a locked cabinet, closet or box when not in use as provided in Section 1.12.8.50. Small arms ammunition, as used here, shall mean any shotgun, rifle, or pistol cartridge and any cartridge or propellant actuated devices, excluding military ammunition containing bursting charges or incendiary, tracer, spotting, or pyrotechnic projectiles.

**1.12.8.39.1.1.5 Notification.**

**1.12.8.39.1.1.5.1** Each day any blasting operations are to be performed, notification shall be given at least two hours prior to such operations, if required by the Head of the Fire Department. Failure to notify will be cause for revocation of the permit.

**1.12.8.39.1.1.5.2** The Head of the Fire Department shall make a written report to the State Fire Marshal stating the details of any incident resulting in any injury to persons or property during an activity.

1.05: continued

**1.12.8.39.2 Fireworks.**

**1.12.8.39.2.1 Permit Requirements.** The following permit provisions shall be complied with:

- (1) An application for permit has been submitted and shall include the submittal of a fireworks user's certificate and a certificate of competency.
- (2) The quantity and description of materials to be used shall be listed on the permit application.

**1.12.8.39.2.2 Displays.**

- (1) Applications shall be submitted in writing at least 20 days in advance of a display, unless waived by the Head of the Fire Department.
- (2) Upon receipt of an application for fireworks the Head of the Fire Department shall make or cause to be made an investigation of the pertinent facts set forth in the application and a physical inspection of the display grounds for the purpose of determining compliance with the provisions of this *Code*.
- (3) These requirements may be waived if the same display has been witnessed at similar separate locations.
- (4) Upon completion of such investigation and inspection for fireworks, but no later than five days after receipt of said application, the Head of the Fire Department shall transmit one copy of said application to the State Fire Marshal and one copy to the applicant with his or her endorsement thereon in compliance with provisions of law, or his or her reason for withholding such endorsement.
- (5) Denial of a permit application for the use of special effects [fireworks] for just cause shall be determined by the Head of the Fire Department within a maximum of 24 hours after witnessing the preliminary display, and the applicant shall be so notified in writing within the next 24 hours with the reasons for such denial detailed.
- (6) The Head of the Fire Department shall notify the State Fire Marshal of substitutions of certificate holders within two working days following the display.
- (7) The applicant for the special effects [fireworks] permit shall demonstrate the fireworks display in the presence of the Head of the Fire Department or his designees at least four hours before the performance at the proposed location of the performance. Notice of the demonstration shall be given to the Head of the Fire Department at least four days in advance documenting the date and time of such demonstration.

**1.12.8.39.2.3 Permit Not Required.**

**1.12.8.39.2.3.1** A permit shall not be required for the transporting [interstate] of such fireworks or pyrotechnic materials if it is in accordance with U.S. DOT, Title 49 CFR.

**1.12.8.39.2.4 Cannon Mortar.**

**1.12.8.39.2.4.1 Permits Requirements.**

**1.12.8.39.2.4.1.1** A permit for the supervision of the firing of a cannon shall not be issued unless the person holds a valid certificate.

**1.12.8.39.2.4.3 Application.**

- (1) Applications shall be submitted where the supervised firing is to take place not less than 15 days in advance of firing date, and shall state whether blank-fire or live-fire is utilized.
- (2) Submission of this application is an assurance that the cannons to be fired will be inspected by the competent operator and meets all safety requirements prior to firing.

**1.12.8.39.2.5 Permits Not Required.**

**1.12.8.39.2.5.1** Persons holding a Certificate of Competency for cannons shall be permitted to store less than 50 lbs. of black powder.



1.05: continued

Table 1.12.8.39 Permits Required

Chapter 65	Blasting, Explosives, Fireworks, Model Rocketry and Flame Effects	
Work/Activity	Issuing Authority	Code Section/M.G.L.
Black Powder/Blasting/Explosives/Model Rocketry/Pyrotechnics/Cannons/Flame Effects		
Display of Fireworks Supervision of the use of explosives, fireworks and cannon mortar.	Head of Fire Department	Section 65.2.3
Storage and manufacturing of fireworks.	State Fire Marshal	
A vehicle carrying explosive materials left unattended and parked in an authorized area.	Head of Fire Department	
Pyrotechnics before a proximate audience.		Section 65.3.3
Flame effects before an audience.		Section 65.4.1.1 Section 65.4.2
Fireworks manufacturing.	State Fire Marshal	Section 65.5.1.2 M.G.L. c. 148, § 12
Model rocketry including storage of solid propellant model rocket motors, reloading kits, or motor components > 50 lbs. (23 kg) net weight at a residence.	Head of Fire Department	Section 65.6.1
High power rocketry, including storage of high power model rocket motors, motor reloading kits, and pyrotechnic modules.	Head of Fire Department	Section 65.8.2
Explosives including manufacturing and storage of explosive materials.	State Fire Marshal	Section 65.9.2.1 M.G.L. c. 148, § 12
Blasting.	Head of Fire Department	Section 65.9.2.2
Keeping and the storage of explosives.	State Fire Marshal	M.G.L. c. 148, § 13
Transportation [Intrastate].	State Fire Marshal and Head of Fire Department	Section 65.9.2.1 M.G.L. c. 148, § 13.
Storage of in any magazine, building or structure.	State Fire Marshal	Section 65.9.2.1
Delivery of fireworks to authorized personnel.	Head of Fire Department	Section 65.9.6.3
Cannon or Mortar Firing.		Section 65.11.2
		See Section 1.12.8.39

1.05: continued

1.12.8.40 Flammable and Combustible Liquids. [Chapter 66]

1.12.8.40.1 Permit Requirement.

1.12.8.40.1.1 Transport a Tank to a Tank Yard.

1.12.8.40.1.1.1 To transport a tank to an approved tank yard, the person requesting the permit shall provide the permit-granting authority (Head of the Fire Department) with notification of the designated site of disposition.

1.12.8.40.1.1.2 Receipt of Delivery.

1.12.8.40.1.1.2.1 Any person granted a permit to remove an installed tank shall, within 72 hours, provide a receipt for delivery of said tank to the site designated on the permit.

1.12.8.40.1.2 Inspection of Tanks. The Head of the Fire Department shall periodically inspect existing above ground tank installations for safety, and if he determines that the installation or operation constitutes a hazard, he shall require unsafe tanks to be removed from service.

1.12.8.40.1.3 Removal of Tanks and Underground Piping.

1.12.8.40.1.3.1 Within 24 hours after the removal of an underground tank and underground piping, the owner shall acquire a measurement for the presence of a release of oil or hazardous materials to the environment where contamination is most likely to be present on the site and, if requested, submit such documented measurements to the AHJ.

1.12.8.40.1.3.2 If contamination is found, the owner shall immediately notify the Head of the Fire Department as well as the Department of Environmental Protection.

1.12.8.40.2 Abandoned Tanks and Piping.

1.12.8.40.2.1 Abandoned tanks and piping shall beremoved.

1.12.8.40.2.2 Abandoned, as used here, means any tank and piping without use, either filling or draw off for a continuous period:

- (1) Any tank#10,000 gallons for a continuous period in excess of 12 months.
- (2) Any above ground storage tank >10,000 gallons for a continuous period in excess of 60 months and in compliance with 502 CMR 5.00: *Permit and Inspection Requirements of Above-ground Storage Tanks of More than Ten Thousand Gallons Capacity.*

Table 1.12.8.40 Permits Required

Chapter 66	Flammable and Combustible Liquids	
Work/Activity	Issuing Authority	Chapter/Code Section/M.G.L.
Construction, maintenance or use of any aboveground storage tank >10,000 gallons capacity, in aggregate.	State Fire Marshal	M.G.L. c. 148, § 37 502 CMR 5.00: <i>Permit and Inspection Requirements of Above-ground Storage Tanks of More than Ten Thousand Gallons Capacity</i>
To keep, store, manufacture, handle flammables or combustible liquids.	Head of Fire Department	Section 66.1.5
Installation, maintenance, and storage of waste oil storage tanks.		Chapter 66
Storage of alcohol based hand rub preparations > ten gallons.		Chapter 66
Removal of tanks and underground piping.		Chapter 66
Abandoned tanks.		Chapter 66
		See Section 1.12.8.40

1.05: continued

**1.12.8.41 Flammable Solids. [Chapter 67]**

**Table 1.12.8.41 Permits Required**

Chapter 67	Flammable Solids	
Work/Activity	Issuing Authority	Code Section
Storage of Flammable solids	Head of Fire Department	Section 67.1.2

**1.12.8.42 Chapter 68 Reserved.**

**1.12.8.43 Liquid Petroleum Gases and Liquefied Natural Gas. [Chapter 69]**

**1.12.8.43.1 Application for a Permit.**

**1.12.8.43.1.1** An application for a permit shall be submitted by the person, firm or corporation who will make the installation or connection to an LP-gas storage container, in the name of the owner or occupant of the premises.

**1.12.8.43.1.2 Notice of Completion and Inspection of Work.**

**1.12.8.43.1.2.1** Upon receipt of notification of completion of the work, the AHJ shall make an inspection of the installation within a reasonable time. If same is found to be in accordance with Chapter 69 and if applicable 502 CMR 5.00: *Permit and Inspection Requirements of Above-ground Storage Tanks of More than Ten Thousand Gallons Capacity*, the AHJ shall issue to the owner or occupant a permit for the keeping, storage, manufacture or sale of LP-gas in connection therewith, except where such storage is otherwise authorized by license.

**1.12.8.43.1.2.2 Violation.**

**1.12.8.43.1.2.2.1** If such installation is found not to be in accordance with Chapter 69, the permit shall be withheld and shall not be issued until the proper corrections have been made as directed, by written notice if requested, within a reasonably specified time and prior to any LP-gas being stored in the container(s).

**1.12.8.43.1.2.2.2** Permits for the storage are considered null and void if such containers are considered abandoned. Where containers are abandoned they shall be removed, as provided in Table 1.12.8.43. If permitted by the AHJ, such container may be reused in accordance with 1.12.8.43.1.1.

**1.12.8.43.1.3 Certificate of Completion.**

**1.12.8.43.1.3.1** See Section 1.12.8.51 for Certificate of Completion requirements regarding LP-gas storage installations and connections.

**1.12.8.43.2 Permits Not Required.**

**1.12.8.43.2.1** No permit shall be required to make a connection in the replacement of a portable container, or the filling of a stationary container.

**Table 1.12.8.43 Permits Required**

Chapter 69	Liquid Petroleum Gases and Liquefied Natural Gas	
Work/Activity	Issuing Authority	Code Section
Storage, use and handling and the installation or modification of stationary installations.	Head of Fire Department	Section 69.1.2
Keeping, removal, storage or use of LP-gas >42 lbs aggregate capacity.		
		See Section 1.12.8.43

1.05: continued

**1.12.8.44 Chapter 70 Reserved.**

**1.12.8.45 Chapter 71 Reserved.**

**1.12.8.46 Chapter 72 Reserved.**

**1.12.8.47 Chapter 73 Reserved.**

**1.12.8.48 Ammonium Nitrate.**

**1.12.8.48.1** If applicable, permits shall comply with the requirements of Chapter 65.

**1.12.8.49 Chapter 75 Reserved.**

**1.12.8.50 Quantities, Permits and License Requirements.**

**1.12.8.50.1** The activities and aggregate quantities listed in Table 1.12.8.50 shall be used in determining permit and/or license thresholds.

**1.12.8.50.2** All tanks, containers, vessels and transport vehicles are to be considered full for the purpose of permitting under this *Code* and under M.G.L. c. 148, § 13.

**1.12.8.50.3** This section shall not apply to Class II and III liquids that are not heated to or above their flash points and:

(1) That have no fire point when tested by ASTM D 92, *Standard Test Method for Flash and Fire Points by Cleveland Open Cup*, up to the boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change, or

(2) That are in a water-miscible solution or in dispersion with a water and inert (noncombustible) solids content of more than 80% by weight, which do not sustain combustion when tested using the “Method of Testing for Sustained Combustibility”, per 49 CFR 173, Appendix H, or the UN *Recommendations on the Transport of Dangerous Goods*.

**1.12.8.50.4** If a license is required based on the limits set forth in Table 1.12.8.50, it shall be issued in accordance with M.G.L. c. 148, § 13.

**1.12.8.50.5** A permit shall be obtained in accordance with Table 1.12.8.1 through Table 1.12.8.50 as applicable.

**1.12.8.50.6** When storing more than one class of liquid or other materials named in Table 1.12.8.50, a license shall only be required for the individual class or materials, which exceed the amounts listed.

**1.12.8.50.7** Explosive material classified as Division 1.5 and 1.6 shall not be regulated as an explosive in determining capacities subject to license requirements of M.G.L. c. 148, § 13.

1.05: continued

Table 1.12.8.50 Permit and/or License Thresholds

Materials	Quantities	Permit	License
Class 1 liquids Note 1: Gasoline may be used, kept, or stored in any building not used for habitation nor frequented by the public, # 7 gallons and provided the gasoline is stored in one or more approved containers without permit. Note 2: See alcohol based hand rub Table 1.12.8.1 Note 3: No permit or license needed when stored in containers of 60 gallons capacity or less; or Note 4: No permit or license needed when stored in portable tanks over 60 gallons capacity not intended for fixed use, including intermediate bulk containers (IBCs) designed for mechanical handling.	< 793 Gallons*	yes	no
	≥ 793 gallons	yes	yes
Class I liquids (in fixed storage containers) **Note: No permit or license needed for** storage tanks having a liquid capacity that exceeds 60 gallons capacity, intended for fixed installation and not used for processing.	<10,000 gallons**	yes	no
	≥ 10,000 gallons	yes	yes
Class II liquids.	< 10,000 gallons	yes	no
	≥ 10,000 gallons	yes	yes
Class IIIA liquids.	<10,000 gallons	yes	no
	≥ 10,000 gallons	yes	yes
Class IIIB liquids.	< 10,000 gallons	yes	no
	≥ 10,000 gallons	yes	yes
Flammable Solids.	< 100 lbs.	yes	no
	≥ 100 lbs.	yes	yes
Flammable gases (within a building).	< 3,000 cubic feet	yes	no
	≥ 3,000 cubic feet	yes	yes
Flammable gases (outside a building).	< 10,000 cubic feet	yes	no
	≥ 10,000 cubic feet	yes	yes
Fuel oil that may be kept for use in a building or other structure.	< 10,000 gallons of light or of heavy	yes	no
	≥ 10.000 gallons of light or of heavy	yes	yes
Small arms ammunition of rim fire ammunition. [private use]	< 10,000 rounds	no	no
	≥ 10,000- 30,000 rounds	yes	no
	> 30,000 rounds	no	yes
Small arms ammunition of center fire ammunition. [private use]	< 10,000 rounds	no	no
	≥ 10,000- 50,000 rounds	yes	no
	> 50,000 rounds	no	yes



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Materials	Quantities	Permit	License
Small arms ammunition of shotgun ammunition. [private use]	< 5,000 rounds	no	no
	≥ 5,000 rounds- 50,000 rounds	yes	no
	> 50,000 rounds	no	yes
Small arms ammunition primers. [private use]	< 10,000 caps or other small arms primers	no	no
	≥ 10,000 caps or other small arms primers	no	yes
Small arms ammunition primers. [commercial use]	< 100,000 caps or other small arms primers	yes	no
	≥ 10,000 caps or other small arms primers caps or other small arms primers	no	yes
Smokeless propellants. [private] Note 1: Persons younger than 18 years old may not keep or store smokeless propellants. Note 2: Not more than two pounds of such propellant shall be stored in a multiple family dwelling or a building of public access.	< 16 lbs.	no	no
Smokeless propellants. [private]	≥ 16 lbs. through 47 lbs.	yes	no
Smokeless propellants. [commercial]	≥ 48 lbs.	no	yes
	≥ 16 –lbs to < 99 lbs.	yes	no
	≥ 100 lbs.	no	yes
Black powder. Note: Persons younger than 18 years old may not keep or store any amount of black powder.	≤ 2 lbs ≤ 5 lbs. ≥ 5 lbs.	no	no
Black powder. [private]	≤ 50 lbs.	yes	no
Black powder. [commercial] See Section 1.12.8.39.2.5.1 for permit exemption individual.	≥ 50 lbs.	no	yes
Special industrial explosive devices.	< 50 lbs. net weight of explosives	no	no
	≥ 50 lbs. net weight of explosives	no	yes
Explosive material. Note: Fireworks can be stored up to 30 days without a land license.	Classified Division 1.1 - 1.6	yes	yes

1.05: continued

Materials	Quantities	Permit	License
LP-gas.	< 42 lbs. [10 gallons]	no	no
	≥ 42 lbs. [10-gallons]	yes	no
	> 2,000 gallons of LP-gas in the aggregate	yes	yes
Flammable or class II combustible liquids unattended within cargo tanks, portable tanks or transfer tanks on a parcel of land. This shall not apply to parcels of land permitted by the Head of the Fire Department prior to September 1, 2008.	≤ 15,000 gallons in the aggregate	yes	no
	> 15,000 gallons in the aggregate	no	yes

**1.12.8.51 Certificates of Completion.** A certificate of completion shall be filed as provided in Table 1.12.8.51.

**1.12.8.51.1** A person making the installation or connection of an oil burner, alternate fuel installation, or LP-gas installation shall within 72 hours (excluding Saturday, Sunday and holidays) after test-firing the burner, file such certificate of completion.

**1.12.8.51.2 Inspection.** Upon receipt of a certificate of completion, the Head of the Fire Department shall make an inspection of the installation within a reasonable time and, if same is found to be in accordance with this *Code*, the AHJ shall issue to the owner or occupant an applicable permit.

**Table 1.12.8.51 Certificates Required for Permit**

Chapters 11, 42 and 69	Certificates of Completion
Type	
Oil Burner Technician [Chapter 11]	
Upon completion the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this <i>Code</i> .
Alternate Fuels [Chapter 42]	
Upon completion of an installation or connection the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this <i>Code</i> .
LP-gas [Chapter 69]	
Upon completion of an installation or connection the person, firm or corporation having made the installation or connection:	Shall certify in writing on a form approved by the State Fire Marshal to the Head of the Fire Department that the work has been completed, and in conformity with the requirements of this <i>Code</i> .
	See Section 1.12.8.51

**1.13 Certificates.**

**1.13.1 Authorization.** The State Fire Marshal shall have the authority to require certificates and collect fees for individuals or companies performing any of the following activities.

- (1) Sale, manufacture, possession or use of explosive materials, blasting operations, fireworks displays, storage of fireworks, use of pyrotechnics or special effects before a proximate audience; Chapter 65
- (2) Inspection, servicing or recharging of portable fire extinguishers; Chapter 13
- (3) Installation, servicing or recharging of fixed fire extinguishing systems; Chapter 13

1.05: continued

- (4) Cleaning and inspection of commercial cooking operations; Chapter 50
- (5) Operating self service gas stations; Chapter 42
- (6) Operating marine fueling facilities and mobile marine fueling vehicles; Chapter 42
- (7) Transportation of any combustible liquid; Chapter 42
- (8) Crowd management services; Chapter 20; and
- (9) Activities related to the operation and firing of muzzle-loading cannons; Chapter 65

**1.13.1.1** No person shall conduct a business or engage in the work or activity prescribed in Section 1.13, unless the appropriate certificate(s) prescribed in Sections 1.13.5 through 1.13.11 have been issued and that such certificate is not expired, suspended, revoked, or fee not paid.

**1.13.1.2** The following provisions shall apply to each certificate issued by the State Fire Marshal:

- (1) Certificates shall be issued in such form as prescribed by the State Fire Marshal;
- (2) Certificates shall not be transferable;
- (3) Certificates shall be issued for the period of time as indicated on the certificate;
- (4) Address change shall be reported in writing to the State Fire Marshal's Office within 14 days of such change to maintain validity of the affected certificate;
- (5) Certificate shall not be issued to anyone younger than 18 years old;
- (6) Any individual or company to whom a certificate has been granted shall, upon request, produce and show proper identification and the certificate to the AHJ or anyone for whom that individual or facility seeks to render services;
- (7) Certificates shall not be altered;
- (8) Any evidence of alteration of any certificate shall render certificate invalid. Altered certificates shall be surrendered to the State Fire Marshal or his or her designee; and
- (9) Any insurance company providing coverage shall be licensed in the Commonwealth of Massachusetts by the Commissioner of Insurance.

**1.13.2 Certificates Required by the State Fire Marshal.** The following certificates shall be required and issued by the State Fire Marshal:

- (1) **Certificate of Competency (CC).** Issued to a person, in the individual's name, authorizing the person named in the certificate to perform an activity prescribed Section 1.13.  
A valid CC shall be carried on the person at all times.
- (2) **Certificate of Registration (CR).** Issued to a person, firm, company or other legal entity authorizing establishment, operation, and advertising of a business in the name stated on the certificate that performs an activity prescribed in Section 1.13.
  - (a) A CR shall be issued for each specific location of business activity.
  - (b) The holder of a CR shall not entitle the holder individually to carry out or execute the stated activity.
  - (c) The holder of a CR shall only advertise in the name as it is stated on the CR. Any sign, listing, or advertisement of the business shall display the certificate number.
  - (d) The holder of a CR shall report annually the name, address, and CC number of each certified person in his employ, in a manner acceptable to the State Fire Marshal.
  - (e) Every business issued a CR shall be properly equipped to perform the act or acts as permitted by the CR.
  - (f) Each CR shall be identified by type and shall bear an identifying number delineating as MA-CR-(number), the "MA" indicating it is a Massachusetts certificate.
  - (g) The Head of the Fire Department shall be notified in writing by the business conducting any service for which a certificate is required, within 48 hours of any deficiencies found and within 48 hours of the completion of the work to bring the system into compliance
- (3) **User Certificate (UC).** Issued to a person, firm, company or other legal entity authorizing establishment and operation of a business in a name other than the name stated on the certificate, that performs an activity prescribed in Section 1.13.
  - (a) A UC shall be issued to each company, firm, corporation, or other legal entity with a place of business.
  - (b) Additional certificates shall be required to be issued contingent upon multiple place of business locations.
  - (c) The holder of a UC shall not entitle the holder individually to carry out or execute the stated activity.

1.05: continued

### **1.13.3 Application for Certificate.**

**1.13.3.1** Applications shall be made in writing, complete and legible, with the applicable fee, submitted to the State Fire Marshal.

**1.13.3.2** The State Fire Marshal or his or her designee shall review every application for a certificate.

**1.13.3.3** Application fees are nonrefundable.

### **1.13.3.4 Examination.**

**1.13.3.4.1** The State Fire Marshal or his or her designee shall administer a written exam that measures the applicant's ability, knowledge and skill level.

**1.13.3.4.2** The State Fire Marshal shall be permitted to allow an applicant to submit test results from an examination given by a third-party certification entity, taken within two years of the date of application.

**1.13.3.4.2.1** The State Fire Marshal or his or her designees shall determine if said test measures the applicant's ability, knowledge and skill level in a manner equivalent to or greater than, the test administered by the State Fire Marshal.

**1.13.3.4.2.2** The State Fire Marshal shall be permitted to establish other examination criteria based on other laws and regulations

**1.13.3.4.3** The State Fire Marshal or his or her designee shall conduct an inspection to determine that the applicant possesses the required equipment for the type of certificate sought. A reasonable opportunity shall be given to correct any deficiencies discovered by the inspection before the issuance of the certificate.

**1.13.3.5 Incomplete Applications.** When the State Fire Marshal or his designee determines that an application to receive a certificate is incomplete, inadequate, or does not otherwise comply with the provisions of this *Code*, policy, or any other applicable law, the State Fire Marshal shall refuse to issue said certificate. If the refusal is based on the applicant's inability to pass an examination given to determine competency, the applicant may reapply in accordance with the policy of the State Fire Marshal.

### **1.13.3.6 Applicants.**

(1) Applicants shall meet the eligibility criteria for the applicable certificate as established by the State Fire Marshal and provide documentation of knowledge and experience particular to the profession as required on the application for certificate.

(2) Applicants applying for a certificate issued under Section 1.13 shall furnish such documents or other evidence as prescribed by the State Fire Marshal, as a condition to the issuance of such certificate.

### **1.13.3.7 Renewal of Certificate.**

**1.13.3.7.1** Unless stated otherwise, a certificate may be renewed upon written request of the holder, provided it is not expired, suspended, or revoked by the State Fire Marshal.

**1.13.3.7.2** Renewal applications shall be accompanied by the appropriate fee and shall be submitted at least one month in advance of the expiration date, or as otherwise required by the State Fire Marshal.

**1.13.3.7.3** Applicants submitting a renewal application shall meet the eligibility criteria for the applicable certificate as established by the State Fire Marshal.

**1.13.3.7.4** Certificates shall expire as indicted in Table 1.13.12.

### **1.13.4 Revocation or Suspension of Certificates issued by the State Fire Marshal.**

**1.13.4.1** The State Fire Marshal may revoke or suspend any certificate for failing to comply with any provision of this *Code*, M.G.L. c. 148, or if any misrepresentations are submitted in the application on which the issuance was based.

**1.13.4.1.1** Such revocation or suspension shall, where required under the provisions of M.G.L. c. 30A, be effective after the certificate holder has been given adequate notice and an opportunity for a hearing.

1.05: continued

**1.13.4.1.2** Any notice issued by the State Fire Marshal under this *Code*, shall be deemed delivered and received by said holder, if the notification is sent by certified mail, return receipt requested, to the last known address of said holder, according to the records of the State Fire Marshal at the time of such mailing.

**1.13.4.2 Instances Involving an Immediate Threat to Public Safety.**

**1.13.4.2.1** The State Fire Marshal may suspend or revoke, prior to a hearing, any certificate, or any rights and privileges granted thereby, issued under this *Code* or M.G.L. c. 148, whenever the holder thereof has committed a violation of any law, ordinance or bylaw relating to the subject matter of M.G.L. c. 148, or any provision of this *Code*, the nature of which would give the State Fire Marshal reason to believe that the continued operation by such holder is and will be so seriously improper as to constitute an immediate threat to the public safety.

**1.13.4.2.2** Upon such suspension or revocation, the State Fire Marshal shall forthwith send written notice thereof to the holder. Such notice shall specify the time and place of the violation.

**1.13.4.2.3** The State Fire Marshal or his or her designee may order the certificate to be delivered to him or her forthwith.

**1.13.4.2.4** The certificate shall not be reissued unless, upon examination or investigation, or after a hearing, the State Fire Marshal, or his designee determines that the certificate shall be re-issued.

**1.13.4.2.5** Said holder shall be entitled to a hearing within 30 days of the suspension or revocation.

**1.13.5 Servicing Portable Fire Extinguishers and/or Fixed Fire Extinguishing Systems. [Chapter 13]**

**1.13.5.1 General.** To service portable fire extinguishers and/or fixed fire extinguishing systems, both a CC and a CR shall be required.

**1.13.5.1.1** A CC shall be required for each person servicing fire extinguishers or systems

**1.13.5.1.2** A CR shall be required for each firm, company, corporation or other legal entity servicing fire extinguishers or systems.

**1.13.5.1.3** Additional CR shall be required for each business location.

**1.13.5.2 Certificate of Competency for Servicing Fire Extinguishers and Systems.**

**1.13.5.2.1** An applicant requesting a certificate shall comply with the following;

(1) Submit a completed application in accordance with Section 1.13.3 for the servicing of portable fire extinguishers and/or fixed fire extinguishing systems, identifying applicable type of certificate (restriction(s)) to the State Fire Marshal's Office.

(2) An application for a Type 47 and a Type 48 certificate of competency shall be accompanied by a written attestation, enumerating the applicant's technical qualifications, competency, and experience to charge, recharge, repair, test, inspect and service engineered or pre-engineered systems.

**1.13.5.2.2 Examination for Servicing Fire Extinguishers.**

(1) The State Fire Marshal shall establish a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to this *Code*.

(2) The applicant shall successfully pass an examination as a prerequisite to the issuance of a certificate. The examination shall consist of multiple-choice, fill-in, true-false, or short answer questions, and may include the following topics:

- (a) Diagrams, plans or sketches;
- (b) Portable fire extinguishers: charging, recharging, servicing, testing, and inspecting;
- (c) Engineered fixed fire extinguishing systems: charging, recharging, altering, repairing, testing, inspection, installation, and servicing;
- (d) Pre-engineered fixed fire extinguishing systems; and
- (e) Self service fire extinguishing systems.



1.05: continued

1.13.5.3 Certificate of Registration for Servicing Fire Extinguishers and Systems.

1.13.5.3.1 An applicant requesting a certificate for a firm, company, corporation or other legal entity shall submit a completed application in accordance with Section 1.13.3 for the servicing of portable fire extinguishers and/or fixed fire extinguishing systems, identifying applicable type of restriction(s).

1.13.5.4 Service Tags.

1.13.5.4.1 Approved service tags installed by the holder of a certificate shall include all of the following information on the front of the tag:

- (1) The words “Do Not Remove Per Order of the State Fire Marshal” on the top front of tag;
- (2) Servicing firm’s name and address;
- (3) Firm’s Certificate of Registration MA-CR number and type;
- (4) Type of service performed;
- (5) Date service performed;
- (6) Certificate of competency number of the qualified individual who performed or supervised the service(s) performed and their initials;
- (7) Space and lines for recording owner and location of equipment; and
- (8) Space and lines for recording type and size of extinguisher.

1.13.5.4.2 Prior to printing a service tag, each firm holding a valid certificate of registration shall forward one sample of the service tag to the State Fire Marshal for approval.

1.13.5.4.3 One service tag shall be attached to each portable fire extinguisher, engineered or pre-engineered fixed fire extinguishing system or to a vessel which has been hydrostatically tested.

1.13.5.4.4 A service tag shall be affixed and indicate the date, initials and certificate number of the person who conducted the most recent test.

1.13.5.4.5 Any engineered, pre-engineered and self-service fire suppression system inspected and found to be in noncompliance with its listing or manufacturer’s specifications shall have a service tag attached indicating noncompliance.

1.13.5.4.6 Noncompliance Service Tags.

1.13.5.4.6.1 Installed noncompliance service tags shall be bright orange, have the words “Noncompliance” in block letters not less than ½ inch in height and be black in color.

1.13.5.4.6.2 Tags shall contain the firm name, certificate of registration number, date of inspection, the reason for noncompliance and the initials and certificate of competency number of the person who conducted the inspection.

Table 1.13.5 Certificates Required

Chapter 13	Portable Fire Extinguishers and/or Engineered or Pre-engineered Fixed Fire Extinguishing Systems or Performing of Hydrostatic Testing		
Certificate of Registration and Certificate of Competency			
Activity	Description	Types for business entities [Registration]	Types for individuals [Competency]
For the installation, servicing, inspection, testing alteration, repair, and recharging.  Note: For hydrostatic testing of cylinders, <i>see</i> Federal License requirements and DOT provisions.	Self-serve Motor Fuel Facilities.	Type 40	Type 41
	Servicing portable fire extinguishers.	Type 42	Type 46
	Servicing engineered fixed fire extinguishing systems.	Type 43	Type 47
	Servicing pre-engineered fixed fire extinguishing systems.	Type 44	Type 48

1.05: continued

**1.13.6 Crowd Managers. [Chapter 20]**

**1.13.6.1 General.** For an individual to manage crowds of 100 or more in a nightclub, dance hall, discotheque or bar, a certificate of competency shall be required.

**1.13.6.2 Certificate of Competency for Crowd Manager.**

- 1.13.6.2.1** An applicant requesting a CC shall comply with the following:
- (1) Submit a completed application in accordance with Section 1.13.3 to the State Fire Marshal’s Office;
  - (2) The applicant shall be 21 years of age or older;
  - (3) The applicant shall receive training, as required by the State Fire Marshal; and
  - (4) The applicant shall successfully complete the training course as a prerequisite to the issuing of a certificate.

**Table 1.13.6 Certificate Required**

Chapter 20	Crowd Manager
Certificate of Competency	
Activity	Description
To an individual who will be managing crowds of 100 or more people.	In a nightclub, dance hall, discotheque, or bar

**1.13.7 Certificates Required by Chapter 11.** In addition to the requirements set forth in 1.13 the specific provisions shall apply to the types of certificates as provided by 1.13.7 (1) (a) through (c).

- (1) Oil Burner Technician and Apprentice.
  - (a) Certificate of Competency;
  - (b) Certificate of Completion; and
  - (c) Certificate of Compliance.

**1.13.7.1\* Oil Burner Technician and Apprentice.** A certificate of competency shall be required as a precondition before any oil burning equipment or any of the appurtenances thereto, can be altered, repaired or installed.

**A.1.13.7.1** See M.G.L. c. 148, §§ 10C through 10H regarding, certificates oil burner installations.

**1.13.7.1.1** A certificate of competency issued as an oil burner technician or as an apprentice shall be issued to the individual.

**1.13.7.1.2** The holder of a certificate of competency as an oil burner apprentice shall be permitted only to assist *via* supervision of a licensed oil burner technician.

**1.13.7.1.3** A certificate of competency, issued to a technician and apprentice, shall be carried on that person at all times and when requested shall display such certificate of competency on request.

**1.13.7.1.4 Application.** See application provisions in 1.13.3.

**1.13.7.1.4.1 Renewal.** License renewal application forms must be submitted no less than 30 days prior to the license expiration date.

**1.13.7.1.5\* Examination.** Except as provided by 1.13.7.1.5.1, the examination provisions in 1.13.3.4 shall be required as a prerequisite to licensure.

- A.1.13.7.1.5** See the following references:
- (1) M.G.L. c. 148, § 10C Alteration, repair or installation of oil burners; necessity of certificate; exceptions;
  - (2) M.G.L. c. 148, § 10D Certificate as oil burner technician; minimum age; application; fee; examination; duration of certificate; electrical work;
  - (3) M.G.L. c. 148, § 10E, governing apprentice certificates; fee; duration; expiration; renewal.

**1.13.7.1.5.1** The examination provisions shall not be applicable as a prerequisite to licensure as an apprentice.

## 1.05: continued

**1.13.7.2 Certificate of Completion.** Except as otherwise provided by 1.12.8.2.1, a certificate of completion, as it applies to Chapter 11, entitled Building Services, shall be used, completed, required and submitted to the Head of the Fire Department as a precondition before a permit shall be issued:

- (1) For the delivery of and storage of fuel oil; and
- (2) For the operation of an oil fuel burner.

**1.13.7.2.1** The burner technician shall be responsible for the submittal of a certificate of completion to the Head of the Fire Department within 72 hours (excluding Saturday, Sunday and holidays), regarding one or more of the activities listed in 1.13.7.2.1 (1) and (2).

- (1) Requesting a permit to store fuel oil
- (2) Inspection;
  - (a) Installation work is completed
  - (b) Tank replacement is completed
  - (c) Oil line protection is completed
  - (d) Combustion performance test is completed.

Exception to 1.13.7.2.1(2)(d): A combustion performance test shall not be required when other permitted work such as the, upgrading oil fuel lines, or the replacement or removal of an oil fuel tank or, for the repair or replacement of zone-valves and circulators and the like are performed.

**1.13.7.2.1.1** When the applicable work described in 1.13.7.2.1(2) is approved, a permit shall be issued for the storage of fuel oil and for the use of the oil fuel boiler.

**1.13.7.3\* Certificate of Compliance.** A Certificate of Compliance is a standard form FP-056 prescribed by the State Fire Marshal and used to document by inspection, compliance with oil line upgrades.

**1.13.7.3.1** A Certificate of Compliance shall be completed and signed by a licensed technician.

- (1) Such signature certifies that the subject installation is in compliance and no other work activity is necessary to meet this provision.
  - (a) Upon completion, a copy of such certificate shall be given to the owner and Head of the Fire Department.
- (2) When an oil line needs upgrading as required by Massachusetts General Law a permit using form FP-056A shall be used, completed, required and issued as prescribed in 1.12.8.2.1.1 thereafter, a certificate of compliance shall be completed and submitted as provided in 1.13.7.3.1.

**1.13.7.3.2** The owner shall receive a copy and submit the certification (certificate of completion) to the Head of the Fire Department.

**1.13.7.3.3** The Fire Department Official shall maintain such certificate of completion in accordance with the records requirements in 1.11.

#### **1.13.7.4 Fuel Oil Deliveries - Responsibility.**

**1.13.7.4.1** Fuel oil deliveries shall not commence, unless the deliverer has verification that a permit has been obtained. Such verification may be considered to consist of any of the following:

- (1) Verification by the Head of the Fire Department that such a permit is in effect.
- (2) Written verification from the owner or customer that the permit is either in his or her possession or is posted on the premises.
- (3) Observation that such a permit is in the possession of the owner or customer, or is posted on the premises.

**1.13.7.4.2** Fuel oil shall not be delivered to a storage tank by means of a pump or under pressure in any case where a tight connection is made between the discharge line and the tank inlet, unless such storage tank is designed to withstand the additional stress to which it may be subjected or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undue pressure in excess of five psi. The delivery truck operator shall remain at the fill point during the entire operation.

### **1.13.8. Cleaning and Inspection of Commercial Cooking and Exhaust Systems. [Chapter 50]**

**1.13.8.1 General.** To clean and inspect commercial cooking and exhaust systems the following certificates shall be required.

**1.13.8.1.1** A CC shall be required for each person performing such activity.

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**1.13.8.1.1.1** Type 1 shall be required for an individual to offer cleaning and inspection of commercial cooking and exhaust systems to the general public.

**1.13.8.1.1.2** Restricted Type 2 shall be required for an individual to clean commercial cooking and exhaust systems that are owned by the certificate holder or their employer.

**1.13.8.1.2** A CR shall be required for the organization offering such activities..

**1.13.8.1.2.1** Type 1 shall be required for a sole proprietor, company, firm, corporation, or other legal entity to offer cleaning and inspection of commercial cooking and exhaust systems to the general public.

**1.13.8.1.2.2** A Type 1 CR by itself shall not allow the holder to perform the actual activity of cleaning and inspection of commercial cooking and exhaust systems.

**1.13.8.2 Certificate of Competency for Cleaning and Inspection of Cooking Systems.**

**1.13.8.2.1** An applicant requesting a CC shall comply with the following:

- (1) Submit a completed application in accordance with Section 1.13.3 for the cleaning or inspection of commercial cooking operations to the State Fire Marshal’s Office;
- (2) Submit a completed affidavit verifying 500 hours of supervision in the cleaning or inspection of commercial cooking operations. The State Fire Marshal may develop forms for the purposes of confirming the 500 hours of experience; and
- (3) The applicant shall successfully pass an examination as a prerequisite to the issuing of a certificate.

**1.13.8.3 Certificate of Registration for Cleaning and Inspection of Cooking Systems.**

**1.13.8.3.1** An applicant requesting a CR shall submit a completed application in accordance with Section 1.13.3 for the cleaning or inspection of commercial cooking operations to the State Fire Marshal’s Office.

**Table 1.13.8 Certificates Required**

Chapter 50	Cleaning and Inspection of Commercial Cooking and Exhaust Systems	
Certificate of Competency		
Activity	Type	
To an individual who will be offering or conducting or engaging in the cleaning or inspection of commercial cooking and exhaust equipment.	Type 1	
To an individual cleaning their own or their employer’s commercial cooking and exhaust equipment.	Type 2 Restricted	
Certificate of Registration		
Activity	Type	
To an organization that will be offering or conducting or engaging in the cleaning or inspection of commercial cooking and exhaust equipment.	Type 1	

1.05: continued

**1.13.9 Cannon and Mortar. [Chapter 65]**

**Table 1.13.9 Certificates Required**

Chapter 65	Cannon and Mortar
Certificate of Competency	
Activity	Description
Individuals to conduct or engage in any operation or activity which governs the firing of muzzle-loading cannons.	For patriotic celebrations and reenactments, including all such cannons ranging from pre-revolutionary war vintage to present day facsimiles, except any cannon exhibit in which explosives are not being used.

**1.13.10 Fireworks Display, Special Effects or Proximate Audience Displays. [Chapter 65]**

**1.13.10.1 General.** To display fireworks and special effects or proximate audience displays, both a CC and a UC shall be required.

**1.13.10.1.1** A CC shall be required for the display of fireworks.

**1.13.10.1.2** A CC shall be required for special effects or proximate audience displays.

**1.13.10.1.3** A CC shall be required for each person performing each such activity.

**1.13.10.1.4** A UC for fireworks shall be required for each firm, company, corporation, or other legal entity.

**1.13.10.1.5** Additional UC for fireworks shall be issued contingent upon multiple business locations.

**1.13.10.2 Certificate of Competency for Fireworks Display.**

**1.13.10.2.1** Applicants shall comply with the following:

- (1) Submit a completed application in accordance with Section 1.13.3 for the display of fireworks to the State Fire Marshal’s Office.
- (2) Provide evidence of active employment for a period of three years on a crew for professional fireworks displays, to encompass a minimum of ten displays.
- (3) Submit at least two letters of reference from other certificate holders within the state. At the option of the State Fire Marshal, an alternate requirement shall be permitted to be substituted.
- (4) Provide evidence of having satisfactorily completed a recognized fireworks safety course, subject to review by the State Fire Marshal, during the past 12 months.
- (5) The applicant shall be 21 years of age or older.
- (6) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to the display of fireworks and this *Code*.

**1.13.10.2.2 Renewal of Certificate of Competency.**

**1.13.10.2.2.1** The applicant requesting renewal shall comply with the following:

- (1) Proof of actively participating in at least two displays during the prior two years;
- (2) A notarized statement attesting that the person understands the contents of this *Code* pertaining to fireworks display and M.G.L. c. 148. The statement shall be made part of the application; and
- (3) Submit a renewal application as provided in Section 1.13.3 to the State Fire Marshal’s Office.

**1.13.10.4 Users Certificate for Fireworks. [Chapter 65]**

**1.13.10.4.1** Applicants shall comply with the following:

- (1) Submit a completed application in accordance with Section 1.13.3 for a user’s certificate to the State Fire Marshal’s Office; and
- (2) Provide evidence of a valid bond in accordance with M.G.L. c. 148, § 42.
  - (a) Supply evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal’s Office listing the name and claims representative, providing general liability in the amount of \$1,000,000 per occurrence and \$1,000,000 aggregate coverage; and



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- (b) A 30 day cancellation notice to the State Fire Marshal shall be a condition of the policy;
- (3) Provide a notarized statement indicating that fireworks materials shall be transported, stored, and handled or used in accordance with Chapter 65; and
- (4) Provide a statement attesting that the person or firm understands the contents of this *Code* and M.G.L. c. 148. The statement shall be made a part of the application.

#### **1.13.10.4.2 Expiration of Fireworks User Certificate.**

**1.13.10.4.2.1** A fireworks user's certificate shall expire upon the expiration of the ATF permit, bond, or the liability insurance, whichever occurs first.

#### **1.13.10.5 Certificate of Competency for Special Effects or Proximate Audience Displays. [Chapter 65]**

**1.13.10.5.1** Applicants shall comply with the following:

- (1) Submit a completed application in accordance with Section 1.13.3 to the State Fire Marshal's Office;
- (2) Submit evidence of knowledge and experience particular to the profession of conducting special effects displays. Such evidence shall include written documentation that the applicant has worked in at least ten special effects performances within two years from the date of application, under the direct supervision of a person who possesses a valid certificate of competency for such special effects issued by the Commonwealth or such similar certificate issued by another state;
- (3) Provide evidence of having satisfactorily completed a recognized fireworks safety course, approved by the State Fire Marshal, during the past 12 months;
- (4) Provide at least two letters of reference from other pyrotechnic certificate holders within the state. At the option of the State Fire Marshal, an alternate requirement can be substituted.
- (5) The applicant shall be at least 21 years of age or older; and
- (6) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to the display of special effects and this *Code*.

**1.13.10.5.2 Renewal** An applicant requesting renewal shall comply with all of the following:

- (1) Pass a reexamination covering state laws, regulations and industry safety standards pertaining to the display of special effects;
- (2) Submit proof of actively participating in at least two displays during the prior two years;
- (3) Provide a statement attesting that the person understands the contents of this *Code* pertaining to special effects and M.G.L. c. 148. The statement shall be made part of the application; and
- (4) Submit a renewal application as provided in Section 1.13.3.3 to the State Fire Marshal's Office.

**1.13.10.6 Supervision.** Fireworks, special effects and pyrotechnic compositions and devices shall be ignited and be supervised continuously by the person holding a Certificate of Competency for the display.

1.05: continued

**Table 1.13.10 Certificates Required**

Chapter 65	Fireworks, Special Effects and Proximate Audience Displays
Certificate of Competency	
Activity	Description
Individuals to conduct or engage in any activity, operation or act with the use of fireworks.	To conduct outdoor, marine or supervised displays of fireworks.
Individuals to conduct or engage in any activity, operation or act with the use of special effects or proximate audience effects.	To conduct outdoor/indoor, proximate audience special effects displays.
Fireworks User Certificate	
Activity	Description
Companies to conduct or engage in any operation (use or manufacture) or act for which governs the use of fireworks or special effects.	To possess and conduct fireworks or special effects.

**1.13.11 To Conduct or Engage in Any Activity, Operation, or Act Dealing with the Use and Manufacture of Explosives. [Chapter 65]**

**1.13.11.1 General.** To conduct or engage in any activity, operation, or act dealing with the use of explosives, both a Certificate of Competency and a User Certificate shall be required.

**1.13.11.1.1** A CC shall be required for each person performing activities prescribed in this section.

**1.13.11.1.2** A UC shall be required for each firm, company, corporation or other legal entity.

**1.13.11.1.3** Additional user certificates shall be required to be issued contingent upon multiple places of business.

**1.13.11.2 Certificate of Competency for Explosives. [Chapter 65]**

**1.13.11.2.1** Applicants shall comply with the following:

- (1) The applicant shall be 21 years of age or older
- (2) Submit a completed application in accordance with Section 1.13.3 to the State Fire Marshal’s Office;
- (3) Pass a comprehensive written examination covering state laws, regulations and industry safety standards pertaining to this *Code*;
- (4) Provide evidence of having satisfactorily completed a recognized safety course, subject to review by the State Fire Marshal, during the past 12 months; and
- (5) Have at least two letters of reference from other certificate holders within the state. At the option of the State Fire Marshal, an alternate requirement may be permitted.

**1.13.11.2.2 Blasting. [Chapter 65]**

**1.13.11.2.2.1** No blasting operation shall be conducted at any time, unless a blaster holding a certificate of competency is physically present.

**1.13.11.2.2.2** Trainees, helpers, and other persons shall be permitted to work only under the supervision of a blaster holding a CC.

**1.13.11.2.3 User Certificate for Explosives. [Chapter 65]**

**1.13.11.2.3.1** The applicant shall comply with the following:

- (1) Submit a completed application in accordance with Section 1.13.3 to the State Fire Marshal’s Office;

1.05: continued

- (2) Provide evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal’s Office listing the name and claims representative, providing general liability in the amount of \$1,000,000 per occurrence and \$1,000,000 aggregate coverage. A 30-day cancellation notice to the State Fire Marshal shall be a condition of the policy;
- (3) Provide evidence of a valid blasting bond; and
- (4) Provide a statement indicating that explosive materials shall be kept in magazines which meet the requirements of Chapter 65 and in accordance with 27 CFR Part 55. Provide a notarized statement attesting that the person or firm understands the contents of this *Code* and M.G.L. c. 148.

**1.13.11.2.3.2** A UC shall not be required for small arms ammunition. Small arms ammunition, as used here, means any shotgun, rifle, or pistol cartridge and any cartridge or propellant actuated devices, excluding military ammunition containing bursting charges or incendiary, tracer, spotting, or pyrotechnic projectiles;

**1.13.11.2.3.3** The UC for explosives shall expire upon the expiration of the ATF permit, bond, or the liability insurance, whichever occurs first.

**Table 1.13.11 Certificates Required**

Chapter 65	Explosive Use and Handling
Certificate of Competency	
Activity	Description
Allows individuals to conduct or engage in any activity, operation or act dealing with the use of explosives.	To conduct blasting operations, including: research and development (R&D), and blasting for the cleaning of boilers.
Explosive User Certificate	
Activity	Description
Allows companies to conduct or engage in any operation (use, handling or manufacture) of explosives.	To possess and conduct explosive activity or operation.
	To manufacture explosive materials.

**1.13.12 Certificate of Registration for On-demand Fueling.**

**1.13.12.1** An applicant requesting a Certificate of Registration (CR) shall submit a completed application in accordance with Section 1.13.3 to conduct On-demand Fueling operations to the State Fire Marshal's Office in accordance with the following:

- (1) Provide evidence of valid liability insurance coverage in the form of a certificate issued by the insurance agency to the State Fire Marshal's Office listing the name and claims representative, providing general liability in the amount of \$1,000,000 per occurrence, and \$5,000,000 aggregate coverage. A 30-day cancellation notice to the State Fire Marshal shall be a condition of the policy.
- (2) Provide a notarized statement attesting that fueling operations shall meet the requirements of Chapter 42.
- (3) Provide a notarized statement attesting that the applicant understands the contents of this *Code* and M.G.L. c. 148.
- (4) Provide a copy of the general safety and emergency response plan.

**Table 1.13.12 Certificates Required**

Chapter 42	On-demand Mobile Fueling
Certificate of Registration	
Activity	Description
Companies to conduct the fueling of motor vehicles to the general public.	Mobile fueling of vehicles

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**1.13.13 Renewal of Certificates.** The following certificates shall be renewed as provided in Table 1.13.12 and Section 1.13.

**Table 1.13.13**

Chapter	Type of Certificate	Description	Expiration Date [See Note 1 and 2]	Exam Required for Renewal	Acronym*
11	Competency Technician	To alter, repair or install any oil burning equipment or any of the appurtenances thereto	Initial licensure 12 months from DOB Every 24 months after based on DOB	No, unless failed to renew within 2 yrs. of expiration	BU
11	Competency Apprentice	Can only work under the direct supervision of a technician regrading oil burning equipment or any of the appurtenances thereto	Initial licensure 12 months from DOB Every 24 months after based on DOB	No	OA
13	Registration	Servicing Self-serve Motor Fuel Fire Suppression Systems. Company Type 40	two yrs. from date of issue	No	CR
13	Registration	Servicing Portable Fire Extinguishers. Company Type 42	two yrs. from date of issue	No	CR
13	Registration	Special Hazards Engineered (Fixed Fire Extinguishing Systems.) Company Type 43	two yrs. from date of issue	No	CR
13	Registration	Special Hazards Pre-engineered (Fixed Fire Extinguishing Systems.) Company Type 44	two yrs. from date of issue	No	CR
42	Registration	On-demand Fueling	two yrs from date of issue	No	ODF
50	Competency	Cleaning of Commercial Cooking Exhaust Systems Individual Type 2 Restricted	three yrs. Renewal on DOB	No	HC
50	Competency	Cleaning/Inspection of Commercial Cooking Exhaust Systems Individual Type 1			
50	Registration	Cleaning/Inspection of Commercial Cooking Exhaust Systems Company Type 1	two yrs. from date of issue	No	HCI
65	Competency	Cannon/Mortar Individual	five yrs. Renewal on DOB	No	CN
20	Competency	Crowd Manager Individual	three yrs. from date of issue	Yes	MFA
65	Competency	Special Effects Individual	two yrs. Renewal on DOB	Yes	SE
	User	Special Effects Company	one yr. or less dependent on ATF permit, bond and/or insurance	No	PY
	User	Pyrotechnic Company	one yr. or less dependent on ATF permit, bond and/or insurance	No	PY
	User	Fireworks Company	one yr. or less dependent on ATF permit, bond and/or insurance	No	PY
65	Competency	Fireworks Individual	two yrs. Renewal on DOB	No	FW

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1.05: continued

Chapter	Type of Certificate	Description	Expiration Date [See Note 1 and 2]	Exam Required for Renewal	Acronym*
65	Competency	Explosives Individual	two yrs. Renewal on DOB	No	BL
65	Registration	Blasting (Site work) Company	Based on the Explosive User Certificate	No	BL
65	User	Blasting (Boiler) Company		No	BL
13	Competency	Servicing Engineered Fixed Fire Extinguishing Systems Individual Type 47	two yrs. Cycle Renewal on DOB	No	CC
13	Competency	Servicing Pre-engineered Fixed Fire Extinguishing Systems Individual Type 48	two yrs. Renewal on DOB	No	CC
13	Competency	Self-serve Motor Fuel Facilities Individual Type 41	two yrs. Renewal on DOB	No	CC
13	Competency	Servicing Portable Fire Extinguishers Individual Type 46	two yrs. Renewal on DOB	No	CC
65	User	Explosives Certificate by location	one yr. or less dependent on ATF permit, and insurance Bond is waived for R & D Licenses	No	EUC
		Blasting Company			
		Research and Development Company			
		Boiler Cleaning Company			
65	User	Transport Fireworks (Permit by location)	one yr. from date of issuance	No	TF
		Magazine Explosives (Permit by location)	Annually on 3/31	No Exam, inspection required	MP
		Mobile			
		Magazine Explosives (Permit by location)	Annually on 10/31	No Exam, inspection required	MP
		Permanent			
65	User	Remote Firing Panel	five yrs. from date of issuance	No Exam, inspection required	RF
65	User	Dense Pack Portable firing trailers			DPP
65	User	Sell Explosives (License by location)	one yr. from date of issuance	No	LS
65	User	Sell Black or Smokeless Powder (License by location)	one yr. from date of issuance	No	SP
42	User	Marine Fueling:	Annually on 12/31	No	MF
		Marine Fuel Barges			
		Mobile Marine Fueling			
		Fixed Marine Fueling			
		Seasonal Marine Fueling Facility			

## 1.05: continued

\* Identifier for certificates used in database (MLO)

\*\* Special effects (company) and fireworks under Pyrotechnic User Certificate.

**Note 1.** DOB as used here means the date and year someone was born or such anniversary date.

**Note 2.** ATF as used here means Bureau of Alcohol, Tobacco and Firearms and Explosives.

**Note 3.** Renewals, unless otherwise provided, are submitted on an application prescribed by the State Fire Marshal.

**1.14 Plan Review and Approvals.****1.14.1 General.**

**1.14.1.2** Where permits and plan reviews are required by this *Code*, the AHJ shall complete plan reviews for new construction, modification, or rehabilitation, of any building, structure or facility.

**1.14.1.3** Construction documents and shop drawings submitted shall be approved by the AHJ before work commences and within 30 days of the date of receipt of a completed application and construction documents, unless extended by the AHJ.

**1.14.1.4** Review and approval by the AHJ shall not relieve the applicant of the responsibility of continued compliance with this *Code*.

**1.14.1.5** When required by the AHJ, revised construction documents or shop drawings shall be prepared and submitted for review and approval to illustrate corrections or modifications necessitated by field conditions or other revisions to approved plans.

**1.14.2 Applicants Responsibility.**

**1.14.2.1** The applicant shall be responsible to ensure that the following conditions are met:

- (1) The construction documents include fire protection requirements;
- (2) The shop drawings are correct and in compliance with the applicable codes and standards; and
- (3) The contractor maintains an approved set of construction documents on site.

**1.14.3 AHJ Responsibility.**

**1.14.3.1** It shall be the responsibility of the AHJ to promulgate policies and procedures that cover the following:

- (1) Criteria to meet the requirements of Sections 1.12 and 1.13; and
- (2) Review all of documents and related information within the established time frames for the purpose of acceptance or providing reasons for non-acceptance.

**1.14.4 Explosives Manufacturing.****1.14.4.1 Plans.**

**1.14.4.1.1** Explosives manufacturing requires a plan drawn to scale showing the arrangement of the various buildings and magazines of the manufactory and the egress therefrom, their relative location to other buildings and property lines and shall be submitted to the Head of the Fire Department and State Fire Marshal indicating the following:

- (1) The location of the manufactory;
- (2) The name of the owner and/or occupant;
- (3) The kind and maximum quantities of the explosives, raw materials and finished products and the manner in which they are to be kept or stored;
- (4) The nature of the work to be carried on in each building; and
- (5) A fire safety analysis conducted by a registered professional engineer.

**1.14.5 Marine Fueling Facility.****1.14.5.1 General.**

**1.14.5.1.1** Prior to conducting any construction or alteration activity to a new or existing fixed marine fueling facility, a registered design professional shall prepare and submit three complete stamped and scaled sets of plans and specifications to the Head of the Fire Department and the State Fire Marshal.

**1.14.5.1.2** One set of plans shall be marked State Fire Marshal's office copy, a second set of plans shall be marked Head of Fire Department copy and the third set of plans marked owner's copy. Such marking for each set of plans shall be in bold and located on the lower right hand legend.



## 1.05: continued

**1.14.5.1.3** All designs, blueprints, plans and specifications shall comply with the provisions of this *Code* and any other applicable state or federal regulations. The Head of the Fire Department and the State Fire Marshal's Office must approve the design submission or modification before any construction is commenced. The packet of plans and specifications shall include the following:

- (1) The design review fee required by the Head of the Fire Department and the State Fire Marshal's Office;
- (2) A cover letter providing an overview of the planned work, the location of the work and the legal name and address of the facility owner, operator and person(s) or company who will be conducting the work;
- (3) A copy of the current and valid registration or copy of the license to store flammables (Form FP-2) issued under M.G.L. c. 148, § 13 or a current and valid permit if a license is not applicable under M.G.L. c. 148, § 13;
- (4) Current permit (existing facilities only);
- (5) Scaled design plans indicating the locations of all piers, storage tanks, piping systems, hoses, dispensing nozzle locations, equipment, signage, path of the electrical static grounding systems, fire access roadway(s), travel from the closest fire apparatus to the foot of the marine wharf, the location and type of water standpipe system, the location of the nearest hydrant, location of the piping system, flexible hose, couplings, control valves, and swing and swivel joints, and for mobile fueling facilities, the designated location(s) that the fuel truck shall park to dispense fuel. A notation on the plan legend shall indicate the location and type of fire extinguishing systems, fuel dispensing nozzles, and the maximum number of dispensing nozzles, which can be operated simultaneously;
- (6) A statement that the blueprints, plans and specifications of the installation comply with the requirements of the provisions of this *Code* and any other applicable state or federal regulation;
- (7) A clear indication of fire access roadways and appropriate signage as directed by the Head of the Fire Department to allow for local enforcement of fire lane designation; and
- (8) A detailed drawing of the entire marine wharf, and floats showing the fueling location, tie up area(s) and all of the berthing areas.

**1.15 Technical Assistance.****1.15.1 General.**

**1.15.1.1** As permitted by other sections of this *Code*, the AHJ shall be permitted to require a review by an approved independent third-party with expertise in the matter, to be reviewed at the submitter's expense.

**1.15.1.2** The independent reviewer shall provide an evaluation and, if appropriate, recommend necessary changes of the proposed design, operation, process, or new technology to the AHJ.

**1.15.1.3** The AHJ shall be authorized to require design submittals to bear the stamp of a registered design professional.

**1.15.1.4** The AHJ shall make the final determination as to whether the provisions of this *Code* have been met.

**1.16 Notice of Violations and Penalties.****1.16.1 General.**

**1.16.1.1** Any person who mutilates, destroys, or removes posted orders or notices without the authorization of the AHJ, shall be deemed in violation of this *Code*.

**1.16.2 Criminal Enforcement.** Whenever the AHJ has reason to believe that a violation of this *Code* has occurred, written notification of said violation shall be issued in accordance with the provisions of M.G.L. c. 148.

**1.16.3 Alternative Civil Enforcement Option.** As an alternative to initiating criminal proceedings in a court of law under the provisions of M.G.L. c. 148, the AHJ, may initiate the alternative civil code enforcement option as provided in M.G.L. c. 148A, by issuing the standardized notice of violation form as prescribed by M.G.L. c. 148A. The provisions of Section 1.16.3 may only be utilized by the Head of the Fire Department or his or her designee if the jurisdiction has designated a municipal hearings officer in accordance with M.G.L. c. 148A.

## 1.05: continued

**1.16.3.1** Any order or notice issued pursuant to this *Code* shall be served upon the owner, operator, occupant, or other person responsible for the condition or violation in accordance with the provisions of M.G.L. c. 148 or, if applicable, M.G.L. c. 148A, if the alternative civil enforcement option is utilized.

**1.16.4 Penalties.**

**1.16.4.1** Any person who fails to comply with the provisions of this *Code* or who fails to carry out an order made pursuant to this *Code* or violates any condition attached to a permit, approval, or certificate shall be subject to penalties in accordance with M.G.L. c. 148 or, if applicable, M.G.L. c. 148A.

**1.16.4.5** Failure to comply with the time limits of an abatement notice or other corrective notice issued by the AHJ shall, unless otherwise specified, result in a new and separate offense for each day that such violation continues.

**Chapter 2 Referenced Publications.****2.1 General.**

(3) Where the requirements of a reference code or standard, called for within a Chapter of this Code is deleted, replaced, or revised, the source reference code or standard shall be deemed deleted, replaced or revised as such.

**2.2 NFPA 70 Publication.** Replace with the following:

NFPA 70, *The National Electrical Code*, codified as 527 CMR 12.00: *Massachusetts Electrical Code* (Amendments).

**2.2 NFPA Publications.** Replace with the following:

NFPA 15, *Standard for Water Spray Fixed Systems*, 2015 edition.

NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, 2015 edition.

Add:

NFPA 1123, *Code for Fireworks Display*, 2010 edition.

NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*, 2006 edition.

**2.3.1 ANSI Publications.** Add:

ANSI Z21.11.2, *Gas-fired Room Heaters, Volume II, Unvented Room Heaters*, 2013 edition.

ANSI Z-358.1, *American National Standard for Emergency Eyewash and Shower Equipment*.

ANSI Z49, *Safety in Welding, Cutting, and Allied Processes*, 2012 edition.

**2.3.6 ASTM Publications.** Add:

ASTM D86, *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure*.

ASTM D 975-11b, *Standard Specification for Diesel Fuel Oils*.

ASTM D1265, *Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method*.

ASTM D5305, *Standard Test Method for Determination of Ethyl Mercaptan in LP-gas Vapor*.

ASTM D 6751-11b, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels*.

ASTM D 7462-11, *Standard Test Method for Oxidation Stability of Biodiesel (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel (Accelerated Method)*.

**2.3.7 CGA Publications.** Replace with the following:

Compressed Gas Association, ANSI/CGA G-13, *Storage and Handling of Silane and Silane Mixtures*, 2015.

**2.3.17 UL Publications.** Add:

ANSI/UL 217, *Standard for Smoke Alarms*, 2015 edition.

ANSI/UL 268, *Smoke Detectors for Fire Alarm Systems*, 2016 edition.

ANSI/UL 521, *Standard for Heat Detectors for Fire Protective Signaling Systems*, 1999 edition.

ANSI/UL 539, *Standard for Single and Multiple Station Heat Alarms*, 2009 edition.

ANSI/UL 2034, *Standard for Single and Multiple Station Carbon Monoxide Alarms*, 2008 edition.

1.05: continued

ANSI/UL 2075, *Standard for Gas and Vapor Detectors and Sensors*, 2013 edition.

UL 1564, *Standard for Industrial Battery Chargers*, 2015 edition.

ANSI/UL 1973, *Standard for Batteries for Use in Light Electrical Rail (LER) Applications and Stationary Applications*, 2013 edition.

UL 9540, *Outline of Investigation for Energy Storage Systems and Equipment*, 2014 edition.

**2.3.20 U.S. Government Publications.** Add:

Code of Federal Regulations (CFR):

Title 29, Code of Federal Regulations, Parts 1910.1000 1910.1200 and 1910.1450.

Title 40, Code of Federal Regulations, Parts 152.175 and 156.10(i)(A).

Title 21, United States Code, Chapter 9, *Federal Food, Drug, and Cosmetics Act*.

Title 29, Code of Federal Regulations, 1910.119, Occupational Safety and Health Administration (OSHA) *Process Safety Management of Highly Hazardous Materials*. Regulated hazardous materials which are listed in 29 CFR 1910.119: Appendix A and described in 29 CFR 1910.119(a)(1)(ii).

Title 29, Code of Federal Regulations, 1910.1200, Occupational Safety and Health Administration (OSHA) *Hazard Communication*.

Title 29, Code of Federal Regulations, 1910.1450, Occupational Safety and Health Administration (OSHA) *Occupational Exposure to Hazardous Chemicals in Laboratories*.

Title 33, Code of Federal regulations, Part 126, *Handling of Dangerous Cargo at Waterfront Facilities*.

Title 40, Code of Federal Regulations, Part 60 *Standards of Performance for New Stationary Sources*.

Title 40, Code of Federal Regulations, Part 68, EPA (United States Environmental Protection Agency) *Chemical Accident Prevention Provisions*. Regulated hazardous materials included in 40 CFR 68.130 "List of Substances" with threshold quantities of regulated substances listed in the tables in 40 CFR 68.130.

Title 46, Code of Federal Regulations, Part 194, *Handling, Use, and Control of Explosives and Other Hazardous Materials*.

Title 49, Code of Federal Regulations, *Transportation*.

Title 29, Code of Federal Regulations, 1910.252 Subpart Q - *Welding, Cutting and Brazing*

**2.3.21 Other Publications.** Add:

APA *Standard 87-1*.

IAMPO *Uniform Mechanical Code*.

STI SP 001, *Standard for the Inspection of Aboveground Storage Tanks*.

Transport Canada (TC), *Transportation of Dangerous Goods Regulations*.

IME Safety Library Publication No. 20, *Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps)*.

American Association of State Highway and Transportation Officials (AASHTO). *Uniform Traffic Control Devices (MUTCD) Guidelines*.

California - Technical Bulletin 117-2013 (TB 117-2013) *Requirements, Test Procedure and Apparatus for Testing the Smolder Resistance of Materials Used in Upholstered Furniture*.

**2.3.22 Massachusetts Regulations.** Add:

Code of Massachusetts Regulations (CMR) Publications:

105 CMR: *Department of Public Health*

248 CMR: *Board of State Examiners of Plumbers and Gas Fitters (Plumbing Code)*.

257 CMR 2.00: *Certification of Operators of Wastewater Treatment Facilities*.

Department of Environmental Protection:

310 CMR 7.00: *Air Pollution Control*.

310 CMR 30.00: *Hazardous Waste*.

310 CMR 80.00: *Underground Storage Tanks*.

527 CMR 1.00: *Comprehensive Fire Safety Code Massachusetts (this Code)*.

527 CMR 12.00: *Massachusetts Electrical Code*.

528 CMR: *Bureau of Pipe Fitters and Refrigeration Technicians*.

780 CMR: *Massachusetts State Building Code (Building Code)*.

1.05: continued

**2.3.23 (M.G.L.) Massachusetts General Law. Add:**

M.G.L. c. 21E: *Massachusetts Oil and Hazardous Material Release Prevention and Response Act.*

M.G.L. c. 48: *Fires, Fire Departments and Fire Districts.*

M.G.L. c. 22D: *Department of Fires Services.*

M.G.L. c. 148: *Fire Prevention.*

M.G.L. c. 148A: *Code Enforcement Officer.*

M.G.L. c. 141: *Supervision of Electricians.*

M.G.L. c. 142: *Supervision of Plumbing.*

M.G.L. c. 143, § 3L: *Regulations Relative to Electrical Wiring and Fixtures; Notice of Electrical Installation.*

M.G.L. c. 143, § 96: *Specialized Codes Rules or Regulations.*

**2.4 References for Extracts in Mandatory Sections. Add:**

NFPA 1123, *Code for Fireworks Display*, 2010 edition.

NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*, 2006 edition.

**Chapter 3 Definitions.**

**3.2.2** Replace with the following:

**3.2.2\* Authority Having Jurisdiction (AHJ)** An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure. (See Enforcement, 1.6, 1.7.1 Administration, 1.7.1 and Official Interpretations, 1.7.3.1)

**A.3.2.2 Authority Having Jurisdiction (AHJ).** The phrase "authorityhavingjurisdiction," or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the AHJ may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the AHJ. In many circumstances, the property owner or his or her designated agent assumes the role of the AHJ; at government installations, the commanding officer or departmental official may be the AHJ.

In Massachusetts, the AHJ is based on an applicable code. Pursuant to M.G.L c. 143 § 96, the *Massachusetts State Building Code* shall incorporate, without change, specialized construction codes, rules or regulations pertaining to building construction, reconstruction, alteration, repair or demolition promulgated by and under the authority of such specialized boards. Specialized codes include, but are not limited to, the state plumbing code, electrical code, architectural barriers regulations, fire safety code, fire prevention regulations, sheet metal regulations and elevator regulations. The AHJ who enforces this *Code* is the Fire Official. There will be situations where the Fire Official may have to enforce this *Code* with other officials such as a Building Official or other specialized code official(s). Several examples of who is the AHJ, based on work activity, are provided below:

Example #1 In new construction and renovation of a building or structure the Building Official is the AHJ and the applicable code is the *Building Code*.

Example #2 Once a building or structure has a certificate of occupancy, the maintenance of the *Building Code* provisions, and the duties to maintain the building systems are enforceable through this *Code* therefore the AHJ is the Fire Official. Although, this delineation between pre- and post-certificate of occupancy is a general guideline, it is important to note that the AHJ follows the scope of the presiding specialized code which is not necessarily indicated by the issuance of a certificate of occupancy. In some instances, two or more AHJs may have jurisdiction over a code provision. In this case, the AHJ would comprise of multiple individuals, such as a Building Official, Fire Official, a Plumbing and Gas Inspector or an Inspector of Wires. Examples of such situations are provided below:

Example # 3 Hazardous material storage and use is regulated by both the *Building Code* and this *Code*. The AHJ for the applicable provisions are both the Building Official and the Fire Official.

Example #4 Except for sale and transfer, the installation/maintenance of a smoke alarms or detectors is regulated by the Building Code, therefore the AHJ is the Building Official, and the minimum wiring requirements are obtained using the *Massachusetts Electrical Code*, with the AHJ being the Inspector of Wires.



## 1.05: continued

Examples #3 and #4 above that require more than one AHJ: In circumstances involving compliance with two or more Massachusetts codes, the AHJ, while enforcing this *Code* should, to the extent as reasonably practicable, coordinate inspections so that owners and occupants of a building or structure are not subjected to visits by numerous inspectors nor multiple or conflicting orders. Whenever the AHJ observes an apparent or actual violation of some provision of law, ordinance, code or bylaw not within the AHJ's authority, the AHJ should report the findings to the appropriate code official having jurisdiction to enforce said law, ordinance, code or bylaw.

**3.3.14.2** Replace with the following:

**3.3.14.2 Control Area.** A building or portion of a building, enclosed and bounded by exterior walls, fire walls, fire barriers and roofs, or a combination thereof, or an outdoor area within which hazardous materials are allowed to be stored, dispensed, used, or handled in quantities not exceeding the maximum allowable quantities (MAQ).

**3.3.29** Replace with the following:

**3.3.29 Building.** A combination of any materials, whether portable or fixed, having a roof, to form a structure for the shelter of persons, animals or property. For the purpose of this definition “roof” shall include an awning or any similar covering, whether or not permanent in nature. The word “building” shall be construed where the context allows as though followed by the words “or part or parts thereof”.

**3.3.39** Replace with the following:

**3.3.39 Certificate.** A written document for the purpose of granting permission to conduct or engage in any operation or act for which certification is required by way of one or more of the following:

**3.3.39.1** Add:

**3.3.39.1 Certificate of Competency.** A written document issued by the State Fire Marshal to a person who has passed an examination for a particular profession which allows that person to be in charge of and responsible for the regulated activity.

**3.3.39.2** Add:

**3.3.39.2 Fireworks User’s Certificate.** A certificate which allows a person, firm, corporation or other legal entity to use or handle fireworks.

**3.3.39.3** Add:

**3.3.39.3 Explosives Users Certificate.** A certificate issued to a firm or company, indicating the rebuttable presumption of statutory and regulatory compliance with responsible levels of liability insurance and bonds required by M.G.L. c. 148, §§ 19, 20 and 20A, explosive storage magazines, and a general knowledge of the requirements of explosive regulations in the use or handling of explosives.

**3.3.39.4** Add:

**3.3.39.4 Certificate of Registration.** A written document issued by the State Fire Marshal to a person, firm or corporation for the purpose of granting permission to conduct or engage in servicing fire extinguishing systems.

**3.3.53.1** Replace with the following:

**3.3.53.1 Building Code.** referenced in Sections 2.3.22 and 1.1.

**3.3.53.2** Replace with the following:

**3.3.53.2 Massachusetts Electrical Code.** referenced in Sections 2.2 and 2.3.22.

**3.3.53.3** Replace with the following:

**3.3.53.3 Mechanical Code.** The *Massachusetts State Building Code* as referenced in Section 2.3.22.

**3.3.53.4** Replace with the following:

**3.3.53.4 Plumbing Code** referenced in Section 2.3.22.

**3.3.53.5** Add:

**3.3.53.5** This *Code* as referenced in Section 2.3.22.

## 1.05: continued

**3.3.141** Replace with the following:

**3.3.141 Handling.** The deliberate transport by any means to a point of storage, use, or processing.

**3.3.143\*** Replace with the following:

**3.3.143 Physical Hazard.** A chemical for which there is evidence that it is a combustible liquid, compressed gas, cryogenic, explosive, flammable gas, flammable liquid, flammable solid, organic peroxide, oxidizer, pyrophoric or unstable (reactive) or water-reactive material.

**3.3.155\*** Replace with the following:

**3.3.155 Incident Commander (IC).** The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

**3.3.173.15\*** Replace with the following:

**3.3.173.15 Unstable (Reactive) Material.** A material, other than an explosive, which in the pure state or as commercially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided and defined as follows:

**3.3.173.15.1 Class 1.** Materials that in themselves are normally stable, but which can become unstable at elevated temperatures and pressure.

**3.3.173.15.2 Class 2.** Materials that in themselves are normally unstable and readily undergo violent chemical change, but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures, and that can undergo violent chemical change at elevated temperatures and pressures.

**3.3.173.15.3 Class 3.** Materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction, but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

**3.3.173.15.4 Class 4.** Materials that in themselves is readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

**3.3.173.16.1** Add:

**3.3.173.16.1 Class 1.** Materials that may react with water with some release of energy, but not violently.

**3.3.173.16.2** Add:

**3.3.173.16.2 Class 2.** Materials that may form potentially explosive mixtures with water.

**3.3.173.16.3** Add:

**3.3.173.16.3 Class 3.** Materials that react explosively with water without requiring heat or confinement.

**3.3.189.1.6** Add:

**3.3.189.1.6 Unclassified Detonable.** Organic peroxides that are capable of detonation. These peroxides pose an extremely high explosion hazard through rapid explosive decomposition.

**3.3.192.1.1** Add:

**3.3.192.1.1 Oxidizing Gas.** A gas that can support and accelerate combustion of other materials.

**3.3.206** Replace with the following:

**3.3.206 Process or Processing.** A sequence of operations in which the sequence can be inclusive of physical operations such as heating, cooling, mixing, distilling, compressing, and pressurizing, and chemical operations, such as polymerization, oxidation, reduction, and other chemical reaction processes. The sequence can involve, but is not limited to: preparation, separation, combination, purification, or any actions that cause a change in state, energy content, or chemical composition.



1.05: continued

**3.3.212** Replace with the following:

**3.3.212 Pyrophoric.** A chemical with an autoignition temperature in air, at or below a temperature of 130°F (54.4°C).

**3.3.236.2** Replace with the following:

**3.3.236.2 Flammable Solid.** A solid, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard.

**3.3.252** Replace with the following:

**3.3.252 Structure.** A combination of materials assembled at a fixed location to give support or shelter, such as a building, framework, retaining wall, tent, reviewing stand, platform, bin, fence, sign, flagpole, mast for radio antenna or the like. The word “structure” shall be construed, where the context allows, as though followed by the words “or part or parts thereof”.

**3.3.255.8** Add:

**3.3.255.8 Underground Storage Tank (UST).** As defined and regulated by 310 CMR 80.00: *Underground Storage Tanks (UST) Systems*.

**3.3.278** Add:

**3.3.278 Water-reactive Material.** A material that explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause self-ignition or ignition of nearby combustibles upon exposure to water or moisture. Water-reactive Material are subdivided and defined as follows:

**3.3.278.1 Class 1.** Materials that may react with water with some release of energy, but not violently.

**3.3.278.2 Class 2.** Materials that may form potentially explosive mixtures with water.

**3.3.278.3 Class 3.** Materials that react explosively with water without requiring heat or confinement.

**Chapter 4 General Requirements.** Chapter 4 Delete in its entirety and replace it with the following:

**4.1.1 Goals.** The goals in Chapter 4 of this *Code* shall be used as guidance to achieve a reasonable level of safety, property protection, and public welfare from the hazards created by fire, explosion, and other hazardous conditions. The prescribed requirements are found in other Chapters of this *Code* and the *Building Code*.

**4.4 Fundamental Requirements.**

**4.4.3 Means of Egress.**

**4.4.3.1 Unobstructed Egress.**

**4.4.3.1.1** In every occupied building or structure, means of egress from all parts of the building shall be maintained free and unobstructed.

**4.4.3.1.2** No lock or fastening shall be permitted that prevents free escape from the inside of any building other than in health care occupancies and detention and correctional occupancies where staff are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

**4.4.3.2 Awareness of Egress System.**

**4.4.3.2.1** Every exit shall be clearly visible, or the route to reach every exit shall be conspicuously indicated in accordance with the *Building Code*.

**4.4.3.2.2** Each means of egress, in its entirety, shall be arranged or marked so that the way to a place of safety is indicated in a clear manner in accordance with the *Building Code*.

**4.4.3.2.3 Lighting.** Illumination of means of egress shall be provided in accordance with the *Building Code*.

**4.5 General Requirements.**

**4.5.1 Authority Having Jurisdiction (AHJ).**

**4.5.1.1** The AHJ shall determine whether the provisions of this *Code* are met.

1.05: continued

**4.5.1.2** Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if its application would be hazardous under normal occupancy conditions in the judgment of the AHJ.

**4.5.3 Provisions in Excess of Code Requirements.** Nothing in this *Code* shall be construed to prohibit a better type of building construction, an additional means of egress, or an otherwise more safe condition than that specified by the minimum requirements of this *Code*.

**4.5.4 Conditions for Occupancy.** No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this *Code*, unless the following conditions exist:

- (1) A plan of correction has been approved.
- (2) The occupancy classification remains the same.
- (3) No serious life safety hazard exists as judged by the AHJ.

**4.5.5 Warrant of Fitness.**

**4.5.5.1** Where compliance with this *Code* is effected by means of a performance-based design, the owner shall annually certify compliance with the conditions and limitations of the design by submitting a warrant of fitness acceptable to the AHJ.

**4.5.5.2** The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by Sections 5.1.8 and 5.7.3 and that they continue to satisfy the goals and objectives specified in Section 4.1.1 (Section 5.1.11.)

**4.5.6 Construction, Repair, and Improvement Operations.**

**4.5.6.1** Buildings or portions of buildings shall be permitted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures and building protection measures acceptable to the AHJ are in place.

**4.5.6.2 Escape Facilities.**

**4.5.6.2.1** In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers as provided in the *Building Code*.

**4.5.6.2.2** Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of this *Code* and as provided in the *Building Code* insofar as they can reasonably be applied to buildings under construction.

**4.5.6.3** Flammable, hazardous, or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building and is such that materials are safeguarded when the building is unoccupied.

**4.5.7\* Changes of Occupancy.**

**4.5.7.1** In any building or structure, whether or not a physical alteration is needed, a change from one occupancy classification to another shall be permitted only where such a structure, building, or portion thereof conforms with the requirements of this *Code*, the provisions of the *Building Code* and applicable codes that apply to new construction for the proposed new use, except as follows:

- (1) Where, in the opinion of the AHJ, the proposed occupancy or change in use is not more hazardous than the existing use, based on life safety and fire risk, the AHJ shall be permitted to approve such change of occupancy provided compliance with the requirements of this *Code* for buildings of like occupancy or use are specifically incorporated to safeguard the life, health, and welfare of persons.
- (2) Change of tenants or ownership shall not be construed to be a change of occupancy classification where the nature of use and assigned occupancy classification remain the same.

**4.5.7.2** Where specifically permitted elsewhere in this *Code*, existing construction features shall be permitted to be continued in use in conversions.

1.05: continued

**4.5.9 Noncombustible Material.** A material that complies with any one of the following shall be considered a noncombustible material:

- (1) The material, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors, when subjected to fire or heat.
- (2) The material is reported as passing ASTM E 136: *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*.
- (3) The material is reported as complying with the pass/fail criteria of ASTM E 136: *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C* when tested in accordance with the test method and procedure in ASTM E 2652: *Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C*. [5000: 7.1.4.1]

**4.5.9.2** Where the term *limited-combustible* is used in this *Code*, it shall also include the term *noncombustible*. [5000: 7.1.4.1.2]

**4.5.10 Limited-combustible Material.** A material shall be considered a limited-combustible material where both of the following conditions of Sections 4.5.10.1, and 4.5.10.2, and the conditions of either Section 4.5.10.3 or 4.5.10.4, are met. [5000:7.1.4.2]

**4.5.10.1** The material does not comply with the requirements for a noncombustible material in accordance with Section 4.5.9. [5000: 7.1.4.2(1)]

**4.5.10.2** The material, in the form in which it is used, exhibits a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) where tested in accordance with NFPA 259, *Standard Test Method for Potential Heat of Building Materials*. [5000:7.1.4.2(2)]

**4.5.10.3** The material has a structural base of a noncombustible material with a surfacing not exceeding a thickness of ¼ inch (3.2 mm) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E 84: *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723: *Standard for Test for Surface Burning Characteristics of Building Materials*. [5000:7.1.4.2.1]

**4.5.10.4** The material is composed of materials which, in the form and thickness used, neither exhibit a flame spread index greater than 25 nor evidence of continued progressive combustion when tested in accordance with ASTM E 84: *Standard Test Method for Surface Burning Characteristics of Building Materials* or ANSI/UL 723: *Standard for Test for Surface Burning Characteristics of Building Materials*, and are of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor evidence of continued progressive combustion when tested in accordance with ASTM E 84 or ANSI/UL 723. [5000: 7.1.4.2.2]

**Chapter 5 Performance Based Option.** Chapter 5 Delete in its entirety and replace with the following:

**5.1\* General.**

**5.1.1 Application.** The requirements of this Chapter shall apply to facilities designed to the performance-based option permitted by the *Building Code* and this *Code*.

**5.1.2 Goals and Objectives.** The performance-based design shall meet the goals and objectives of this *Code* in accordance with the *Building Code* or this *Code*.

**5.1.4\* Plan Submittal Documentation.** When a performance based design is submitted to the AHJ and the Building Official for review and approval, the owner shall document, in an approved format, each performance objective and applicable scenario, including any calculation methods or models used in establishing the proposed design's fire and life safety performance.

**5.1.5\* Independent Review.** The AHJ shall be permitted to require an approved, independent third party to review the proposed design and provide an evaluation of the design to the AHJ at the expense of the owner.

**5.1.7 Final Determination.** The AHJ and the Building Official shall make the final determination as to whether the performance objectives have been met.

**5.1.8\* Operations and Maintenance Manual.** An approved Operations and Maintenance (O&M) Manual shall be provided by the owner to the AHJ and shall be maintained at the facility in the fire command center.

1.05: continued

**5.1.9\* Information Transfer to the Fire Service.** Where a performance-based design is approved and used a registered design professional shall ensure that information regarding the operating procedures of the performance-based designed fire protection system is transferred to the owner and to the AHJ for inclusion in the pre-fireplan.

**5.1.10\* Design Feature Maintenance.**

**5.1.10.1** The design features required for the facility to meet the performance goals and objectives shall be maintained by the owner and be readily accessible to the AHJ for the life of the facility.

**5.1.10.2** The facility shall be maintained in accordance with all documented assumptions and design specifications.

**5.1.10.2.1** Any proposed changes or variations from the approved design shall be approved by the AHJ and the building inspector prior to the actual change.

**5.1.10.2.2** Any approved changes to the original design shall be maintained in the same manner as the original design.

**5.1.11\* Annual Certification.** Where a performance-based design is approved and used, a registered design professional shall annually certify to the AHJ and the Building Official that the design features and systems have been maintained in accordance with the approved original performance-based design and assumptions and any subsequent approved changes or modifications to the original performance-based design.

**5.7.3 Facility Design Specifications.** All details of the proposed facility design that affect the ability of the facility to meet the stated goals and objectives shall be documented.

**Chapter 6 Classification of Occupancy.** Chapter 6 Delete in its entirety.

**Chapter 10 General Safety Requirements.**

**10.1.2\*** Delete.

**10.1.3** Replace with the following:

**10.1.3 Building Code.** All new construction shall comply with this *Code* and the *Building Code*.

**10.1.4.1** Replace with the following:

**10.1.4.1** Where structural elements have visible damage, the AHJ shall notify the Building Official.

**10.1.4.2** Delete.

**10.1.5** Delete.

**10.3.4.1** Replace with the following:

**10.3.4.1** In any building or structure, whether or not a physical alteration is needed, a change from one use or occupancy classification to another shall comply with the *Building Code*.

**10.4.2.1** Add:

**10.4.2.1 Overcrowding.** Overcrowding or admittance of any person beyond the established posted occupant load shall be prohibited. The AHJ, upon finding overcrowded conditions or obstructions in aisles, passageways or other means of egress, or any condition which constitutes a hazard to life and safety shall cause the performance, presentation, spectacle or entertainment to be stopped until the area posted occupant load is reestablished or the obstruction or hazardous condition is removed.

**10.5.1** Replace with the following:

**10.5.1 Where Required.** Emergency egress and relocation drills conforming to the provisions of this *Code* shall be conducted as specified by the provisions of Chapter 20 of this *Code*. Drills shall be designed in cooperation with the local authorities.

**10.5.2\*** Replace with the following:

**10.5.2 Drill Frequency.** Emergency egress and relocation drills, where required by Chapter 20 of this *Code* shall be held with sufficient frequency to familiarize occupants with the drill procedure and to establish conduct of the drill as a matter of routine. Drills shall include suitable procedures to ensure that all persons subject to the drill participate.

1.05: continued

**10.6.2** Delete.

**10.6.4** Delete.

**10.7** Add:

**10.7 Tampering with Fire Safety Equipment.** *See* M.G.L. c. 266 and M.G.L. c. 148, § 27A.

**10.7.1** through **10.7.3** Delete.

**10.8.1** Replace with the following:

**10.8.1 Where Required.** Emergency action plans shall be provided for high-rise, health care, ambulatory health care, residential board and care, assembly, day care centers, special amusement buildings, hotels and dormitories, housing for the elderly for six or more dwelling units, detention and correctional occupancies, educational, bulk merchandising retail buildings, underground and windowless structures, facilities storing or handling materials covered by Chapter 60, or where required by the AHJ.

**10.10** Replace with the following:

**10.10 Open Flame, Candles, and Outdoor Fires.**

**10.10.1.1** Replace with the following:

**10.10.1.1** Fires for cooking and recreational purposes shall comply with the provisions of M.G.L. c. 48, § 13 and the rules and regulations of the State Forester and regulations of the Department of Environmental Protection.

**10.10.1.2** through **10.10.1.4** Delete.

**10.10.3.1\*** Replace with the following:

**10.10.3.1** Outdoor fires shall comply with the provisions of M.G.L. c. 48, § 13 and the rules and regulations of the State Forester, and regulations of the Department of Environmental Protection. *See* 310 CMR 7.07: *U Open Burning*.

**10.10.3.2** Delete.

**10.10.4.1** Delete.

**10.10.4.1.1** Add:

**10.10.4.1.1 Bonfires and the Burning of Christmas Trees.** Permits where required, for bonfires and the burning of Christmas trees shall comply with Section 1.12.

**10.10.4.1.1.1** Add:

**10.10.4.1.1.1 Ceremonial Bonfires.** The city council of a city with the approval of its mayor, or the board of selectmen or town council of a town, may authorize the fire department of such city or town to issue not more than one permit in any one year for a ceremonial bonfire. Such bonfires shall mark the observance of a significant municipal, state or national event, and such ceremonial bonfire shall be under the continuous supervision of the fire department. Only wood which has not been painted, impregnated, or otherwise treated with any foreign substance shall be permitted to burn in ceremonial bonfires. No bonfire shall burn for more than 12 hours. (M.G.L. c. 111, § 142H.)

**10.10.4.1.1.2** Add:

**10.10.4.1.1.2 Bonfires from July 2<sup>nd</sup> to July 6<sup>th</sup>.** Any civic, fraternal, veteran, community or business organization may build and ignite bonfires under the supervision and control of the fire department of the city or town in which such burning takes place during the period from July 2<sup>nd</sup> through July 6<sup>th</sup>. (M.G.L. c. 111, § 142I.)

**10.10.4.1.1.3** Add:

**10.10.4.1.1.3 Burning of Christmas Trees.** Any person may burn Christmas trees during the period from December 26<sup>th</sup> through January 7<sup>th</sup>, provided that such burning is under the supervision and control of the fire department. (M.G.L. c. 111, § 142G.)

**10.10.4.1.1.4** Add:

**10.10.4.1.1.4** Burning hours shall be prescribed by the AHJ.

**10.10.4.2** Delete.

**10.10.4.3** through **10.10.5.2** Delete.



1.05: continued

**10.10.6** Replace with the following:

**10.10.6 Appliances - Cooking.**

**10.10.6.1** through **10.10.6.2** Replace with the following:

**10.10.6.1 General.** Cooking appliances shall be kept clean during and cleaned after each use. Cooking appliances shall never be left unattended after the cooking appliance is kindled. Cooking appliances shall be stored only after the appliance is cleaned; the appliance is cool to the human touch and; the fuel is disconnected and removed from the appliance. Cooking appliances shall not be altered, used, kindled, placed, or stored in a manner that is not established by the manufacturer's instructions of the appliance and its equipment.

**10.10.6.2 Terms.** As used in Chapter 10, the enclosed terms shall have the following meaning assigned to them.

- (1) **Appliance (cooking).** Utilization equipment, generally other than industrial, that is normally built in standardized sizes or types and is used, installed or connected as a unit to perform one or more functions such as grills, ranges, cook top units, wall ovens, and chimineas or similar such appliances.
- (2) **Balcony.** A structure attached to a building with no exterior stairs other than through the attached building.
- (3) **Deck (including porches, and patios).** A structure attached to a building where constructed above grade has exterior stairs extending to grade.
- (4) **Equipment (cooking).** The component of an appliance, such as the hose, burner, heating element, electronic controls, igniters, heat exchanger, container or regulator that is designed specifically for the purpose and constructed with approved safety standards and tested by a recognized product testing agency. *See* Chapter 3, for the term Listed in Section 3.2.6\*.
- (5) **Grade (as it applies to balconies and decks).** On earth; or on blocks, slab or of other approved material placed on earth and elevated not greater than 30 inches from earth.
- (6) **Permanent.** Fastened in place, and cannot be easily moved without requiring the disconnection of fasteners, piping, and fittings.
- (7) **Solid Fuel.** Includes wood, charcoal, pellet fuels, and any other non-gaseous fuel but not including fuel generation or co-generation of electric energy.

**10.10.6.3** Add:

**10.10.6.3 Solid Fuel, Gaseous Fuel, and Electric Cooking and Heating Appliances Use and Storage on Balconies and Decks or under Overhangs and Structures.**

**10.10.6.3.1** through **10.10.6.3.7** Add:

**10.10.6.3.1** All cooking and heating appliances shall be permitted to be used, kindled, or stored on a balcony or deck unless specifically prohibited or restricted below.

**10.10.6.3.2** No solid fuel cooking and heating appliances shall be permitted to be used, kindled, or stored on any balcony.

**10.10.6.3.3** No gaseous fuel cooking and heating appliances shall be used, kindled, or stored on any balcony located above grade, unless permitted to be permanently installed pursuant to its equipment listings.

**10.10.6.3.4** No cooking or heating appliances shall be used, installed, kindled or stored on any fire escape balcony.

**10.10.6.3.5** No cooking or heating appliances shall be used, installed, kindled or stored on any balcony or deck where the balcony or deck is enclosed by a roof, walls, other than the wall of the attached building, or any covering that would prevent air circulation, unless a sprinkler system is installed in accordance with the *Building Code*, or such appliance is permitted by the manufacturer's instructions and equipment listings.

**10.10.6.3.6** No equipment of any cooking and heating appliances shall be permitted to be used or stored under any overhang; less than ten ft. (3 m) from a building; unless a sprinkler system is installed in accordance with the *Building Code*; or it is permitted by the manufacturer's instructions and equipment listings. The storage of any cooking or heating appliances under the overhang or ten ft. (3 m) from a building shall be permitted only when its fuel is not present within or near any cooking or heating appliance, unless such appliance is permanently installed.

**10.10.6.3.7** All appliances that are permanently installed shall be approved by the specialized code official.

1.05: continued

- 10.10.6.4** Add:  
**10.10.6.4 LP-gas Containers (cylinders) 1-lb or Greater, Use, Placement at Dwellings.**
- 10.10.6.4.1** through **10.10.6.4.4** Add:  
**10.10.6.4.1** Containers shall only be transported using exterior means independent from the attached building.
- 10.10.6.4.2** Containers shall not be placed inside or pass through any building.
- 10.10.6.4.3** Containers shall not be stored or obstruct ingress or egress of any building.
- 10.10.6.4.4** Containers having water capacities greater than 2.7 lb (1 kg) [nominal one lb (0.5 kg) LP-Gas capacity] shall not be located on decks or balconies of dwellings of two or more living units above the first floor, unless the deck or balcony is served by exterior stairways.
- 10.10.6** Add:  
**10.10.6** Table 10.10.6 shall be permitted to be used as guidance for the Sections 10.10.6.3.1 through 10.10.6.4.

**Table 10.10.6 Appliances Cooking/Heating**

Balcony. <i>See</i> 10.10.6.2(2)				Deck, Porch, Patio. <i>See</i> 10.10.6.2(3)		
*NOT Permitted under overhangs, roofs or enclosed in by walls or within 10’ of a building <sup>1</sup> ; unless sprinklered pursuant to the Building Code.						
Fuel	Gaseous Fuels	Solid Fuels	Electric	Gaseous Fuels	Solid Fuels	Electric
Type of Appliance	Cooking and Heating Appliance	Cooking and Heating Appliance	Cooking and Heating Appliances	Cooking and Heating Appliances	Cooking and Heating Appliance	Cooking and Heating Appliances
Grade	Permitted*  <i>See</i> 10.1.7; 10.10.6.3.4 and 10.10.6.4	Not Permitted <i>See</i> 10.10.6.3.2	Permitted <i>See</i> 10.1.7 and 10.10.6.3.1	Permitted*  <i>See</i> 10.1.7; 10.10.6.3.5 and 10.10.6.3.6	Permitted*  <i>See</i> 10.1.7; 10.10.6.3.5 and 10.10.6.3.6	<i>See</i> 10.1.7; and 10.10.6.3.1
Above Grade	Not Permitted, unless permanently installed* <i>See</i> 10.1.7; 10.10.6.3.3; 10.10.6.3.5 and 10.10.6.4					

Note 1. For the purposes of this section, a structure or building is not considered the decking of a balcony, or deck.

- 10.10.8** through **10.10.8.3** Delete.
- 10.10.9.1\*** Replace as follows:  
**10.10.9.1** Welding torches, tar pots, and other devices, machines, or processes liable to start or cause fire shall not be operated or used in or upon any areas, except by permit from the AHJ.
- 10.11.1.3** Delete.
- 10.11.3.1** Replace with the following:  
**10.11.3.1** Enclosed stairs serving three or more stories and existing enclosed stairs serving five or more stories shall be maintained in accordance with the *Building Code* approved at the time of construction and maintenance.
- 10.11.3.1.1** through **10.11.3.1.16** Delete.
- 10.11.3.2** through **10.11.3.2.2** Delete.
- 10.11.3.3** Replace with the following:  
**10.11.3.3 Stairway Tread Marking.** Where new contrasting marking is applied to stairs, such marking shall be maintained in accordance with the provisions of the *Building Code* in effect at the time of construction and maintenance.

1.05: continued

**10.11.3.3\*(1) through (4)** Delete.

**10.11.3.4** Delete.

**10.11.4** Add:

**10.11.4 Inner Courts Specialized Construction.**

**10.11.4.1 through 10.11.4.3** Add:

**10.11.4.1** Any inner court not protected by a roof shall have a parapet or guard at least 42 inches high.

**10.11.4.2** Where a roof is provided over an inner court it shall be constructed as prescribed by the *Building Code*.

**10.11.4.3** Where a skylight is provided it shall support a minimum of 40 lbs. per square foot, or shall have a parapet or guard at least 42 inches high.

**10.12** Replace with the following:

**10.12 Vacant Buildings and Premises.**

**10.12.1** Replace with the following:

**10.12.1** Every person owning or having charge or control of any vacant building, premises, or portion thereof shall remove all combustible storage, waste, refuse, and vegetation and shall lock, barricade, or otherwise secure the building or premises to prohibit entry by unauthorized persons pursuant to M.G.L. c. 143, §§ 6 through 14 and the *Building Code*.

**10.12.1.1** Delete.

**10.12.2 through 10.12.2.2** Replace with the following:

**10.12.2** All fire protection systems shall be maintained in service in vacant buildings.

**10.12.2.1** With the approval of the AHJ, fire protection and fire alarm systems in vacant buildings shall be permitted to be removed from service as provided in M.G.L. c. 148, § 27A.

**10.12.2.2** When required by the AHJ, other systems or components pertaining to fire protection shall be maintained as provided in M.G.L. c. 148, § 27A.

**10.12.4 through 10.12.4.9** Add:

**10.12.4** Any owner of a building who has been notified that said building shall be made safe or secure under the provisions of the *Building Code*, shall:

(1) Remove all materials determined by the Head of the Fire Department or Building Official to be dangerous in case of fire.

(2) Secure all floors accessible from grade utilizing one of the following methods so long as such method is approved by the Head of the Fire Department and Building Official in writing:

(a) Secure all window and door openings in accordance with the U.S. Fire Administration, Arson Prevention Initiative Board-up Procedures continuously until such time as the building is reoccupied; or

(b) Provide 24-hour watchman services, continuously until such time as the building is reoccupied; or

(c) Provide a monitored intruder alarm system at the perimeter of all floors accessible from grade, continuously until such time as the building is reoccupied.

**10.12.4.1** Said owner, as the case may be, shall notify the Building Official that the approved method chosen to secure the building has been incorporated.

**10.12.4.2** Said owner shall allow the Building Official to enter the building for an inspection to ascertain that the building is secured and made safe. Said owner shall allow the Head of the Fire Department to enter the building.

**10.12.4.3** The Building Official shall be supplied with records of maintenance and operation if the provisions of Section 10.12.4(2)(b) or (c) are used as provided in the *Building Code*.

**10.12.4.4** The owner shall maintain any existing fire alarms or sprinkler systems, unless written permission is obtained from the Head of the Fire Department in accordance with M.G.L. c. 148, § 27A to shut off or disconnect said alarms or systems.

## 1.05: continued

**10.12.4.5** The owner shall maintain utilities, unless written permission is obtained from the Building Official to disconnect said utilities. Permission to disconnect utilities shall not be granted if it will result in inadequate heat to prevent freezing of an automatic sprinkler system or inadequate utilities to maintain any other protection systems.

**10.12.4.6** The requirements of Section 10.12.4 do not prevent a Building Official from ordering or taking expeditious, temporary security measures in emergency situations pending the completion of the requirements of Section 10.12.4.

**10.12.4.7** For the purposes of Section 10.12.4.6, an “emergency situation” shall be defined as: an unexpected incident, which by its very nature may present a threat to public safety personnel who may be required to affect a rescue effort or conduct fire extinguishment operations.

**10.12.4.8** Upon refusal or neglect of said owner to comply with such notice, any Building Official acting under the authority of the *Building Code*, shall cause to be secured all window and door openings accessible from grade in accordance with the U.S. Fire Administration, Arson Prevention Initiative Board-up Procedures or other equivalent procedure approved by the Head of the Fire Department, continuously until such time as the building is reoccupied.

**10.12.4.9** Any building which has been made to conform to the provisions of Section 10.12.4 during vacancy may be reoccupied under its last permitted use and occupancy classification, provided that any systems which were disconnected or shut down during the period of vacancy are restored to fully functional condition and subject to the *Building Code* and M.G.L. c. 40A. The Building Official shall be notified in writing prior to reoccupancy. If said building is changed in use or occupancy or otherwise renovated or altered it shall be subject to the applicable provisions of the *Building Code*.

**10.12.5** through **10.12.5.5** Add:

**10.12.5** Any building determined to be especially unsafe in case of fire, under the provisions of the *Building Code* shall be identified and caused to be marked by the Building Official, with the cooperation of the Head of the Fire Department, to indicate the degree of hazard.

**10.12.5.1** In marking such buildings, the following symbols shall be used:

☐ This symbol shall mean that interior hazards exist to such a degree that interior operations shall be conducted with extreme caution. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.

☒ This symbol shall mean that exterior or interior hazards exist to such a degree that consideration should be given to conduct operations from the exterior only. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.

**10.12.5.2** Markings shall be applied on the front of the building at or above the second floor level, where practical, between openings such that they are visible from the street. Markings may be applied to the sides or the rear of a building if the Head of the Fire Department deems such placement necessary. Markings shall also be applied in a conspicuous place near every entrance, and on penthouses. Markings shall not be applied over doors, windows, or other openings where they may be obscured by smoke or fire.

**10.12.5.3** Markings shall be a minimum of 24 inches by 24 inches. Markings shall either be on a placard with a reflective background or painted with a reflective paint of contrasting color directly on the surface of the building. Stripes and borders outside of the marking shall be a minimum of two inches wide.

**10.12.5.4** All markings shall bear a date as to when applied or the date of the most recent inspection.

**10.12.5.5** Prior to receiving a mark, all buildings shall be inspected thoroughly by the Head of the Fire Department.

1.05: continued

**Table 10.13.1.1** Replace with the following:

**Table 10.13.1.1 Provisions for Christmas Trees by Occupancy**

Occupancy	No Tree Permitted	Cut Trees Permitted Sprinkler System Required	Cut Trees Permitted W/O Sprinkler System	Balled Tree Permitted
Ambulatory health care	X			
Apartment Buildings		X Within the unit	X Within the unit	X Within the unit
Assembly	X			
Board and care	X			
Business		X		X With Automatic Sprinklers
Daycare	X			
Detention and correctional	X			
Dormitories	X			
Educational	X			
Health care	X			
Hotels	X			
Industrial		X		X With Automatic Sprinklers
Lodging and rooming				X
Mercantile		X		X With Automatic Sprinklers

**10.13.10.4** Add:

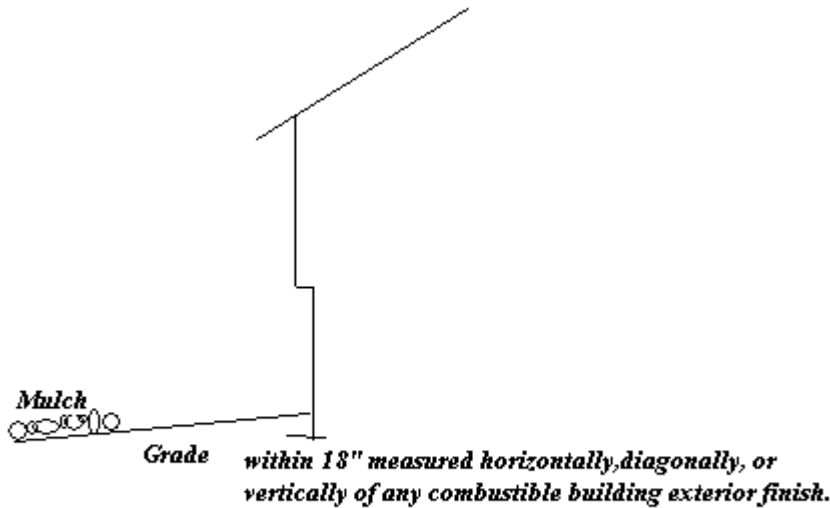
**10.13.10.4 The Use of Mulch.**

**10.13.10.4.1** through **10.13.10.4.2** Add:

**10.13.10.4.1** Mulch shall not be newly applied within 18 inches of any combustible portion of any building[See Figure 10.13.10.4.1(a)].

*Exception: Any building, regardless of the existence of fire separations, containing six dwelling units or less.*

**Figure 10.12.10.4.1(a)**



**10.13.10.4.2** Mulch, as used here, shall mean any type of forest material that is produced for the purpose spreading or application over the surface of the soil as a protective cover, to retain moisture, reduce erosion, provide nutrients, and suppress weed growth, seed germination and for general landscaping purposes.



1.05: continued

**10.14** Replace with the following:

**10.14 Outdoor Events, Carnivals, and Fairs.**

**10.14.1** Delete.

**10.14.4** Delete.

**10.14.6** Replace with the following:

**10.14.6 Smoke and Carbon Monoxide Detection.** A minimum of one single station smoke alarm and CO detector shall be located within each sleeping area in all stock or equipment trailers when they are used for sleeping purposes.

**10.14.11.1** Delete.

**10.15** Replace with the following:

**10.15 Storage.**

**10.15.1.1** Add:

**10.15.1.1** A person shall not store in any building or upon any premises more than 2,500 cubic feet gross volume of combustible empty packing cases, boxes, barrels or similar containers; or rubber tires, baled cotton, rubber, cork or other similarly combustible material without having obtained a permit from the Head of the Fire Department.

**10.15.1.2** Add:

**10.15.1.2 Permit.** Permits, where required, shall comply with Section 1.12.

**10.15.2** Replace with the following:

**10.15.2** The storage of combustible or flammable material shall be confined to approved storage areas.

**10.15.2.1** Add:

**10.15.2.1 Permits.** Permits, where required, shall comply with Section 1.12.

**10.15.3** Replace with the following:

**10.15.3 Inside Storage.** Storage in buildings and structures shall be orderly, shall not be within two feet of the ceiling, and shall be located so as not to obstruct egress from the building.

**10.15.4** Replace with the following:

**10.15.4 Outside Storage.** The outside storage of combustible or flammable materials shall not be more than 20 feet in height and shall be compact and orderly. Such storage shall be located as not to constitute a hazard and no less than 25 feet from any other building on the site or from a lot line.

**10.16** through **10.16.2** Delete.

**10.18.6** Replace with the following:

**10.18.6 Attic, Under-floor, and Concealed Spaces.** Attic, under-floor, and concealed spaces used for storage of combustible materials shall comply with the protection from hazards requirements for storage rooms in the *Building Code*.

**10.19** through **10.19.1.4** Delete.

**10.20** Add:

**10.20 Fumigation and Thermal Insecticidal Fogging.** Any substance which by itself or in combination with any other substance emits or liberates a gas, fume or vapor used for the destruction or control of insects, fungi, vermin, germs, rats or other pests.

**10.20.1** Add:

**10.20.1 Permit.** Permits, where required, shall comply with Section 1.12.

**10.20.2** Add:

**10.20.2 Fumigating Operations.** Any building being so fumigated requiring a permit shall post at all entrances a warning sign of the fumigant hazard as described in Section 10.20.3.5.



1.05: continued

**10.20.3** Add:

**10.20.3 Fire Safety Requirements.**

**10.20.3.1 General.** Any person conducting fumigation and thermal insecticidal fogging in any building, ship, vessel or enclosed space shall comply with the following fire protection and safety requirements.

**10.20.3.2** Add:

**10.20.3.2 Sources of Ignition.** All fires, open flames and similar sources of ignition shall be eliminated from the space under fumigation or thermal insecticidal fogging.

**10.20.3.3** Add:

**10.20.3.3 Electricity.** Electricity shall be shut off, except that circulating fans that are to be used shall be designed and installed so as not to create an ignition hazard. Electrical equipment shall be designed and installed in accordance with *Massachusetts Electrical Code*.

**10.20.3.4.** Add:

**10.20.3.4 Notification.** The Head of the Fire Department shall be notified in writing at least 24 hours before any building or structure is to be closed in connection with the use of any toxic or flammable fumigant. Such notification shall give the location of the building, structure, ship or enclosed space to be fumigated or fogged as well as its character and use, the fumigants or insecticides to be used, the person or persons in charge of the operation and the date and time when fumigation or fogging will be started. Notice of any fumigation or thermal insecticidal fogging shall be served with sufficient advance notice to the occupants of any building or other enclosed space involved in the operation to enable them to evacuate the premises.

**10.20.3.5** Add:

**10.20.3.5 Warning Signs.** Suitable warning signs indicating the danger, type of chemical involved and recommended precautions, shall be posted on all doors and entrances to the premises and upon all gangplanks and ladders from the deck, pier or land to the ship. Such notice is to be printed in red ink on white background. Letters in the signs are to be at least two inches in height and shall state the date and time of the operation, the name of the operator in charge, together with a warning to the effect that the premises so occupied shall be vacated at least one hour before the operation is started and shall not be reentered until the danger signs have been removed by the proper authorities.

**10.20.3.6** Add:

**10.20.3.6 Watchman.** During the period fumigation is in progress, except when fumigation is conducted in a gastight vault or tank, a capable, alert watchman or watchmen shall remain on duty at the entrance or entrances to the building, ship or enclosed space fumigated until after the fumigation is completed and until the premises are properly ventilated and again safe for human occupancy. Sufficient watchmen shall be provided to prevent any person from entering the building, ship or enclosed space under fumigation without being observed.

**10.20.3.7** Add:

**10.20.3.7 Thermal Insecticidal Fogging Liquids.** Thermal insecticidal fogging liquids with a flash point below 100°F (38°C) shall not be used.

**10.20.3.8** Add:

**10.20.3.8 Fire Protection Systems.** Fire Protection system devices shall be adequately protected by covering or other means to isolate insecticidal fogging liquids from rendering a fire system device inoperable. (M.G.L. c. 148, § 27A)

**10.21** Add:

**10.21 Canine Guards.**

**10.21.1** Add:

**10.21.1 Permit.** Permits, where required, shall comply with Section 1.12.

1.05: continued

**10.21.2 Add:**

**10.21.2** Any person having control of a mercantile, commercial or industrial establishment wherein canine guards are maintained, shall notify the Head of the Fire Department of the district, city or town within which such establishment is located, per M.G.L. c. 148, § 28B, that such canine guard is maintained therein. The Head of the Fire Department and the person giving such notification shall cooperate in determining the procedure to be taken for the safety of authorized persons entering such mercantile, commercial or industrial establishment.

**10.22 Add:**

**10.22 Use and Storage of Alcohol Based Hand Rub Preparations.**

**10.22.1 Add:**

**10.22.1** The use of wall-mounted or free-standing units used to dispense an alcohol based hand rub preparation shall comply with the following requirements:

- (1) The maximum capacity of each dispenser shall be 41 ounces; and
- (2) The minimum separation distance between dispensers shall be 48 inches.

**10.22.2 Add:**

**10.22.2** No alcohol based hand rub preparation dispenser shall be located directly over or adjacent to any ignition source such as, but not necessarily limited to, electrical outlets, light fixtures or electrical appliances or any open flame device.

**10.23 through 10.23.4.3.1 Add:**

**10.23 Emergency Wash Stations.**

**10.23.1** Every school, college and university laboratory newly constructed or renovated, or any room used for similar purposes wherein corrosives or flammable liquids are handled or where open flame devices are used, shall be equipped with one or more Emergency Wash Systems.

**10.23.2** Emergency Wash Systems shall include Drench/Deluge Showers, Hand Held Body/Face Washers and Deck Mounted Drench Hoses. The permanently mounted showers shall be located as close to the main door of the laboratory as possible (to provide an escape route), but shall not be located greater than 50 feet from an experimental area.

**10.23.3** The Drench/Deluge Showers, Hand Held Body/Face Washers and Deck Mounted Drench Hoses shall be installed in accordance with ANSI Z-358.1, and 248 CMR: *Board of State Examiners of Plumbers and Gas Fitters*. Each existing laboratory not equipped with an Emergency Wash System shall be equipped with at least one approved Fire Blanket, and a sign that reads:

"In Case of Clothing Fire  
STOP, DROP and ROLL"

**10.23.4** The location of the Emergency Wash System Stations and Fire Blankets shall be clearly indicated by signs of contrasting color, either RED and WHITE or GREEN and WHITE. The signs shall be at least 70 square inches in area bearing the words "EMERGENCY WASH STATION", or "SAFETY SHOWER" or "FIRE BLANKET".

**10.23.4.1** Every wash station shall be tested by the owner of the building or his or her designee twice annually (every six months) for proper flow and operation. The owner shall, upon request, provide the fire department with the test result (including, but not limited to): date of test, station operation, system malfunctions, and the name of the person performing the test.

**10.23.4.2** Each student shall be advised of the location and proper use of the above emergency safety equipment by the teacher, instructor, or person in charge of the class before the first experiment is conducted.

**10.23.4.3** Each student shall also be instructed in the proper procedure for the extinguishment of clothing fires at least twice during the course, as directed by the Head of the Fire Department.

**10.23.4.3.1** The installation and operation of each safety device noted above shall be in order before the commencement of any class conducting laboratory experiments.

1.05: continued

**10.24** Add:

**10.24 Maintenance, Inspection, and Testing.**

**10.24.1** through **10.24.2** Add:

**10.24.1** Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this *Code*, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with this *Code*, the *Building Code* and applicable NFPA requirements, or requirements developed as part of a performance-based design.

**10.24.2** No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [101:4.6.12.2]

**10.24.3** through **10.24.4** Add:

**10.24.3** Existing life safety features obvious to the public, if not required by this *Code*, shall be either maintained or removed as provided in M.G.L. c. 148, § 27A.

**10.24.4** Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this *Code* and the *Building Code*.

## Chapter 11 Building Services.

**11.1** through **11.1.2.3** Delete.

**11.1.6** through **11.1.6.3.4** Delete.

**11.1.7.3** through **11.1.7.3.1** Delete.

**11.2** through **11.2.2** Delete.

**11.3** through **11.3.6.3.1.7** Delete.

**11.3.7** through **11.3.7(3)** Delete.

**11.5.1\* General.**

**A.11.5.1** All fuel oil burners and all equipment in connection therewith shall be installed and maintained in accordance with the manufacturer's installation and operation manual. Chimneys, connectors, direct vent systems and power-venters shall also be installed in accordance with the *Building Code*.

**11.5.1.1.1** Add:

**11.5.1.1.1 Terms.** As used in Chapter 11, the enclosed terms shall have the following meaning assigned to them.

**11.5.1.1.1.1** through **11.5.1.1.3.1** Add:

**11.5.1.1.1.1 Gravity Feed Burner.** A burner which receives its fuel oil supply by static head pressure due to elevation of the supply source.

**11.5.1.1.1.2 Post Purge Control.** An electrical control that is designed to allow the power-venter or burner to operate after the burner flame has shut off, thus purging the vent system and heating appliance of combustion gases.

**11.5.1.1.2** This Section shall not apply to fuel oil burners installed in steam boilers of nine horsepower and over and operated above 15 psi, but shall apply to the fuel oil storage.

**11.5.1.1.3 Unsafe Heating Appliances.** The Head of the Fire Department shall order the sealing (preventing the use) of any existing stove, oven, furnace, incinerator, boiler or any other heat producing device or appliance found to be defective or in violation of code requirements for existing appliances after giving 24 hours notice to this effect to any person, owner, firm, agent or operator in charge of same. However, the Head of the Fire Department shall seal any device or appliance without notice when inspection shows the existence of an immediate fire hazard or when imperiling human life. The sealed defective appliance shall remain withdrawn from service until all necessary repairs or alterations have been made.

1.05: continued

**11.5.1.1.3.1 Unauthorized Seal Removal.** No person or user, firm or agent shall continue the use of any device or appliance which has been sealed or ordered sealed, unless written authority to remove said seal is given by the Head of the Fire Department.

**11.5.1.10.5 through 11.5.1.10.10.5 Add:**

**11.5.1.10.5 General Requirements.**

(1) **Installation.** All fuel oil burners and all equipment in connection therewith shall be installed and maintained in accordance with the manufacturer's installation and operation manual. Chimneys, connectors, direct vent systems and power-venters shall also be installed in accordance with the *Building Code*.

(a) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by this *Code* to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141.

(b) Any person licensed as an electrician under M.G.L. c. 141 may do any electrical work in connection with the alteration, repair, or installation of oil burning equipment without being certified as an oil burner technician.

(2) **Automatic Shut Off.** An approved automatic means to prevent abnormal discharge of fuel oil shall be provided for any fuel oil burner for which a competent attendant will not be constantly on duty in the room where the burner is located.

(3) **Exposure to Fire.** If any oil tank, oil burner, oil burner control or wiring related to an oil burner has been exposed to fire and is suspected of being damaged, the entire installation shall be made inoperative by the Head of the Fire Department who shall so notify the owner or occupant of the building or structure. Said installation shall not be operated until approved by the Head of the Fire Department.

(4) **Tank Removal.** Unless otherwise provided for in Chapter 66, a permit shall be obtained, in accordance with Section 1.12.8.2, from the Head of the Fire Department for the removal of a fuel oil storage tank. Any person removing a fuel oil storage tank from inside a building for a purpose other than replacement or repair, shall remove all fill and vent pipes.

(5) **Fuel Oil.** The grade of fuel oil used for any fuel oil burner shall be one which tests and experience have been shown to be suitable for use with that burner, but in no case shall the grade of fuel oil be heavier than that for which the burner has been designed or adjusted.

(6) **Gravity Feed to Burners.** Gravity feed shall be used only with a burner arranged to prevent abnormal discharge of oil at the burner by automatic means specifically approved for the burner in which it is used.

(7) **Fuel Oil Delivery.** Fuel oil shall not be delivered to any storage tank, unless the deliverer has knowledge that a permit has been obtained in accordance with Section 1.12.8.2. Fuel oil shall not be delivered to a storage tank by means of a pump or under pressure in any case where a tight connection is made between the discharge line and the tank inlet, unless such storage tank is designed to withstand the additional stress to which it may be subjected or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undue pressure in excess of five psi. The delivery truck operator shall remain at the fill point during the entire operation.

(8) Fuel oil equal to the maximum capacity of the storage tank may be delivered without such a permit being in effect whenever an oil burner installation is first made, provided that an application has been made in accordance with Section 1.12.8.2.

(9) **Connection.** Cross connection of oil supply and return lines to two or more supply tanks to the same burner shall be acceptable and shall be made by a pipe no smaller than ½ inch iron pipe or ½ inch O.D. tubing.

(10) Two supply tanks may be provided with a single fill and a single vent provided:

(a) The fill and vent pipes are not connected to the same tank;

(b) The crossover pipe is a minimum two inch diameter with swing joints and a ground joint union; and

(c) The vent to the outside is a minimum two-inch diameter.

(11) Tanks shall be mounted on a continuous concrete slab extending eight inches beyond the perimeter of the tank or tanks.

**11.5.1.10.5.1 Permit.** Permits, where required, shall comply with Section 1.12.

## 1.05: continued

**11.5.1.10.6 Unenclosed Tanks: Installation Inside Buildings.** When tanks are installed inside garages or other areas subject to vehicular impact, physical barriers shall be provided. The physical barrier shall consist of substantial pipes, or similar barriers.

**11.5.1.10.7 Tanks Installations Outside of Buildings.**

- (1) Tanks installed outside of buildings shall be mounted on a continuous concrete slab at least four inches in thickness and extending eight inches beyond the perimeter of the tank or tanks.
- (2) Tanks installed outside of buildings shall be securely supported by rigid noncombustible supports to prevent settling, sliding or lifting.

**11.5.1.10.8 Fill and Vent Piping.**

- (1) Vent pipes shall terminate outside of buildings at a point not less than two feet (0.6 m) measured vertically or horizontally from any building opening.
- (2) Outer ends of vent pipes shall terminate in a weatherproof vent cap or fitting or be provided with a weatherproof hood. All vent caps shall have a minimum free open area equal to the cross sectional area of the vent pipe and shall not employ screens finer than four mesh. Vent pipes shall terminate at least three feet from grade to avoid being obstructed with snow and ice. Vent pipes from tanks containing heaters shall be extended to a location where oil vapors discharging from the vent will be readily diffused. If the static head with a vent pipe filled with oil exceeds ten psi (70 kPa), the tank shall be designed to withstand the maximum static head which will be imposed.
- (3) A fixed sash window shall not be considered an opening for the purpose of this Section.

**11.5.1.10.9 Oil Gauging.** All storage tanks in which a constant level of oil is not maintained by an automatic pump shall be equipped with a method of determining oil level. On cross connected tanks provided with a single fill and single vent, the gauge shall be installed on the tank vented to the outside.

**11.5.1.10.10 Oil Burners, Light Fuel Oil Type.**

**11.5.1.10.10.1 Oil Supply and Return Lines.**

- (1) All threaded joints and connections shall be made tight with suitable lubricant or pipe compound. Teflon tape shall not be used. Unions requiring gaskets or packings, right or left couplings, and sweat fittings employing solder having a melting point of less than 500<sup>N</sup>F (260<sup>N</sup>C) shall not be used in oil lines. Compression type fittings shall not be used.

*Exception: Mechanical connections on tubing of the flare type or gaugeable, two ferrule, swage type fittings are acceptable.*

- (2) Oil supply lines shall be rigidly secured in place and protected from injury and shall be protected against corrosion. All new oil supply lines in direct contact with concrete or earth shall be enclosed with a continuous nonmetallic sleeve that extends out of the concrete or earth a minimum of four inches on each end. Perimeter lines may be placed in an outer protective covering, in addition to the continuous nonmetallic sleeve, when subject to physical damage.
- (3) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by this Code to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141.
- (4) Any person licensed as an electrician under M.G.L. c. 141 may do any electrical work in connection with the alteration, repair or installation of oil burning equipment without being certified as an oil burner technician.
- (5) On existing installations, whenever a burner, boiler, furnace or tank is replaced, the oil supply line shall either be replaced or enclosed with a continuous sleeve as for new installations or a listed oil safety valve shall be installed at the tank end of the oil supply line in accordance with the manufacturer's instructions.
- (6) An oil safety valve and continuous nonmetallic sleeve is not required when:
  - (a) The oil supply and return lines are not in direct contact with concrete, earth or any floor surface.
  - (b) When the burner is located above the oil supply tank and the entire oil supply line is connected to, and above the top of the tank.



## 1.05: continued

(7) Every owner of a residential property defined as a one- to four-dwelling unit used for living or sleeping (M.G.L. c. 148, § 38J) with oil supply and return lines not enclosed with a continuous nonmetallic sleeve or equipped with a listed oil safety valve, shall either replace the line and enclose it with a continuous sleeve as for new installations or shall have a listed oil safety valve installed at the tank end of the supply line in accordance with the manufacturer's instructions.

(8) Nothing in this *Code* shall prohibit overhead installation of oil supply and return lines or cross connection of oil supply lines from multipletanks.

(9) Oil supply lines and return lines to tanks exposed to freezing temperatures shall be connected to the top of the tank. This shall not apply to gravity feed oil burners using #1 fuel oil, range oil or kerosene.

(10) Oil supply lines shall be properly reamed and joints and connections shall be made oil tight.

**11.5.1.10.10.2 Oil Pumps and Valves.** Only readily accessible hand operated, fusible, spring loaded valves of an approved automatic type shall be installed in the oil supply line, one near each burner and one close to each supply tank so as to automatically stop the flow of oil in case of fire. Manual opening and ball spring check valves shall not be permitted.

**11.5.1.10.10.3 Oil Burner Controls.**

(1) Each fully automatic oil burner having a firing rate of no more than 20 gallons per hour shall be equipped with a type of approved primary safety control which shall shut off the oil supply to the burner within 15 seconds if ignition is not established or in the event of flame failure after combustion has been established. Once combustion is established and in the event of flame failure, the oil supply shall be shut off to the burner within three seconds nominal unless the ignition is reenergized in not less than 0.8 seconds after flame extinguishment occurs. The installation of intermittent (formerly called constant) ignition primary safetycontrols shall not be permitted.

(2) Each automatically fired hot water heating boiler with heat input greater than 500,000 Btu per hour shall have a listed automatic low water fuel cutoff which has been designed for hot water service, so located as to automatically cut off the fuel supply when the surface of the water falls to the lowest safe permissible water level established by the boiler manufacturer.

**11.5.1.10.10.4 Certificate and License Requirements for Repair or Replacement of Oil Burner Equipment.** In accordance with M.G.L. c. 148, § 10D, a person holding a certificate as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by rules and regulations of the board to be a part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141. Any person licensed as an electrician under said M.G.L. c. 141 may do any electrical work in connection with the alteration, repair or installation of oil burning equipment without being certified as an oil burnertechician.

(1) Oil burners electrically controlled, driven and/or operated shall be supplied from a separate branch circuit located at the service disconnect panel, or at branch circuit subpanel. This circuit shall be clearly marked for the equipment it controls.

(2) All protective, control and emergency devices shall be series connected from the electrical distribution panel, through the emergency switch, through the thermal switch, to the service switch in the ungrounded line conductors. The burner controls shall be installed in the ungrounded supply conductors of the circuit and shall not exceed 150 volts to ground.

(3) A control (service switch) to start and stop a light fuel oil burner shall be installed at a location where the operator can view the fire. The switch shall be located at a maximum of three feet from the burner.

(4) An electrical thermal switch fused to break the ungrounded conductor in the main circuit at 165EF, shall be installed in the main power line within six feet over the top of the burner boiler or burner furnace.

(5) If the ceiling above the burner boiler or burner furnace exceeds 12 feet in height, an additional thermal switch shall be installed at a height of ten feet and connected in series with the lower switch.

(6) Electrical equipment shall not obstruct clear access to clean out and service panels.

1.05: continued

**11.5.1.10.10.5 Certificates.** Certificates, where required, shall comply with Section 1.12.8.51.

**11.5.1.11 through 11.5.1.11.2 Delete.**

**11.5.2.1** Replace with the following:

**11.5.2.1** The use of unvented kerosene burners and oil stoves is prohibited by M.G.L. c. 148, § 25B.

**11.5.2.2** Delete.

**11.5.2.3** Delete.

**11.5.3.1** Delete.

**11.5.4** Delete.

**11.6** Replace with the following:

**11.6 Rubbish, Laundry Chutes.**

**11.6.1.2** Replace with the following:

**11.6.1.2** Instruction describing the size and type of waste which may be deposited in the chute shall be posted at each service opening.

**11.6.2** Replace with the following:

**11.6.2 Installation and Maintenance.** Rubbish chutes and laundry chutes shall be installed and maintained in accordance with NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, unless such installations are approved existing installations, which shall be permitted to be continued in service.

**11.7.3.2** Delete.

**11.7.5.1.1 through 11.7.5.1.2.2 Add:**

**11.7.5.1.1** A fuel quality test shall be performed at least annually using tests approved by ASTM standards.

**11.7.5.1.2** Diesel fuel shall be tested in accordance with ASTM D 975-11b, *Standard Specification for Diesel Fuel Oils*, or ASTM D 6751-11b, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels*, as approved by the engine manufacturer, using ASTM D 7462-11, *Standard Test Method for Oxidation Stability of Biodiesel (B100) and Blends of Biodiesel with Middle Distillate Petroleum Fuel (Accelerated Method)*. [25:8.3.4.1.1]

**11.7.5.1.2.1** Where diesel fuel is found to be deficient in accordance with testing required in Section 11.7.5.1.2, the fuel shall be reconditioned or replaced, the supply tank shall be cleaned internally, and the engine fuel filter(s) shall be changed. [25:8.3.4.2]

**11.7.5.1.2.2** After the restoration of the fuel and tank in 11.7.5.1.2.1, the fuel shall be retested every six months until experience indicates the fuel can be stored for a minimum of one year without degradation beyond that allowed in Section 11.7.5.1.2. [25:8.3.4.2.1]

**11.8.6 through 11.8.9 Add:**

**11.8.6** Smoke control systems shall be maintained to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required. The system shall be maintained in accordance with the manufacturer's instructions and the *Building Code*.

**11.8.7** A routine maintenance and operational testing program shall be initiated immediately after the smoke control system has passed the acceptance tests. A written schedule for routine maintenance and operational testing shall be established.

**11.8.8** A written record of smoke control system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of servicing personnel, and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

**11.8.9** Dedicated smoke control systems shall be operated for each control sequence semiannually. The system shall also be tested under standby power conditions.

**11.9 through 11.9.6 Delete.**

1.05: continued

**11.10.1** Delete.

**11.10.2** Replace with the following:

**11.10.2** Two-way radio communication enhancement systems, when required, shall be maintained in accordance with Chapter 24 of NFPA 72: *National Fire Alarm and Signaling Code*.

**11.10.3** Delete.

**11.12.2** through **11.12.2.1.4** Delete.

**11.12.2.1.6\*** through **11.12.3.3\*** Delete.

## Chapter 12 Features of Fire Protection.

**12.1** Replace with the following:

**12.1 General.** This chapter shall apply to existing, permanent, or temporary buildings.

**12.2\*** through **12.2.2** Delete.

**12.3.1** through **12.3.2.2** Delete.

**12.3.3.1** Replace with the following:

**12.3.3.1** Required fire-resistive construction, including fire barriers, fire partition, fire walls, exterior walls due to location on property, fire-resistive requirements based on type of construction, draft-stop partitions, and roof coverings, shall be maintained as constructed or permitted under the *Building Code*.

**12.3.3.3** through **12.3.3.3.2** Delete.

**12.4.1** Replace with the following:

**12.4.1** The installation and maintenance of assemblies and devices used to protect openings in walls, floors, and ceilings against the spread of fire and smoke within, into, or out of buildings shall comply with Section 12.4 and NFPA 80, *Standard for Fire Doors and Other Opening Protectives* and with the *Building Code*.

**12.4.6.4** through **12.4.6.5** Delete.

**12.5.1** through **12.5.5.9** Delete.

**12.5.6.1** and **12.5.6.2** Delete.

**12.5.7\*** through **12.5.9.2** Delete.

**12.6.1** Delete.

**12.6.3** Replace with the following:

**12.6.3 Furniture and Mattresses.**

**12.6.3.1\*(3)** Add:

(3) The requirements of California Technical Bulletin 117-2013: *Requirements, Test Procedure and Apparatus for Testing the Smolder Resistance of Materials Used in Upholstered Furniture*.

**12.6.3.2.1\*** Replace with the following:

**12.6.3.3\*** Where required by the applicable provisions of this *Code*, upholstered furniture, unless the furniture is located in a building protected throughout by an approved automatic sprinkler system, shall have limited rates of heat release when tested in accordance with ASTM E 1537, *Standard Test Method for Fire Testing of Upholstered Furniture*, as follows:

(1) The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.

(2) The total heat released by the single upholstered furniture item during the first ten minutes of the test shall not exceed 25 MJ. [101:10.3.3]

1.05: continued

**12.6.3.2.2\*** Replace with the following:

**12.6.3.4\*** Where required by the applicable provisions of this *Code*, mattresses, unless the mattress is located in a building protected throughout by an approved automatic sprinkler system, shall have limited rates of heat release when tested in accordance with ASTM E 1590, *Standard Test Method for Fire Testing of Mattresses*, as follows:

- (1) The peak rate of heat release for the mattress shall not exceed 100 kW.
- (2) The total heat released by the mattress during the first ten minutes of the test shall not exceed 25 MJ. [101:10.3.4]

**12.6.3.5** Add:

**12.6.3.5** Seating shall not be purchased, leased or rented for use in a particular occupancy, unless labeled or identified by the manufacturer.

**12.6.3.5.1** through **12.6.3.5.1(3)** Add:

**12.6.3.5.1** The following shall be exempt:

- (1) Cushions and pads intended solely for outdoor use.
- (2) Any article which is smooth surfaced and contains no more than ½ inch of filling material, provided that such article does not have a horizontal surface meeting vertical surface.
- (3) Articles manufactured solely for recreational use or physical fitness purposes, such as weight lifting benches, gymnasium mats or pads, side horses and similar articles.

**12.6.3.6** Add:

**12.6.3.6** For spaces not protected by an approved sprinkler system, stackable molded plastic seating shall comply with ASTM E 1822: *Standard Test Method for Fire Testing of Stacked Chairs*, as modified. The test shall consist of a single chair, or prototypes thereof.

**12.6.3.7** Add:

**12.6.3.7 Labeled Furniture**

**12.6.3.7.1** through **12.6.3.7.1(2)** Add:

**12.6.3.7.1** The manufacturer shall affix a label to each article of regulated furniture that indicates:

- (1) The article of furniture is composed of materials that meet the performance test.
- (2) The nationally recognized testing laboratory and standards or publications as provided in this *Code*.

**12.6.3.7.2** Add:

**12.6.3.7.2** The label shall be stitched or adhered onto each piece of regulated furniture.

**12.6.3.8** Add:

**12.6.3.8 Documentation of Furniture.**

**12.6.3.8.1** Add:

**12.6.3.8.1** The building manager shall maintain documentation of furniture within the building.

**12.6.3.8.2** Add:

**12.6.3.8.2** The documentation shall be made available to the AHJ upon request.

**12.6.3.8.3** through **12.6.3.8.3(5)** Add:

**12.6.3.8.3** The documentation shall include:

- (1) The quantity and type of each article of furniture.
- (2) Certification that the furniture items meet the performance requirements.
- (3) The nationally recognized testing laboratory that conducted the tests.
- (4) Descriptions of the upholstery cover fabric for each type of furniture within the inventory area, if the furniture is upholstered. The description of the upholstery cover fabric shall be provided by the fabric company or the chair manufacturer, and shall include fiber content, fabric type, fabric company name, and either a photo of the fabric for identification, or an actual fabric swatch, clearly labeled, at minimum size two inches x two inches.
- (5) Fire retardant treatment maintenance and compliance documentation, if applicable.

**12.7.1** through **12.7.4.4** Delete.

1.05: continued

**12.7.5** Replace with the following:

**12.7.5 Penetrations.** The provisions of Section 12.7.5 shall govern the materials and methods of construction used to protect through-penetrations and membrane penetrations in fire walls, fire barrier walls, and fire resistance rated horizontal assemblies. The provisions of Section 12.7.5 shall not apply to approved existing materials and methods of construction used to protect existing through-penetrations and existing membrane penetrations in fire walls, fire barrier walls, or fire resistance rated horizontal assemblies, in accordance with the *Building Code*.

**12.7.5.1.1(4)** Delete.

**12.7.5.1.2** Replace with the following:

**12.7.5.1.2** The maximum nominal diameter of the penetrating item, shall not be greater than four inches. (100 mm) and shall not exceed an aggregate 100 in.<sup>2</sup> (64,520 mm<sup>2</sup>) opening in any 100 ft.<sup>2</sup> (9.3 m<sup>2</sup>) of floor or wall area. [101: 8.3.5.1.2]

**12.8.1\*** Replace with the following:

**12.8.1 General.** Where required elsewhere in this *Code*, smoke partitions shall be maintained to limit the transfer of smoke.

**12.8.2** through **12.8.2(3)** Delete.

**12.9** through **12.9.7.5** Delete.

## Chapter 13 Fire Protection Systems.

**13.1.1** Replace with the following:

**13.1.1** For alarms and systems regulated by this *Code* the AHJ shall have the authority to require that construction documents for all fire protection systems be submitted for review and approval and a permit be issued prior to the installation, rehabilitation, or modification in accordance with Section 1.14. Further, the AHJ shall have the authority to require that full acceptance tests of the systems be performed in the AHJ's presence prior to final system certification.

**13.1.1.1.2\*** No person shall shut off, disconnect, obstruct, remove, and/or impair a fire protection system or carbon monoxide protection system without first obtaining a written permit pursuant to Section 1.12 as required by the AHJ. [13.1.8 and 13.7.2.2]

**A.13.1.1.1.2** See M.G.L. c. 48, § 27A. Except as hereinafter provided, no person shall shut off, disconnect, obstruct, remove or destroy, or cause or permit to be shut off, disconnected, obstructed, removed or destroyed, any part of any sprinkler system, water main, hydrant or other device used for fire protection or carbon monoxide detection and alarm in any building owned, leased or occupied by such person or under his control or supervision, without first procuring a written permit so to do from the head of the fire department of the city or town wherein such building is situated, which permit such head is hereby authorized to issue subject to such terms and conditions as, in his judgment, protection against fire and the preservation of the public safety may require. This section shall not prevent the temporary shutting off or disconnection or partial removal of such a system, main, hydrant or other device for the purpose of making necessary repairs or preventing freezing or other property damage; provided, however, that the head of the fire department is notified immediately of such emergency action. The head of the fire department shall also be notified when the system, main, hydrant or other device is placed back in service. Violation of this section shall be punished by imprisonment for not more than one year or by a fine of not more than one thousand dollars, or both. The supreme judicial and superior courts shall have jurisdiction in equity to enforce compliance with the provisions of this section.

**13.1.8** Replace with the following:

**13.1.8** No person shall shut off, disconnect, obstruct, remove, and/or modify a fire protection system or carbon monoxide protection system without first procuring a written permit in accordance with Section 1.12 from the AHJ. The AHJ shall be notified when any fire protection system is out of service and on restoration of service.

**13.2.1** through **13.2.2.6\***. Delete.



1.05: continued

**13.3.1.1\*** Replace with the following:

**13.3.1.1** Automatic sprinklers shall be installed and maintained in full operating condition in accordance with this *Code* and the applicable standard or document for such system referenced in Chapter 2.

**13.3.1.4** Delete.

**13.3.2.1** Delete.

**13.3.2.8.1** Replace with the following:

**13.3.2.8.1** See M.G.L. c. 148, § 26G½.

**13.3.2.8.2** through **13.3.2.22.1.2** Delete.

**13.3.2.22.1.3** Replace with the following:

**13.3.2.22.1.3 High-rise Buildings.** See M.G.L. c. 148, §§ 26A and 26A½.

**13.3.2.22.1.4** through **13.3.2.22.4.2** Delete.

**13.3.2.23.1** through **13.3.2.23.2** Delete.

**13.3.2.23.4** through **13.3.2.23.4.2.3** Delete.

**13.3.2.24.1** Replace with the following:

**13.3.2.24.1** See M.G.L. c. 148, § 26.

**13.3.2.25** through **13.3.2.30** Delete.

**13.4.3** through **13.4.3.2** Delete.

**13.6.1.1.3** Add:

**13.6.1.1.3 Certificates.** Certificates, where required, shall comply with Section 1.13.

**13.7** through **13.7.11** Delete this Section and Replace with the following:

**13.7. Smoke Alarms and Detectors, Permits, Massachusetts General Laws, Primary Power Sources, and Carbon Monoxide Protection Systems.**

**13.7.1** For systems regulated by this *Code*, the AHJ shall have the authority to require construction documents for all fire protection and carbon monoxide systems to be submitted for review and approval and a permit to be issued prior to the installation, rehabilitation, or modification. Further, the AHJ shall have the authority to require that full acceptance tests of the systems shall be performed in the AHJ's presence prior to final system certification.

**13.7.2 Permits.** Permits, where required, shall comply with Section 1.12.

**13.7.2.1** For installations described in Section 13.7 governed by permits issued, the applicable code shall be determined based on the date of issuance stated on the permit.

**13.7.2.2** No person shall shut off, disconnect, obstruct, remove, and/or impair a fire protection system or carbon monoxide protection system without first procuring a written permit pursuant to Section 1.12 as required by the AHJ.

**13.7.3 Massachusetts General Laws.**

**13.7.3.1** For the purpose of compliance with M.G.L. c. 148, §§ 26E and 26F, smoke alarms shall be installed in accordance with the applicable requirements of Section 13.7.

**13.7.4 Smoke Detection.**

**13.7.4.1 General.** Where fire warning equipment is required by this *Code* to be installed in a building, such equipment shall be installed in accordance with *Massachusetts Electrical Code*, *NFPA 72: National Fire Alarm and Signaling Code* and Section 13.7.

**13.7.4.2** Low voltage system batteries for smoke detectors shall be maintained in accordance with applicable Sections of *NFPA 72: National Fire Alarm Signaling Code* by the owner, landlord or superintendent.

**13.7.4.3 Heat Detection.**

**13.7.4.3.1** The Head of the Fire Department shall be permitted to require the installation and interconnection of heat alarms/detectors in unheated open porches with stairways. Where such heat alarm/detector is required, it shall be listed for such use.

1.05: continued

### **13.7.5 Primary Power Source.**

**13.7.5.1** Smoke alarms/detectors, and carbon monoxide alarms shall be permitted to have battery power as a primary source, unless otherwise prohibited by applicable laws, codes, or standards.

#### **13.7.5.1.1 Nonrechargeable, Nonreplaceable Battery Power Alarms/Detectors.**

- (1) Photoelectric technology shall be required for smoke alarms and detectors.
- (2) A silence button shall be required on each smoke alarm, or detector device; within its control panel.
- (3) Each smoke alarm and detector device shall be equipped with a nonrechargeable battery.
- (4) Each smoke alarm and detector device shall be equipped with a nonreplaceable battery.
- (5) All power requirements for all smoke alarms and detectors shall be met for at least ten years of battery life, including weekly testing.
- (6) All power requirements for combination alarms with smoke/carbon monoxide shall be capable of powering the unit for its service life, including testing.
- (7) Household fire warning systems and smoke detectors shall receive their power in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

#### **13.7.5.1.2 Battery Powered with Network Technology (wireless) Alarms/Detectors.**

- (1) Photoelectric technology shall be required for smoke alarms/detectors.
- (2) All power requirements for all alarms and detectors are met for at least one year of battery life, including weekly testing.

#### **13.7.5.1.3 Other Technologies and Nonrequired Devices.**

**13.7.5.1.3.1** Where devices in Sections 13.7.5.1.1 and 13.7.5.1.2 have been installed, and placed, alarms and detectors having other technologies and or additional devices shall be permitted as provided in Sections 13.7.5.1.3.1(1) and (2).

- (1) Other technologies that are part of the same unit shall be permitted with photoelectric technology.
- (2) Non-required devices shall be permitted to be connected with required devices or installed within the same or different space, area, or location as provided in Table 13.7A, Table 13.7C and Table 13.7D, provided such devices have been installed in accordance with their applicable listings and have been tested, inspected and maintained pursuant to Section 10.24.

#### **13.7.5.1.4 Types of Device.**

**13.7.5.1.4.1** The following types of device shall be required:

- (1) A single station or multiple station alarm;
- (2) Detector;
- (3) A device as one unit with one or more technologies; and
- (4) Types of devices listed in Sections 13.7.5.1.4.1(1) through (3) shall be pursuant to Table 13.7B.

#### **13.7.5.1.4.2 Device Requirements.**

**13.7.5.1.4.2.1** The following device requirements shall comply with the following:

- (1) Devices shall be placed pursuant to Table 13.7A and Table 13.7C as applicable.
- (2) Single station or multiple station alarms shall meet standard ANSI/UL217: *Standard for Safety Smoke Alarms* as provided in Table 13.7B.
- (3) Smoke detectors shall meet standard ANSI/UL268: *Smoke Detectors for Fire Alarm Signaling Systems* as provided in Table 13.7B.
- (4) Devices provided in Sections 13.7.5.1.4.1(1) through (3) with an integrally mounted heat detector shall meet the following standards as provided in Table 13.7B as applicable
  - (a) Standard ANSI/UL 521: *Heat Detectors for Fire Protective Signaling Systems* that covers heat detectors for fire protective signaling systems
  - (b) Standard ANSI/UL 539: *Single and Multiple Station Heat Alarms* that covers heat-actuated, single and multiple station heat alarms
- (5) A combination device as a single unit with two or more technologies shall meet the following standards as provided in Table 13.7B and as provided below:
  - (a) ANSI/UL 217: *Standard for Safety Smoke Alarms* and ANSI/UL 2034: *Standard for Single and Multiple Station Carbon Monoxide Alarms* for combination alarms with smoke/carbon monoxide technologies;

## 1.05: continued

- (b) ANSI/UL 268: *Smoke Detectors for Fire Alarm Signaling Systems* and ANSI/UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors* for combination detectors with smoke/carbon monoxide technologies.
- (6) A device shall be permitted to be a single or multiple station alarm or detector with smoke and or heat detection and or carbon monoxide and or intrusion technologies within the same unit provided all of the conditions listed below in Sections 13.7.5.1.4.2.1(6)(a) and (b) for alarms or (b) and (c) for detectors are met:
  - (a) Combination devices with two or more technologies that are incorporated into one unit shall have simulated voice and tone alarm features which clearly distinguishes between two or more events such as carbon monoxide and smoke.
  - (b) Fire alarm signal shall take precedence, even when a non-fire alarm signal is initiated first.
  - (c) Combination detectors shall be permitted to satisfy requirements for both smoke and carbon monoxide detection required by this *Code* when listed in accordance with UL 268: *Standard for Safety Smoke Detectors for Fire Alarm Systems* and UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors*.
- (7) Such combination devices shall include both simulated voice and tone alarm features which clearly distinguishes between carbon monoxide and smoke notification, unless such system employs the following:
  - (a) Each such combination device produces a distinctive audible and visual alarm signal for smoke and carbon monoxide, in accordance with NFPA 72: *National Fire Alarm Signaling Code* and NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*;
  - (b) A control unit or annunciator is installed displaying a distinctive alphanumeric message (digital or embossed) for smoke and carbon monoxide;
  - (c) Where such control unit or annunciator is installed it shall be located in an accessible area within each dwelling unit and be visible at all times; and
  - (d) For transient residential and institutional structures, such control unit or annunciator shall be located at the constantly attended location and shall be monitored.

1.05: continued

**Table 13.7A**  
Smoke Alarms and Detectors  
Device, Placement, Power Supply, Type and Wiring  
Household Fire Warning  
For one and not more than two dwelling units  
Pre-1975-Dwellings-  
Pursuant to M.G.L. c. 148, §§ 26E and 26F

(Not substantially altered to constitute new)	
Device	(1) Smoke alarms/detectors installed shall require photoelectric technology.
Placement	(2) Smoke alarms/detectors shall be placed: (a) on every habitable level (b) on the basement level (c) on the ceiling of each stairway leading to the floor above, but not within each stairway, at the base of each stairway, including stairways to an unfinished/unheated basement/cellar (d) on ceiling outside of each separate sleeping area (e) in common areas on ceilings
Power Supply	(3) Smoke alarms/detectors pursuant to M.G.L. 148, §26E: (a) shall be permitted to have either battery or, primary power pursuant to M.G.L. c.148, § 26E for their power supply; and (b) Smoke alarms/detectors that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in Section 13.7.5
Type of Device	(4) Types of device shall be permitted to be a single station or multiple station alarm or detector. <i>See</i> Section 13.7.5.1.3
Type of Technology	(5) Technology (a) Photoelectric shall be required, <i>see</i> Sections 13.7.5.1.1 and 13.7.5.1.2 (b) Other types of technologies with required photoelectric technology. <i>See</i> Section 13.7.5.1.3
Wiring	(6) Non-interconnected smoke alarms/detectors shall be permitted within the dwelling unit. (7) Smoke/Heat alarms/detectors: (a) in a single family dwelling unit shall be permitted to be interconnected in basements (b) in a two-family dwelling unit shall be interconnected in common areas and in basements

**NOTE 1.** A dwelling, as used here, means one or more units providing facilities for cooking, sanitary, living, sleeping or eating.

**NOTE 2.** For compliance with M.G.L. c. 148, § 26F in existing buildings, 527 CMR 1.05: 1.1 may be applicable.

1.05: continued

**Table 13.7B**  
Listings for Smoke and Carbon Monoxide Alarms and Detectors

Smoke and Carbon Monoxide alarms and detectors shall be listed as provided below.		
Smoke Alarm and Detector	Heat Detection	Carbon Monoxide Smoke Alarms and Detectors
ANSI/UL 217 covers electrically operated single and multiple station smoke alarms.	ANSI/UL 539 covers heat-actuated, single and multiple station heat alarms.	ANSI/UL 2034 covers electrically operated single and multiple station carbon monoxide (CO) alarms.
ANSI/UL 268 covers smoke detectors for fire protective signaling systems.	ANSI/UL 521 covers heat detectors for fire protective signaling systems.	ANSI/UL 2075 covers toxic and combustible gas and vapor detectors and sensors.
		Combination smoke/carbon monoxide alarms shall be listed and labeled in accordance with ANSI/UL 217 and ANSI/UL 2034.
		Combination smoke/carbon monoxide detectors shall be listed and labeled in accordance with ANSI/UL 268 and ANSI/UL 2075.

**Table 13.7C**  
Smoke Alarms and Detectors  
Device, Placement, Power Supply, Type and Wiring  
Household Fire Warning  
For three or more dwelling units, but less than six  
Pre-1975-Dwellings-  
Pursuant to M.G.L. c. 148, §§ 26E and 26F

(Not substantially altered to constitute new)	
Device	(1) Smoke alarms/detectors shall require photoelectric technology.
Placement	(2) Smoke alarms/detectors shall be placed: (a) on every habitable level (b) on the basement level (c) on the ceiling of each stairway leading to the floor above, but not within the stairway, at the base of each stairway, including stairways to an unfinished/unheated basement/cellar (d) on ceiling outside of each separate sleeping area. (3) Smoke alarms/detectors shall be placed in common areas on the ceiling. (4) Heat alarms/detectors required by Section 13.7.4.3 shall be placed: (a) in open porches with stairs on the ceiling (b) in common areas on the ceiling.
Power Supply	(5) Smoke alarms/detectors pursuant to M.G.L. 148, § 26E: (a) shall be permitted to have either battery or, primary power pursuant to M.G.L. c. 148, § 26E for their power supply for alarms/detectors: (b) Smoke alarms/detectors that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in 13.7.5 (c) Common halls and basements shall have their power supply by primary power pursuant to M.G.L. c. 148, § 26E.
Type of Device	(6) Types of device shall be permitted to be a single station or multiple station alarm or detector. <i>See</i> Section 13.7.5.1.3



1.05: continued

Type of Technology	(7) Technology (a) Photoelectric shall be required, <i>see</i> Sections 13.7.5.1.1 and 13.7.5.1.2 (b) Other types of technologies with required photoelectric technology. <i>See</i> Section 13.7.5.1.3
Wiring	(8) Non-interconnected smoke alarms/detectors shall be permitted to be within the dwelling unit. (9) Smoke/Heat alarms/detectors shall be interconnected in common areas and in basements.

**NOTE 1.** A dwelling, as used here, means one or more units providing facilities for cooking, sanitary, living, sleeping or eating.  
**NOTE 2.** For compliance with M.G.L. c. 148, § 26F in existing buildings, 527 CMR 1.05: 1.1 may be applicable.

**13.7.6 Carbon Monoxide Detection.**

**13.7.6.1 General.** For the purposes of M.G.L. c. 148, § 26F½, carbon monoxide detection shall be provided and installed in accordance with *Installation of Carbon Monoxide (CO) Detection and Warning Equipment* and Section 13.7.6.

**13.7.6.2** Every owner, superintendent or landlord of every structure that employs carbon monoxide alarm protection byutilizing one or more of the carbon monoxide protection technical options listed in Section 13.7.7 equipped with a voice or annunciator as provided in Section 13.7.6.5.1 shall prepare a written emergency plan that is in effect and available to all personnel. The plan shall be presented to and approved by the Head of the Fire Department.

- (1) The plan shall include at a minimum:
  - (a) The development of a policy and procedure as a means to immediately communicate the alarm to the fire department;
  - (b) An evacuation plan; and
  - (c) A list of emergency contact phone numbers of responsible parties.
- (2) An annual review by the owner, superintendent or landlord of the plan with all employees, who shall be kept informed in respect to their duties and responsibilities under the plan;
- (3) Systems installed in accordance with Section 13.7.6.5.1 shall include information within each room indicating evacuation procedures in the event of an alarm condition.

**13.7.6.3** Annually, the owner, superintendent or landlord of every structure shall submit to the Head of the Fire Department an updated emergency plan, record of inspection, maintenance and testing on a form prescribed by the State Fire Marshal.

**13.7.6.4 Terms.** As used in Chapter 13, the enclosed terms shall have the following meaning assigned to them.

**13.7.6.4.1 Adjacent Spaces.** Any area, space, room, or dwelling unit located directly next to, below, or above any area space, room, or dwelling unit that contains fossil fuel burning equipment or enclosed parking. It shall not include closets, bathrooms, cabinets, or similar areas used for storage or utility purposes and temporarily occupied for activities relating to such storage or utility use.

**13.7.6.4.2 Centralized Fossil Fuel Burning Equipment.** A central heating plant, hot water heater, a combustion driven generator or fire pump, central laundry equipment, roof mounted air handling unit or similar equipment that emits carbon monoxide as a by-product of combustion and does not allow for air exchange between centralized fossil fuel burning equipment and dwelling units or common areas.

**13.7.6.4.3 Combination Device.** A device that employs more than one technology within the same unit such as smoke and carbon monoxide.

1.05: continued

**13.7.6.4.4 Carbon Monoxide Device.** A device intended for the purpose of detecting carbon monoxide gas and alerting occupants either by a distinct audible signal comprising an assembly that incorporates a sensor, control components and an alarm notification appliance in a single unit (alarm) or through a connection to an alarm control unit (detector).

**13.7.6.4.5 Daycare Facility.** A facility licensed by the Commonwealth under M.G.L. c. 15D, §§ 5, 6, and 7 or 903 CMR: The Department of Early Education and Care as a Child Care Center, School Aged Child Care Program, or Family Child Care Home, including Large Family Child Care and Family Child Care Plus.

**13.7.6.4.6 Dwelling Unit.** As used in Table 13.7D, Dwelling Unit means a single unit providing facilities for living and sleeping and used for residential purposes, unless specifically identified otherwise.

**13.7.6.4.7 Enclosed Parking.** A structure or an area or room, or floor or level thereof, enclosed within an overall building or structure or attached thereto that is designed or used for the parking of vehicles and does not comply with the minimum exterior wall opening requirements in the *Building Code*.

**13.7.6.4.8 Fossil Fuel Burning Equipment.** Any device, apparatus, or appliance which is designed or used to consume fuel of any kind in which such equipment emits carbon monoxide as a by-product of combustion.

**13.7.6.4.9 Habitable.** An area or space such as a cellar, basement, or attic that is designed, used, or equipped with furnishing for living purposes.

**13.7.6.4.10 Intermittent Ignition Device.** A device which ignites an automatic gas appliance to begin normal operation thereof and which is activated only at the time such automatic gas appliance is to be so ignited.

**13.7.6.4.11 Institutional Structures.** Any dwelling, building, or structure classified as use group I-1 through I-3, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as I-1 through I-3. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

**13.7.6.4.12 Residential Structures.** Any dwelling, building, or structure classified as use group R-1 with less than six dwelling units or R-2 through R-5, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as an R-1 with less than six dwelling units or R-2 through R-5. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

**13.7.6.4.13 Roof Mounted Fossil Fuel Burning Equipment.** Any fossil fuel burning equipment mounted on top of a structure that is used to condition any medium through heating or cooling.

**13.7.6.4.14 Transient Residential Structures.** Any dwelling, building, or structure classified as use group R-1 with six or more dwelling units, as defined in the *Building Code* and those unclassified occupancies that have the same characteristics as R-1 with six or more dwelling units. Where there is a dispute regarding use group classification of a structure, a determination shall be made by the municipal or state building inspector having jurisdiction.

**13.7.6.5 Carbon Monoxide Requirements.** A carbon monoxide device shall be installed as provided in Section 13.7.6 and Table 13.7D and placed in the following locations:

- (1) On every habitable level of a dwelling unit with or without a sleeping area.
- (2) In habitable portions of basements, cellars, and attics.
- (3) Within the immediate vicinity of a sleeping area but within ten feet measured in any direction from the door to the sleeping area (bedroom).
- (4) In each level of each dwelling unit in transient residential and institutional structures, with fossil fuel burning equipment or enclosed parking.
- (5) One carbon monoxide alarm shall be installed in each room used by children for sleeping, learning, or participating in early education and care activities in daycare facilities.
- (6) Carbon monoxide protection in Family Child Care Homes, Large Family Child Care and Family Child Care Plus facilities shall comply with Sections 13.7.6.5 (1), (2), and (3).

1.05: continued

13.7.6.6 Voice or Annunciators.

13.7.6.6.1 Smoke and carbon monoxide technologies shall be permitted to be installed as one unit as a combination device. Combination devices shall include both simulated voice and tone alarm features which clearly distinguishes between carbon monoxide and smoke notification, unless such system employs the following:

Each combination device initiates a distinctive audible and visual alarm signal for smoke and carbon monoxide, in accordance with NFPA 72: *National Fire Alarm Signaling Code* and NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment* and;

- (1) Within each dwelling unit, a control unit or annunciator is installed displaying a distinctive alphanumeric message (digital or embossed) for smoke and carbon monoxide and;
- (2) Where such control unit or annunciator is installed it shall be located in an accessible area within each dwelling unit and be visible at all times.
- (3) For transient residential and institutional structures, such control unit or annunciator shall be located at the constantly attended location and shall be monitored.

Table 13.7D  
Carbon Monoxide Detection Requirements for Dwellings<sup>1</sup>

Device	(1) Carbon Monoxide Devices.
Placement	(2) Carbon monoxide devices shall be installed in the following locations: <ul style="list-style-type: none"><li>(a) on every level of a dwelling unit with or without a sleeping area;</li><li>(b) in habitable portions of basements, cellars and attics;</li><li>(c) installed within the immediate vicinity of a sleeping area but within ten feet measured in any direction from the door to the sleeping area [bedroom];</li><li>(d) on every level in every dwelling unit of transient or institutional structures with fossil-fuel burning equipment or enclosed parking garage;</li><li>(e) in each room used for sleeping or learning in daycare facilities; and</li><li>(f) in locations (d) through (e) for Family Child Care Homes, Large Family Child Care, and Family Child Care Plus facilities.</li></ul>
Power Supply	(3) Carbon monoxide devices shall be powered as follows: <ul style="list-style-type: none"><li>(a) Battery powered, wireless appliances or an A/C (alternating current) plug-in with battery backup in accordance with NFPA 720 shall be installed in day care facilities and residential structures.</li><li>(b) A/C primary power source with battery backup in compliance or wireless systems with secondary power in compliance with NFPA 720 shall be installed in transient residential or in institutional structures.</li><li>(c) Carbon Monoxide alarms that do not include a secondary power source and have a battery as its primary power source shall meet the power provisions and conditions as provided in Section 13.7.5.</li></ul>
Type of Device	(4) Single or multiple station smoke alarms/detectors or combination smoke and carbon monoxide technologies in one unit shall be permitted per Sections 13.7.5.1.3 and 13.7.5.1.4.
Technical Options	(5) In <i>lieu</i> of providing carbon monoxide protection within each level of each dwelling unit, it shall be permitted to use one or more of the carbon monoxide protection technical options as provided in Section 13.7.7. However, notwithstanding the use of any alternative compliance option, carbon monoxide protection shall also be installed in any dwelling unit that contains fossil fuel burning equipment.
Wiring	(6) Non-interconnected carbon monoxide alarms and detectors shall be permitted to be within the dwelling unit.

NOTE 1. A dwelling, as it is used, here shall mean a single unit providing facilities for living and sleeping and used for residential purposes.

1.05: continued

**13.7.7 Technical Options.** In lieu of providing carbon monoxide alarm protection within each level of each dwelling unit, it shall be permitted to use one or more of the carbon monoxide protection technical options as described in Section 13.7.7. However, notwithstanding the use of any alternative compliance option, carbon monoxide alarm protection shall also be installed in any dwelling unit that contains fossil fuel burning equipment.

(1) **Type A.** Carbon monoxide protection shall provide visual and audible notification in the rooms or areas containing the fossil fuel burning equipment. Such protection shall be monitored in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. Such method of monitoring is to be determined at the discretion of the building owner. In accordance with NFPA 720, the retransmission of the signal shall be at the discretion of the Head of the Fire Department.

(2) **Type B.** Carbon monoxide protection for areas or rooms of centralized fossil fuel burning equipment consisting of kitchen appliances equipped with an intermittent ignition device shall comply with the Fuel/Gas Plumbing Code and NFPA 54: *National Fuel Gas Code*. A written certification shall be submitted to the Head of the Fire Department from a registered professional engineer licensed by the Commonwealth, certifying that the kitchen appliances meet Fuel/Gas Plumbing Code and said NFPA 54.

(3) **Type C.** Carbon monoxide protection for areas or rooms with centralized fossil fuel burning equipment which employ an automatic integrated shutdown device which shall be directly connected to the fossil fuel burning equipment and an A/C primary power source with battery backup in compliance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment* or low voltage or wireless systems in compliance with NFPA 720 that will cause a shut down to the fossil fuel burning equipment upon activation of a carbon monoxide device. The device must also provide an audible or visual alarm in the immediate area of the device and fossil fuel burning equipment. The fossil fuel burning equipment must be manually restarted after activation. A sign shall be mounted in the vicinity of the device with a minimum of one inch high letters in contrasting color with the following statement: "If the carbon monoxide device has activated, do not restart the equipment until serviced by a qualified technician".

*Exception: Such shut down requirement shall not be applicable to systems that are part of an emergency or standby system required by any municipal, state or federal law or regulation, provided the carbon monoxide detection system shall be monitored in accordance with NFPA 720: Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment.*

(4) **Type D.** Carbon monoxide protection for adjacent spaces of structures, areas or rooms considered enclosed parking, shall employ listed carbon monoxide alarm protection meeting ANSI/UL 2075: *Standard for Safety Gas and Vapor Detectors and Sensors* or a low voltage or wireless system. Such installation shall provide a visual or audible alarm in the rooms or areas containing the fossil fuel burning equipment. Such protection shall be monitored in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. Such method of monitoring is to be determined at the discretion of the building owner. In accordance with NFPA 720, the retransmission of the signal shall be at the discretion of the Head of the Fire Department.

(5) **Type E.** Carbon monoxide protection for enclosed parking shall employ, in the enclosed parking either:

(a) An automatic mechanical ventilation system that automatically operates upon detection of carbon monoxide in accordance with the *Building Code*, without exception or reduction and provides for a supervisory alarm at 50 parts per million (ppm) in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 720 and the retransmission of the signal shall be at the discretion of the Head of the Fire Department; or

(b) The enclosed parking has continuous mechanical ventilation at a minimum rate in accordance with the *Building Code* without exception or reduction. Such system shall employ a sensor to ensure the minimum airflow as designed is operating through the system. The sensor shall monitor direct airflow and shall be connected to the fire alarm panel as a supervisory alarm in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. A registered professional engineer licensed by the Commonwealth shall provide written certification to the Head of the Fire Department that the subject enclosed parking meets the requirements of Type (E).



1.05: continued

(6) **Type F.** Carbon monoxide protection for roof mounted fossil fuel burning equipment that circulate air from said unit to common areas only, shall be equipped with the following: A duct carbon monoxide gas detection device shall be installed on the discharge side of the roof mounted air handling unit or the common areas on the floor closest to the initial supply discharge from the roof mounted air handling unit. All such devices shall be installed in accordance with the manufacturer's instructions. The carbon monoxide gas detection device shall automatically alarm upon detection of carbon monoxide at 50 parts per million (ppm) and provide for a supervisory alarm in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 720, and the retransmission of the signal shall be at the discretion of the Head of the Fire Department. Upon activation of the carbon monoxide detection device and supervisory alarm, the roof mounted fossil fuel burning equipment shall shutdown until manually reset.

*Exception: Such shut down requirement shall not be applicable to systems that are part of an emergency or standby system required by any municipal, state or federal law or regulation.*

(7) **Type G.** Carbon monoxide protection for roof mounted fossil fuel burning equipment that do not circulate air to any common area or dwelling unit. (Reserved)

(8) **Type H.** Carbon monoxide protection for certain institutional structures that contain fossil fuel burning equipment that circulates air to patient rooms, inmate rooms or common areas. Carbon monoxide protection for certain institutional structures classified as either use group I-2 or I-3, that contains fossil fuel burning equipment that circulates air to dwelling units occupied by patients or inmates may be equipped with type H protection if the following conditions are met:

(a) Such structure contains dwelling units occupied by a person or persons who are not capable of self preservation due to age, mental disability, medical condition, incarceration, restraint, or security; and

(b) The occupants are under constant supervision on a 24-hour basis.

**13.7.7.1** Type H protection shall include a duct carbon monoxide gas detection device which shall be installed downstream of air filters, ahead of any branch connections in air supply systems of the fossil fuel air handling unit. All such devices shall be installed in accordance with the manufacturer's instructions. The carbon monoxide gas detection device shall automatically alarm upon detection of carbon monoxide at 50 parts per million (ppm) and provide for a supervisory alarm in accordance with NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*. Such method of monitoring is to be determined at the discretion of the building owner in accordance with NFPA 720 and the retransmission of the signal shall be at the discretion of the Head of the Fire Department. Upon activation of the carbon monoxide detection device and supervisory alarm, the fossil fuel burning equipment shall shutdown until manually reset.

**13.7.8** Fire alarm systems required by the *Building Code* shall be monitored.

*Exception: Single and multiple station smoke alarms required by the Building Code in other than Groups R-1 and R-2 with more than 16 units. Smoke detectors in Group I-3 occupancies automatic sprinkler systems and single- and multi-station smoke in three through five family dwellings. Smoke detectors in patient sleeping rooms in occupancies in Group I-2.*

**13.7.8.1** In all cases, central stations and those operating approved remote/proprietary station fire alarm system supervising stations shall retransmit alarm signals within 90 seconds of receipt, to the fire department having jurisdiction.

**13.7.8.2** Identical control diagrams showing all devices in the system and identifying their location and function shall be maintained current and kept on file with the AHJ and shall be kept on site, adjacent to the fire alarm panel in a format and manner approved by the AHJ.

**13.7.8.3** A copy of the final report required by the *Building Code* shall be filed with the fire code official and the building code official and an identical copy shall be maintained in an approved location at the building.



1.05: continued

**13.7.8.4** All signs required to identify fire protection equipment, equipment rooms and equipment locations shall be constructed of durable materials, be permanently installed, and be readily visible. Letters and numbers shall contrast with the sign back ground, shall be at least two inches in height, and shall have an appropriate width-to-height ratio to permit the sign to be read easily from a distance of ten feet. The sign and location shall be approved by the AHJ.

**13.7.8.6 A-2 Nightclub Use as of January 1, 2007: New Construction, Change of Use, or Substantial Modification.** The activation of any “fire protection system” element (signaling system, detection, sprinklering, *etc.*) shall automatically:

- (1) Cause immediate illumination of all areas and components of the required means of egress, and additionally;
- (2) Cause immediate full activation of all other house lighting; and
- (3) Cause immediate stopping of any and all sounds and visual distractions (public address systems, entertainment and dance lighting, music, *etc.*) that conflict/compete with the fire protective signaling system. [See the *Building Code*] [See Chapter 1, of this *Code*, Section 1.1.4 for maintaining these provisions]

**13.8** Replace as follows:

**13.8 Other Fire Protection Systems.** Where other fire protection systems are required to be installed by the provisions of this *Code*, or are installed with the approval of the AHJ as an alternative or equivalency, the design and installation of the system shall comply with the appropriate standards listed in Table 13.8. The system shall be tested and maintained in accordance with Section 10.24.

**13.10** through **13.10.10.2** Add:

**13.10 Inspection, Testing, and Maintenance.**

**13.10.1 Application.** The inspection, testing, and maintenance of single- and multiple-station alarms, fire alarm systems and household fire warning systems shall comply with the requirements of this section.

**13.10.1.1** Procedures that are required by other parties and that exceed the requirements of this section or NFPA 72: *National Fire Alarm Signaling Code* and NFPA 720: *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment* shall be permitted.

**13.10.1.2** The requirements of Section 13.10 shall apply to both new and existing systems.

**13.10.2 Purpose.**

**13.10.2.1** The purpose for initial and reacceptance inspections is to ensure compliance and to ensure installation is in accordance with this *Code*, and other required installation standards.

**13.10.2.2** The purpose for periodic inspections is to assure that obvious damages or changes that might affect the alarm system operability are visually identified.

**13.10.3 Deficiencies.**

**13.10.3.1 Responsibilities.**

**13.10.3.1.1 Tenants.**

**13.10.3.1.1.1** Tenants shall ensure that each alarm installed in the tenant's rental unit remains functional and is not disabled.

**13.10.3.1.1.2** Tenants or occupants shall not cause or disable any such alarm system or part thereof.

**13.10.3.1.1.3** If at any point the tenant believes that the alarm is not functional or malfunctioning, the tenant shall provide notice to the owner, landlord, superintendent or other owner's designated representative.

**13.10.3.2 Owner, Landlord, Superintendent or Other Owner's Designee.**

**13.10.3.2.1** Every owner, superintendent, landlord or designee shall, at a minimum, maintain, test, repair, or replace, if necessary, every alarm upon renewal of any lease term for any dwelling unit or on an annual basis, whichever is more frequent.

**13.10.3.2.1.1** Such testing shall be documented by the person performing such inspection on a form designated by State Fire Marshal.

1.05: continued

**13.10.3.2.2** When repairs or alterations or additions are made to an existing alarm and system the owner, landlord, superintendent or other owner’s designated representative shall be responsible for inspection, documentation of the actual repair or alternation and the testing of the alarm and system.

**13.10.3.2.3** A written agreement shall be required documenting delegation of responsibilities provided in this section.

**13.10.3.2.4** Where the building or system owner, landlord, superintendent or other owner’s designated has delegated any responsibilities or an inspection, testing, repair or alternation has been completed, a copy of the written delegation and the report required by Sections 13.10.3.2.3 and 13.10.3.2.2 shall be provided to the AHJ upon request.

**13.10.3.2.5** Occupant notification shall be required whenever an alarm system configured for releasing service is being serviced or tested.

**13.10.3.2.6** The owner, landlord, superintendent or other owner’s designated representative shall not cause or disable any such alarm system or part thereof.

**13.10.4 Inspection.**

**13.10.4.1** For the purpose of compliance with M.G.L. c. 148, § 26F½ or to confirm compliance with M.G.L. c.148, § 26F, a visual inspection of smoke or carbon monoxide alarms and detectors shall be performed in accordance with Table 13.10.4, or more often if required by this *Code* or the AHJ.

**13.10.4.2** The inspection maintenance for fire alarm and fire detection systems shall be in accordance with NFPA 72.

**Table 13.10.4 Visual Inspection**

Component	Initial Acceptance	Periodic Frequency	Method	Reference
1. All equipment	X	Sale and Transfer	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	10.24 13.7.1
2. Batteries and compartment	X	Sale and Transfer	Inspect for corrosion or leakage. Verify tightness of connections.	10.24 13.7.1
3. Device	X	Sale and Transfer	Inspection for expiration date of smoke alarm	10.24 13.7.1
4. Common Area	X	Annually Sale and Transfer	Inspection for compliance	10.24 13.7.1

**13.10.5 Testing.**

**13.10.5.1 Initial Acceptance Testing.**

**13.10.5.1.1** All new alarms and systems required by this *Code* shall be inspected and tested in accordance with the requirements of this section.

**13.10.5.2 Periodic Testing.**

**13.10.5.2.1** The owner, landlord, superintendent or other owner’s designee shall, for any existing, new, or modified alarm and system test every alarm and system in accordance with its listing when requested by the AHJ.

1.05: continued

**13.10.6 Testing and Frequency.**

**13.10.6.1** Every owner, superintendent, or landlord shall, at a minimum, maintain, test, repair, or replace, if necessary, every alarm upon renewal of any lease term for any dwelling unit or on an annual basis, whichever is more frequent. *See* Section 13.10.3.1 for responsibilities.

**13.10.6.2** Unless otherwise permitted by other sections of this *Code*, testing shall be performed in accordance with the schedules in Table 13.10.4 or more often if required by the AHJ.

**13.10.6.3** Alarms shall be replaced when they fail to respond to operability tests.

**13.10.6.4** The testing, for fire alarm and fire detection systems shall be in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

**13.10.7 Replacement of Single- and Multiple-station Alarms.**

**13.10.7.1** Alarms shall not remain in service longer than ten years from the date of manufacture, unless otherwise provided by the manufacturer's published instructions.

**13.10.7.2** Combination smoke/carbon monoxide alarms shall be replaced when the end-of-life signal activates or ten years from the date of manufacture, whichever comes first, unless otherwise provided by the manufacturer's published instructions.

**13.10.7.3** Other than provided in Section 13.7.5.1.1 where batteries are used as a source of energy for smoke alarms or combination smoke/carbon monoxide alarms or single- and multiple-station smoke alarms, the batteries shall be replaced in accordance with the alarm equipment manufacturer's published instructions.

**13.10.7.4** The owner, landlord, superintendent or other owner's designated representative shall be responsible to repair, replace or for the modification of an alarm and system.

**13.10.8 Maintenance.**

**13.10.8.1** Maintenance of an alarm and system shall be conducted according to the manufacturer's published instructions and deficiencies shall be corrected as applicable in Section 10.24.

**13.10.8.2** The maintenance for fire alarm and fire detection systems shall be in accordance with NFPA 72: *National Fire Alarm and Signaling Code*.

**13.10.9 Records.**

**13.10.9.1 Permanent Records.**

**13.10.9.1.1** The owner, landlord, superintendent or other owner's designated representative shall be responsible for maintaining records for the life of the alarm and system, for examination.

**13.10.10 Inspection, Testing, and Maintenance Records.**

**13.10.10.1** Records shall be retained until the next test and for one year thereafter.

**13.10.10.2** Records shall be on a medium that will survive the retention period. Paper or electronic media shall be permitted.

**Chapter 14 Means of Egress.**

**14.1** Replace with the following:

**14.1 Application.** Means of egress in new and existing buildings shall comply with this *Code* and the *Building Code*.

**14.2 through 14.2(2)** Replace with the following:

**14.2 Exit Access Corridors.** Corridors used as exit access shall be separated from other parts of the building in accordance with the *Building Code*.

**14.3.1 through 14.3.1(12)** Replace with the following:

**14.3.1** Where the *Building Code* requires an exit to be separated from other parts of the building, the separating construction shall meet the requirements of the *Building Code*.

1.05: continued

**14.4.3** Replace with the following:

**14.4.3 Impediments to Egress.** Any device or alarm installed to restrict the improper use of a means of egress shall be designed and installed so that it cannot, even in case of failure, impede or prevent emergency use of such means of egress, unless otherwise provided in the *Building Code*.

**14.4.4** Add:

**14.4.4 Exterior Egress.** Any fire escape or exterior stairway found to be in a state of deterioration or determined to be unsafe by the Head of the Fire Department shall be repaired immediately. Depending on the structural condition, a load test of any fire escape shall be conducted before it is returned to service.

**14.5.1.1\*** through **14.5.1.1\*(7)** Replace with the following:

**14.5.1.1 Swinging-type Door Assembly Requirement.** Any door assembly in a means of egress shall be of the side-hinged or pivoted-swinging type, and shall be installed to be capable of swinging from any position to the full required width of the opening in which it is installed.

**14.5.1.2** through **14.5.1.2(3)** Replace with the following:

**14.5.1.2 Door Leaf Swing Direction.** Door leaves required to be of the side-hinged or pivoted-swinging type shall swing in the direction of egress travel as required by the *Building Code*.

**14.5.1.3.1\*** through **14.5.3.1\*(2)** Replace with the following:

**14.5.1.3.1** During its swing, any door leaf in a means of egress shall leave not less than ½ of the required width of an aisle, a corridor, a passageway, or a landing unobstructed and shall project not more than seven inches (180 mm) into the required width of an aisle, a corridor, a passageway, or a landing, when fully open.

**14.5.1.3.2** Delete.

**14.5.1.4** Replace with the following:

**14.5.1.4 Screen Door Assemblies and Storm Door Assemblies.** Screen door assemblies and storm door assemblies used in a means of egress shall be subject to the requirements for direction of swing in accordance with the *Building Code*.

**14.5.1.5.1** through **14.5.1.5.1(4)** Replace with the following:

**14.5.1.5.1** The forces required to fully open any door leaf manually in a means of egress shall be in accordance with the *Building Code*.

**14.5.1.5.2** Delete.

**14.5.2.2\*** Delete.

**14.5.2.4** Delete.

**14.5.2.5.1(1)** Replace with the following:

(1) This alternative is permitted by the *Building Code* for the specific occupancy.

**14.5.2.5.2** Delete.

**14.5.2.7** Replace with the following:

**14.5.2.7** Where permitted by the *Building Code* key operation shall be permitted, provided that the key cannot be removed when the door leaf is locked from the side from which egress is to be made.

**14.5.2.8\*** through **14.5.2.8\*(3)** Replace with the following:

**14.5.2.8** Every door assembly in a stair enclosure shall meet the requirements of the *Building Code* for reentry.

**14.5.2.8.1** through **14.5.2.8.1(5)** Delete.

**14.5.2.8.2** through **14.5.2.8.2(6)** Delete.

**14.5.2.8.3** Replace with the following:

**14.5.2.8.3** Signage on the stair door leaves as provided in the *Building Code* shall be required as follows:

**14.5.2.10.1** through **14.5.2.10.6** Delete.

1.05: continued

**14.5.2.11(2)** Delete.

**14.5.2.12\*** Replace with the following:

**14.5.2.12** Devices shall not be installed in connection with any door assembly on which panic hardware or fire exit hardware is required where such devices prevent, or are intended to prevent, the free use of the leaf for purposes of egress.

**14.5.3.1.1** Replace with the following:

**14.5.3.1.1** Approved, listed, delayed-egress locking systems shall be permitted to be installed on door assemblies in accordance with the *Building Code*, protected throughout by an approved, supervised automatic fire detection system in accordance with Section 13.7 or an approved, supervised automatic sprinkler system in accordance with Section 13.3, provided the following criteria are met.

**14.5.3.1.1(1) through (1)(c)** Delete.

**14.5.3.1.1(3)\* through (3)(d)** Replace with the following:

(3) An irreversible process shall release the lock within 15 seconds, or 30 seconds where approved by the AHJ, upon application of a force to the release device as required by the *Building Code*.

**14.5.3.1.1(5)** Replace with the following:

(5) The egress side of doors equipped with delayed-egress locks shall be provided with emergency lighting in accordance with the *Building Code*.

PUSH UNTIL ALARM SOUNDS  
DOOR CAN BE OPENED IN 15 SECONDS [101:7.2.1.6.1.1]

**14.5.3.1.2** Delete.

**14.5.3.2\*** Replace with the following:

**14.5.3.2 Access-controlled Egress Door Assemblies.** Where permitted by the *Building Code*, door assemblies in the means of egress shall be permitted to be equipped with an approved entrance and egress access control system, provided that all of the following criteria are met:

**14.5.3.3\* through 14.5.3.3\*(14)** Delete.

**14.5.3.4.2\*** Replace with the following:

**14.5.3.4.2** Only approved panic hardware shall be used on door assemblies that are not fire-rated door assemblies. Only approved fire exit hardware shall be used on fire-rated door assemblies. New panic hardware and new fire exit hardware shall comply with ANSI/UL 305.

**14.5.3.4.3** Delete.

**14.5.4.1** Replace with the following:

**14.5.4.1** A door leaf normally required to be kept closed shall not be secured in the open position at any time and shall be self-closing or automatic-closing in accordance with Section 14.5.4.2, unless otherwise permitted by the *Building Code*.

**14.5.4.2** Replace with the following:

**14.5.4.2** In any building doors shall be permitted to be automatic-closing, provided that all of the following criteria are met:

**14.5.4.3** Delete.

**14.6.1.1** Replace with the following:

**14.6.1.1** All inside stairs serving as an exit or exit component shall be enclosed in accordance with the *Building Code*.

**14.6.1.2** Delete.

**14.6.1.3** Delete.

**14.6.2\* through 14.6.2.3** Delete.

**14.7.1\*** Delete.



1.05: continued

14.7.2 through 14.7.2(2) Delete.

14.7.4.1 through 14.7.4.1(2) Replace with the following:

14.7.4.1 The width of an exit passageway shall be sized to accommodate the aggregate required capacity of all exits that discharge through it as required by the *Building Code*.

14.7.4.2 through 14.7.2(2) Delete.

14.8.1.2\* Delete.

14.8.1.3 Replace with the following:

**14.8.1.3 Occupant Load.**

14.8.1.3.1 Delete.

14.8.1.3.2 Replace with the following:

14.8.1.3.2 The AHJ shall be permitted to require an approved aisle, seating, or fixed equipment diagram to substantiate any occupant load and shall be permitted to require that such a diagram be posted in an approved location.

14.8.1.4 through 14.8.1.6 Delete.

14.8.2.1 Replace with the following:

14.8.2.1 The width of means of egress shall be in accordance with the *Building Code*.

14.8.2.2 Delete.

14.8.2.3 Delete.

14.8.3.1 through 14.8.3.3 Delete.

14.8.3.4.1 through 14.8.3.4.1(2) Replace with the following:

14.8.3.4.1 The width of any means of egress shall be in accordance with the *Building Code*.

14.8.3.4.1.1\* through 14.8.3.4.1.1\*(2) Delete.

14.8.3.4.1.3 through 14.8.3.4.1.3(3) Delete.

14.8.3.4.3 Replace with the following:

14.8.3.4.3 Where more than one exit access leads to an exit, each shall have a width adequate for the number of persons the exit accommodates.

14.9.1.1 through 14.9.1.1(2) Delete.

14.9.1.2 Replace with the following:

14.9.1.2 The number of means of egress from any story or portion thereof, shall be as follows;

14.9.1.2(3) Add:

(3) or as otherwise allowed by the *Building Code*.

14.9.1.3 Replace with the following:

14.9.1.3 Accessible means of egress shall be in accordance 521 CMR: *Architectural Access Board* and the *Building Code*.

14.9.1.4 through 14.9.1.6.3 Delete.

14.10.1.1.1\* Replace with the following:

14.10.1.1.1 Where exits are not immediately accessible from an open floor area, continuous passageways, aisles, or corridors leading directly to every exit such areas shall be maintained.

14.10.1.1.2 Replace with the following:

14.10.1.1.2 Exit access corridors shall provide access to not less than two approved exits, unless otherwise provided in the *Building Code*.

14.10.1.1.3 Delete.

14.10.1.1.4 Delete.

1.05: continued

**14.10.1.2** Replace with the following:

**14.10.1.2** Corridors shall provide exit access without passing through any intervening rooms other than corridors, lobbies, and other spaces permitted to be open to the corridor, unless otherwise provided in the *Building Code*.

**14.10.1.2.1(2)** Replace with the following:

(2) Doors to such rooms shall comply with the *Building Code*.

**14.10.1.2.1(3)** Delete.

**14.10.1.3** Replace with the following:

**14.10.1.3** Remoteness shall be provided in accordance with the *Building Code*.

**14.10.1.3.1** through **14.10.1.4.2\*(3)** Delete.

**14.10.1.5\*** Replace with the following:

**14.10.1.5** Exit access shall be arranged so that there are no dead ends in corridors, unless permitted by, and limited to the lengths specified in the *Building Code*.

**14.10.1.6** Delete.

**14.10.2** Replace with the following:

**14.10.2 Impediments to Egress.**

**14.10.2.1\*** Replace with the following:

**14.10.2.1** Access to an exit shall not be through kitchens, storerooms other than as provided in the *Building Code*, restrooms, workrooms, closets, bedrooms, or similar spaces, or other rooms or spaces subject to locking, unless passage through such rooms or spaces is permitted by the *Building Code*.

**14.10.2.2.1** Replace with the following:

**14.10.2.2.1** Hangings or draperies shall not be placed over exit doors or located so that they conceal or obscure any exit.

**14.10.2.2.2** through **14.10.4.9** Delete.

**14.11.1\*** Replace with the following:

**14.11.1 Exit Termination.** Exits shall terminate directly, at a public way.

**14.11.1.1** through **14.11.1.4** Delete.

**14.11.2(1)** through **14.11.2(2)** Delete.

**14.11.2(4)** through **14.11.2(4)(b)iii.** Delete.

**14.11.2(5)** Replace with the following:

(5) The entire area on the level of discharge shall be separated from areas below by construction having a fire resistance rating not less than that required for the exit enclosure.

**14.11.2(6)** Delete.

**14.11.3.1** through **14.11.3.3\*** Delete.

**14.11.4** Replace with the following:

**14.11.4 Components of Exit Discharge.** Doors, stairs, ramps, corridors, exit passageways, bridges, balconies, escalators, moving walks, and other components of an exit discharge shall comply with the *Building Code*.

**14.11.6** through **14.11.6(2)** Delete.

**14.12.1.1\*** Replace with the following:

**14.12.1.1** Illumination of means of egress shall be provided in accordance with the *Building Code*. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and exit passageways leading to a public way.

1.05: continued

**14.12.1.2** Replace with the following:

**14.12.1.2** Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use as required by the *Building Code*.

**14.12.1.2.1** Replace with the following:

**14.12.1.2.1** Artificial lighting shall be employed at such locations and for such periods of time as are necessary to maintain the illumination to the minimum criteria values as required by the *Building Code*.

**14.12.1.2.2\*** through **14.12.1.2.2\*(7)** Delete.

**14.12.1.2.3\*** Replace with the following:

**14.12.1.2.3** Energy-saving sensors, switches, timers, or controllers shall be approved and shall not compromise the continuity of illumination of the means of egress required by the *Building Code*.

**14.12.1.3** through **14.12.1.3(4)** Delete.

**14.12.1.4\*** Delete.

**14.12.1.5** Delete.

**14.12.2.1** Replace with the following:

**14.12.2.1** Illumination of means of egress shall be from a source considered reliable by the *Building Code*.

**14.12.2.2** Replace with the following:

**14.12.2.2** Battery-operated electric lights and other types of portable lamps or lanterns shall not be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under the *Building Code*.

**14.13.1.1\*** through **14.13.1.1\*(6)** Replace with the following:

**14.13.1.1** Emergency lighting for means of egress shall be in accordance with the *Building Code*.

**14.13.1.3** Replace with the following:

**14.13.1.3** Where maintenance of emergency illumination depends on changing from one energy source to another, a delay of not more than ten seconds shall be permitted.

**14.13.2.1** Replace with the following:

**14.13.2.1** Required emergency lighting systems shall be tested in accordance with the manufacturer's instructions.

**14.13.2.1.1** through **14.13.2.1.1(5)** Replace with the following:

**14.13.2.1.1** Written records of tests shall be kept by the owner for inspection by the AHJ.

**14.13.2.1.2** through **14.13.2.1.2(7)** Delete.

**14.13.2.1.3** through **14.13.2.1.3(5)** Delete.

**14.14.1.1** Replace with the following:

**14.14.1.1** **Where Required.** Means of egress shall be marked in accordance with the *Building Code*.

**14.14.1.3** through **14.14.1.3(3)** Replace with the following:

**14.14.1.3** **Exit Stair Door Tactile Signage.** Tactile signage shall be provided to meet the criteria in accordance with the *Building Code*.

**14.14.1.4** Delete.

**14.14.1.5.2\*** Replace with the following:

**14.14.1.5.2** Sign placement shall be in accordance with the *Building Code*.

**14.14.1.6\*** Delete.

**14.14.1.7\*** Delete.

**14.14.1.9** Delete.

1.05: continued

**14.14.2.1** Replace with the following:

**14.14.2.1** A sign with a directional indicator showing the direction of travel shall be placed in every location where the direction of travel to reach the nearest exit is not apparent where required by the *Building Code*.

**14.14.3** through **14.14.4\*** Delete.

**14.14.5.1\*** Replace with the following:

**14.14.5.1 General.** Every sign required by the *Building Code* shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be legible in both the normal and emergency lighting mode.

**14.14.5.2\*** through **14.14.5.2.2\*** Delete.

**14.14.6.1\*** through **14.14.6.1.2** Delete.

**14.14.6.2\*** through **14.14.6.3\*** Delete.

**14.14.7** through **14.14.7.2\*** Delete.

**14.14.8.1** through **14.14.8.2** Delete.

**14.14.8.3.1** Replace with the following:

**14.14.8.3.1** Any door, passage, or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit shall be identified as required by the *Building Code*.

**14.15** Replace with the following:

**14.15 Emergency Escape and Rescue.**

**14.15.1** Replace with the following:

**14.15.1** Emergency escape and rescue openings shall comply with the *Building Code*.

**14.15.2** Replace with the following:

**14.15.2** Where approved, the emergency escape and rescue openings, security bars, grates, grilles, or similar devices shall be equipped with approved release mechanisms that are releasable from the inside without the use of a tool, a key, special knowledge, or force greater than that which it takes for normal operation of the door or window.

## **Chapter 15 Fire Department Service Delivery Concurrency Evaluation.**

Chapter 15 Delete in its entirety.

## **Chapter 16 Safeguarding Construction, Alteration, and Demolition Operations.**

**16.1.1.1** Add:

**16.1.1.1 Permits.** Permits, where required, shall comply with Section 1.12.

**16.1.2** Replace with the following:

**16.1.2** A fire protection plan shall be established and submitted in accordance with the *Building Code*.

**16.2.1.4** Delete.

**16.2.1.15** Add:

**16.2.1.15** Heaters used in the vicinity of tarpaulins, canvas, or similar coverings shall be located a safe distance from coverings and other combustible materials. The coverings shall be securely fastened to prevent ignition of the covering or upsetting of the heater due to wind action on the covering or other material.

1.05: continued

**16.2.1.16 Add:**

**16.2.1.16** Tests for the presence of carbon monoxide shall be made by a qualified person within one hour after the start of each work shift and at least every three hours thereafter. If concentrations of carbon monoxide reach 30 parts per million (ppm) by volume, tests shall be made more frequently to determine if there is a continuing increase of carbon monoxide concentration. Records of all tests, including the date, time, results obtained, and person making tests, shall be maintained for a seven dayperiod.

**16.2.1.17 Add:**

**16.2.1.17** Each time a salamander is placed in operation it shall be checked to ensure that it is functioning properly and its operation shall be checked periodically thereafter. When concentrations of carbon monoxide attain quantities greater than 50 parts per million (ppm) to air volume at employee breathing levels, the salamander shall be extinguished unless additional natural or mechanical ventilation is provided to reduce the carbon monoxide content to permissible limits.

**16.2.1.18 Add:**

**16.2.1.18** No employee shall be permitted to enter the heated area until notification of such entry is given to another person located outside. Periodic checks of at least one every 15 minutes shall be made to ensure the safety of employees entering the heated area.

**16.2.1.19 Add:**

**16.2.1.19** Fresh air shall be supplied in sufficient quantities to maintain the safety of employees. Where natural means of fresh air supply is inadequate (less than 16% oxygen by volume) mechanical ventilation shall be provided. Particular attention shall be given to confined spaces and pockets where heat and fumes may accumulate and employees may be present.

**16.2.3.1.2\* Replace with the following:**

**16.2.3.1.2** Only a one day supply of heater fuel shall be stored inside a building in the vicinity of the temporary heating equipment.

**16.9 through 16.9.3.4 Add:**

**16.9 Floor Finishing or Refinishing.**

**16.9.1 General.** Floor finishing or refinishing requirements shall apply to persons, or other entities, that engage in sanding, finishing, or refinishing wood floors, with or without compensation, in any building or structure. No person or entity shall apply or otherwise use any flammable floor finishing product during the course of any activity relating to the refinishing or finishing of the surface of a wood floor. This shall be in addition to the prohibitions of M.G.L. c. 94, § 329 relating to the sale and use of certain lacquer sealers during the course of commercial wood floor finishing operations.

**16.9.2 Flammable Floor Finishing Product.** Flammable floor finishing product as used herein, shall mean any clear or pigmented wood finish, formulated with nitrocellulose or synthetic resins to dry by evaporation and without chemical reaction, having a flashpoint below 100EF, and having a vapor pressure not exceeding 40 psi at 100EF, including clear lacquer sanding sealers.

**16.9.3 Fire Safety Requirements.** No person shall sand, strip, or refinish wood floors where such sanding, stripping, or vapor would create an explosive atmosphere from dust or vapor that when dispersed could be ignited in the air without first complying with the following fire/explosion safety requirements. The requirements in Sections 16.9.3(1) and (3) are not applicable if ventilation or a dust collection equipment system is used continuously to reduce vapor or dust from accumulating in concentrations that could cause ignition or explosion:

(1) **Sources of Ignition.** All fires, open flames, or other sources of ignition, including smoking materials, spotlights, halogen lights or appliance pilot lights shall be eliminated from the area or unit.

(2) **Electrical Permit Required.** An electrical permit is required when connecting any floor-refinishing machine directly to the electrical panel in accordance with *Massachusetts Electrical Code*.



1.05: continued

(3) **Warning Signs.** Any person or other entity sanding or stripping floors in a building containing more than one dwelling unit shall post suitable warning signs indicating the danger of dust and fire/explosion hazard and shall be conspicuously posted on all doors and entrances to the building and/or unit. Such notice is to be printed in contrasting colors and shall have lettering at least two inches high and shall state the name of the operator in charge, the date and time of the operation, and the area or unit where work is to be performed. Warning signs shall be posted at least 24 hours prior to engaging in such work.

(4) No Smoking signs, featuring the international pictograph prohibiting smoking, must be posted at all entrances to the house or building before floor sanding or finishing begins and until 24 hours after the end of all floor sanding and finishing activities.

**16.9.3.4 Waste Materials.** A metal waste-can with a self closing cover shall be provided for all waste materials, including wood, dust, and rags. All such materials shall be removed from the building and disposed of daily.

## Chapter 17 Wildland Urban Interface.

**Chapter 17** Delete in its entirety.

## Chapter 18 Fire Department Access and Water Supply.

**18.1 General Scope.** Fire department access and water supplies shall comply with this chapter. The provisions of this chapter shall not apply to any city, or town which has accepted the provisions of M.G.L. c. 41, § 81 *et. seq.* or similar laws which provide local jurisdiction over fire department access and water supply. In the absence of any such laws, fire department access and water supply shall comply with this chapter.

**18.1.1.3** Add:

**18.1.1.3** This chapter shall apply to new one- or two-family dwellings, not provided with adequate frontage and located behind an existing building that has frontage. For purposes of this section, adequate frontage shall mean at least 20 feet or more abutting a public way.

**18.1.1.3.1** Existing and new one- and two-family detached dwellings, not located behind a building with adequate frontage, and their accessory structures such as garages, carports, and sheds shall be exempt from the provisions of 18.2.3.

**18.1.1.4** Add:

**18.1.1.4** The fire apparatus access road plans must include an analysis and evaluation of fire apparatus maneuvers throughout the access roads created by swept path analysis and turn simulation software.

**18.1.1.5** Add:

**18.1.1.5** The fire apparatus access plans shall bear the seal and signature of the responsible registered professional engineer.

**18.1.1.6** Add:

**18.1.1.6** Nothing in this Section shall reduce the requirements established by cities or towns under M.G.L. c. 40A and planning and zoning bylaws.

**18.1.3.1** Replace with the following:

**18.1.3.1 Fire Apparatus Access.** Plans, where required, for fire apparatus access roads shall be submitted to the fire department for review and approval prior to construction.

**18.2.2.1.1** Add:

**18.2.2.1.1** Approval of access roads shall be subject to the AHJ and capable of supporting the imposed loads of fire apparatus and shall be provided with an all-weather driving surface and shall be maintained as provided.

**18.2.2.3** Replace with the following:

**18.2.2.3 Access Maintenance.** The owner or occupant of a structure or area, with required fire department access as specified in Section 18.2.2.1 or 18.2.2.2, shall notify the AHJ when the access is modified.

**18.2.3.1.3\*(1) through 18.2.3.1.3\*(4)** Delete.

1.05: continued

**18.2.3.1.3\*** Replace with the following:

**18.2.3.1.3\*** (6) Other detached buildings having an area not exceeding 400 ft.<sup>2</sup>

**18.2.3.1.3\*** Replace with the following:

**18.2.3.1.3\*** (6) Other detached buildings having an area not exceeding 400 ft.<sup>2</sup>

**18.2.3.1.5** Replace with the following:

**18.2.3.1.5** When fire department access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ shall be permitted to accept alternatives proposed by the owner of the building to allow additional fire protection features, up to and including the installation of an approved fire sprinkler system installed in accordance with the *Building Code*, cistern(s), additional fire hydrant(s), or similar devices or systems.

**18.2.3.2** Replace with the following:

**18.2.3.2 Access to Buildings and Facilities.**

**18.2.3.2.1.1** Add:

**18.2.3.2.1.1** Where a new building, not provided with adequate frontage, is to be located behind an existing building that has frontage, a fire department access road shall extend to within 25 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building.

**18.2.3.2.1.2** Where a townhouse as defined in the Building Code, is protected with an approved automatic sprinkler system that is installed in accordance with NFPA 13D or NFPA 13R, as applicable, the distance in 18.2.3.2.1 shall be permitted to be increased to 150 ft. (46 m).

**18.2.3.2.2.2** Except new one- or two-family dwellings, and townhouses, not provided with adequate frontage and located behind an existing building that has frontage.

**18.2.3.2.2.1** Replace with the following:

**18.2.3.2.2.1** When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems* the distance in Section 18.2.3.2.2 shall be permitted to be increased to 250 feet.

**18.2.3.4.1.1** Replace with the following:

**18.2.3.4.1.1** Fire department access roads shall have an unobstructed width of not less than 20 feet (6.1 m). Fire department access roads constructed in the boulevard-style shall be allowed where each lane is less than 20 feet but not less than ten feet when they do not provide access to a building or structure.

**18.2.3.4.2.1** Add:

**18.2.3.4.2.1** Permeable drivable surfaces, that meet loading of Section 18.2.3.4.2, are allowed when approved by the AHJ. When approved, the permeable surfaces shall be identified by a method acceptable to the AHJ.

**18.2.3.4.3.1** Replace with the following:

**18.2.3.4.3.1** The minimum inside turning radius of a fire department access road shall be 25 feet. The AHJ shall have the ability to increase the minimum inside turning radius to accommodate the AHJ's apparatus.

**18.2.3.4.6.1** Replace with the following:

**18.2.3.4.6.1** The gradient for a fire department access road shall not exceed 10%, unless approved in writing by the AHJ.

**18.2.3.4.8** Add:

**18.2.3.4.8 Travel in the Opposing Lane.** The use of the opposite travel lane is prohibited in the design of all new fire apparatus access roads.

**18.2.4.2.3 through 18.4.5.4\*** Delete.

**18.5.7** Add:

**18.5.7 Clear Space around Hydrants.**

**18.5.7.1** A 36-inch (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

1.05: continued

**18.5.7.2** A clear space of not less than 60 in. (1524 mm) shall be provided in front of each hydrant connection having a diameter greater than 2½ in. (64 mm).

## **Chapter 19 Combustible Waste and Refuse.**

**19.3** Add:

### **19.3 Special Hazards, Rubbish.**

**19.3.1** through **19.3.1.7** Add:

**19.3.1 Spontaneous Combustion.** Substances subject to spontaneous heating or ignition, such as oily or greasy rags, or other materials or combinations of materials, shall not be deposited in combustible containers or so kept or stored as to ignite combustible material.

**19.3.1.1** Such substances shall not be mixed with combustible rubbish or stored in the same containers.

**19.3.1.2** Materials subject to spontaneous ignition shall be kept in listed metal receptacles equipped with self-closing hinged covers designed to guard against the hazard of spontaneous combustion.

**19.3.1.3** Contents shall be emptied every night and disposed of properly.

**19.3.1.4 Hot Waste.** Hot coals, cinders, hot scrap metal, and similar substances shall not be deposited in combustible containers, or kept or stored so as to ignite combustible material.

**19.3.1.5** Such substances shall not be mixed with combustible rubbish or stored in the same containers.

**19.3.1.6** Such substances shall be kept, handled, or stored inside buildings only in noncombustible receptacles approved by the Head of the Fire Department for that purpose and location.

**19.3.1.7** Such substances shall be kept, handled, or stored outside of building locations so that they cannot ignite buildings on the premises or adjacent premises and will not endanger people.

**19.4** Add:

**19.4** Containers which require mechanical assistance to be moved, shall be marked with the name and telephone number of the company or person from which emergency service to expedite movement of the container can be obtained.

**19.5** Add:

**19.5** Waste storage rooms shall not contain boilers or furnaces used for the central heating of buildings, nor shall rooms with boilers or furnaces be used for waste storage of any kind. (See Section 10.19.5.1)

## **Chapter 20 Occupancy Fire Safety.**

**20.1.1** Replace with the following:

**20.1.1 Application.** New and existing assembly occupancies shall comply with Section 20.1.

**20.1.1.2** Delete.

**20.1.3.1** Replace with the following:

**20.1.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.1.3.2** through **20.1.3.5.4** Delete.

**20.1.4.1\*** Replace with the following:

**20.1.4.1 General.** Special amusement buildings, regardless of occupant load, shall meet the requirements for assembly occupancies, in addition to the requirements of Section 20.1.4 and the *Building Code*.

**20.1.4.2\*** through **20.1.4.6** Delete.

**20.1.4.7.2** Delete.

**20.1.4.8** Replace with the following:

**20.1.4.8 Interior Finish.** Interior finish shall be in accordance with the *Building Code*.

1.05: continued

**20.1.5.1.2** Delete.

**20.1.5.1.3** Replace with the following:

**20.1.5.1.3 Inspection of Door Openings.** Door openings shall be inspected by the owner or their representative and be in an operable condition at all times.

**20.1.5.4.5** Add:

**20.1.5.4.5** Upholstered furniture shall be tested in accordance with the provisions of Section 12.6.3.

**20.1.5.5.2** Delete.

**20.1.5.5.3** Delete.

**20.1.5.5.4.1** Delete.

**20.1.5.5.4.2** Delete.

**20.1.5.5.4.3** Delete.

**20.1.5.5.4.4** Replace with the following:

**20.1.5.5.4.4** Exhibit booth construction materials shall be limited to the following:

**20.1.5.5.4.4(1)** through **20.1.5.5.4.4(3)** Delete.

**20.1.5.5.4.4(5)** through **20.1.5.5.4.4(8)** Delete.

**20.1.5.5.4.7** Delete.

**20.1.5.5.4.7.1** Delete.

**20.1.5.5.4.7.2** Delete.

**20.1.5.5.4.7.3** Delete.

**20.1.5.6.1** Replace with the following:

**20.1.5.6.1** A nightclub, dance hall, discotheque or bar with an occupant load of 100 or more, shall be provided with a minimum of one trained crowd manager. Where the occupant load exceeds 250, additional trained crowd managers or crowd manager supervisors shall be provided at a ratio of one crowd manager for every 250 occupants.

**20.1.5.6.1.1** Add:

**20.1.5.6.1.1** A nightclub, dance hall, discotheque or bar shall be defined as:

- (1) Any facility classified as an A-2 or A-3 use group under the *Building Code* which is principally designed or used as a nightclub, dance hall, discotheque or bar; or
- (2) Any facility that features entertainment by live band or recorded music generating above normal sound levels and has a specific area designated for dancing.

**20.1.5.6.1.2** Add:

**20.1.5.6.1.2** A crowd manager is not required for:

- (1) A temporary structure erected at the same location for no more than ten days in any calendar year; or
- (2) A facility that features fixed seating, such as a theatre, auditorium, concert hall or similar place of assembly; or
- (3) A facility used for organized private function where:
  - (a) Each guest has a seat and a table for dining purposes; and
  - (b) Attendance for each event is limited by prearrangement between the facility operator and the private event organizers; and
  - (c) The legal capacity of the facility provides not less than 15 square feet (net) per occupant.

**20.1.5.6.2** Replace with the following:

**20.1.5.6.2** The crowd manager shall receive training, as required by the State Fire Marshal. The State Fire Marshal shall develop a reasonable method to confirm, on a three-year basis, that a crowd manager has completed the training in regards to their responsibility.

**20.1.5.6.2.1** Add:

**20.1.5.6.2.1 Certificates.** Certificates where required, shall comply with Section 1.13.

1.05: continued

**20.1.5.6.3** Add:

**20.1.5.6.3** A crowd manager shall be 21 years of age or older, shall be the owner or operator of the business or under the direct control and supervision of said owner or operator and shall be responsible for all of the following:

- (1) Maintaining clear paths of egress, assuring that the facility does not exceed its occupant load limit, initiating a fire alarm if necessary, directing occupants to exits;
- (2) Assuring general fire and life safety awareness of employees and occupants, including assuring that exit announcements are made in accordance with Section 20.1.5.8.3; and
- (3) Accurately completing the safety plan checklist required by Section 20.1.5.6.4.

**20.1.5.6.4\*** Replace with the following:

**20.1.5.6.4 Fire and Building Safety Checklist.**

- (1) The crowd manager shall be responsible for the completion of the Fire and Building Safety Checklist, as prescribed by the State Fire Marshal, on each day of operation prior to opening the facility to patrons.
- (2) This checklist shall include, but not be limited to, the routine safety check of existing fire protection systems, fire extinguishers, signage, interior finish, exits, unobstructed egress, crowd control procedures and building occupancy limits.
- (3) The original completed checklists shall be kept on the premises for at least one year and shall be subject to inspection by the AHJ.

**20.1.5.6.4.1** Add:

**20.1.5.6.4.1 Certificates.** Certificates where required, shall comply with Section 1.13.

**20.1.5.7\*** Delete.

**20.1.5.8.2** Delete.

**20.1.5.8.3\*(4)** Delete.

**20.1.5.8.3\*(5)** Add:

- (5) Nightclubs, dance halls, discotheques or bars.

**20.1.5.10** through **20.1.5.10.1.2** Delete.

**20.1.5.10.2** through **20.1.5.10.2.3** Delete.

**20.1.5.11** Delete.

**20.1.5.12** through **20.1.5.12.2** Delete.

**20.2.1** Replace with the following:

**20.2.1 Application.** New and existing educational occupancies shall comply with Section 20.2.

**20.2.2** through **20.2.2.5** Delete.

**20.2.3.1** Replace with the following:

**20.2.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.2.3.2** through **20.2.3.3.4** Delete.

**20.2.4.2.1\*** Replace with the following:

**20.2.4.2.1** Emergency egress drills shall be conducted in accordance with the applicable provisions of Section 20.2.4.2.

**20.2.4.2.1.1** Add:

**20.2.4.2.1.1** The responsible school official in charge of the school or the school system, shall formulate a plan for the protection and evacuation of all persons in the event of fire, and shall include alternate means of egress for all persons involved. Such plan shall be presented to and approved by the Head of the Fire Department.

**20.2.4.2.1.2** Add:

**20.2.4.2.1.2** The responsible school official in charge of the school or the school system shall see that each class instructor or supervisor shall receive proper instructions on the fire drill procedures specified for the room or area in which that person carries out their duties before they assume such duties.



1.05: continued

**20.2.4.2.1.3 Add:**

**20.2.4.2.1.3** Every student in all schools shall be advised of the fire drill procedure or shall take part in a fire drill within three days after entering such school.

**20.2.4.2.1.4 Add:**

**20.2.4.2.1.4** The Head of the Fire Department, or person designated by him or her, shall visit each school at least four times each year for the purpose of conducting fire drills and questioning the teachers and supervisors. These drills shall be conducted without advance warning to the school personnel other than the person in charge of the school at the time.

**20.2.4.2.1.5 Add:**

**20.2.4.2.1.5 Records.** A record of all fire exit drills shall be kept on the premises and persons in charge of such occupancies shall file written reports at least twice a year with the Head of the Fire Department giving the following information:

- (1) Time of drill;
- (2) Date of drill;
- (3) Weather conditions when occupants were evacuated;
- (4) Number of occupants evacuated;
- (5) Total time for evacuation; and
- (6) Other information relevant to the drill.

**20.2.4.2.1.6 Add:**

**20.2.4.2.1.6 Evacuation.** Fire exit drills shall include the complete evacuation of all persons from the building.

**20.2.4.2.1.7 Add:**

**20.2.4.2.1.7** A drill of the multi-hazard evacuation plan, required by the provisions of St. 2000, c. 159, § 363, shall be permitted to be substituted for one of the fire drills required by Section 20.2.4.2.3.

**20.2.4.2.2 Delete.**

**20.2.4.2.3 Delete.**

**20.2.4.3.2 Delete.**

**20.2.4.3.3 Delete.**

**20.2.4.4.2 Replace with the following:**

**20.2.4.4.2** Upholstered and molded plastic seating furniture shall be tested in accordance with the provisions of 12.6.3.

**20.2.4.4.3 Replace with the following:**

**20.2.4.4.3** Paper materials displayed in educational use occupancies shall be permitted on walls only in accordance with the following:

- (1) In classrooms, paper materials displayed shall not exceed 20% of the total wall area.
- (2) Paper materials displayed shall be attached directly to the walls and shall not be permitted to cover an egress door or be placed within five feet of an egress door, unless approved by the AHJ. When determining wall areas, the door and window openings shall be included unless:
  - (a) Paper materials are displayed in fully enclosed viewing cabinets with glass or polycarbonate viewing panels or covered with glass or polycarbonate sheet material in accordance with the *Building Code*;
  - (b) Flame retardant paper material is used for display.
- (3) Paper material displays shall be permitted to cover up to 50% of the total wall area in classrooms that are fully sprinklered in accordance with Chapter 13.

**20.2.4.4.4 Add:**

**20.2.4.4.4 Exit Access Passageways, Assembly Areas, and Corridors.** Paper materials shall be permitted on walls only in accordance with the following:

- (1) Paper materials displayed shall not exceed 10% of the surface area of any wall;
- (2) Such paper material shall be positioned in such manner to avoid concentration of materials to reduce flame spread in the event of a fire;

1.05: continued

(3) In no event shall any one grouping exceed a maximum horizontal measurement of 12 feet and a maximum vertical measurement of six feet. Groups of paper material shall be allowed as long as there is space between each group equal to the horizontal width of the largest adjacent group;

(4) Paper material used for display shall be attached directly to the walls and shall not be permitted to cover an egress door or be placed within five feet of an egress door, unless approved by the AHJ or unless:

(a) Paper materials are displayed in fully enclosed viewing cabinets with glass or polycarbonate viewing panels or covered with glass or polycarbonate sheet material in accordance with the *Building Code*.

(b) Flame retardant paper material is used for display.

(5) Paper material displays may cover up to 50% of the total wall area in classrooms that are fully sprinklered in accordance with Chapter 13.

**20.2.4.4.5 Add:**

**20.2.4.4.5 Exits and Enclosed Exit Stairs.** Displayed paper materials shall not be permitted in exits and enclosed exit stairs.

**20.2.4.4.6 Add:**

**20.2.4.4.6** This Section shall not prohibit the posting of exit signage or evacuation plans in accordance with this *Code*.

**20.2.4.4.7 Add:**

**20.2.4.4.7** The provisions of Section 20.2.4.4.3 or 20.2.4.4.4 shall not be applicable to any election materials required by law to be posted during any local, state or federal election.

**20.2.4.5 Replace with the following:**

**20.2.4.5 Unvented Fuel-fired Heaters.** Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54: *National Fuel Gas Code*, shall not be used in accordance with the following:

(1) **Prohibited Installations.** Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation.** Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

**20.2.4.5.1 Add:**

**20.2.4.5.1 Permit.** Permits, where required, shall comply with Section 1.12.

**20.3.1 Replace with the following:**

**20.3.1 Application.** New and existing day-care occupancies shall comply with Section 20.2.

**20.3.1.1 through 20.3.1.4 Delete.**

**20.3.1.5.1 through 20.3.1.5.3 Delete.**

**20.3.2 Delete.**

**20.3.2.1 Replace with the following:**

**20.3.2.1 Unvented Fuel-fired Heaters.** Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54: *National Fuel Gas Code*, shall not be used in accordance with the following:

(1) **Prohibited Installations.** Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation.** Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

**20.3.2.1.1 Add:**

**20.3.2.1.1 Permit.** Permits, where required, shall comply with Section 1.12.

**20.3.2.4 through 20.3.2.4.6 Delete.**

**20.3.3.1 Replace with the following:**

**20.3.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

1.05: continued

**20.3.3.2 through 20.3.3.4.4** Delete.

**20.3.4 through 20.3.4.2.3.6\*** Delete.

**20.4.1** Replace with the following:

**20.4.1 Application.** New and existing health care occupancies shall comply with Section 20.4.

**20.4.2.5.2(1)** Replace with the following:

(1) The furniture shall meet the criteria specified in Sections 12.6.3.1 and 12.6.3.3.

**20.4.2.5.3** Replace with the following:

**20.4.2.5.3** The requirements of Sections 20.4.2.5.2, 12.6.3.1, and 12.6.3.3 shall not apply to upholstered furniture belonging to the patient in sleeping rooms of existing nursing homes where the following criteria are met:

**20.4.3.1** Replace with the following:

**20.4.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.4.3.2 through 20.4.3.5.3** Delete.

**20.5.1** Replace with the following:

**20.5.1 Application.** New and existing residential board and care occupancies shall comply with Section 20.5.

**20.5.2.5.2.1** Replace with the following:

**20.5.2.5.2.1** New upholstered furniture shall be tested in accordance with the provisions of Sections 12.6.3.1(1) and 12.6.3.3.

**20.5.2.5.2.3.1** Replace with the following:

**20.5.2.5.2.3.1** Newly introduced mattresses shall be tested in accordance with the provisions of Sections 12.6.3.2 and 12.6.3.4.

**20.5.3 through 20.5.3.3.2** Delete.

**20.6.1** Replace with the following:

**20.6.1 Application.** New and existing ambulatory health care centers shall comply with Section 20.6.

**20.6.2.5.2(1)** Replace with the following:

(1) The furniture shall meet the criteria specified in Section 12.6.3.3.

**20.6.2.5.3(1)** Replace with the following:

**20.6.2.5.3(1)** The mattresses shall meet the criteria specified in Section 12.6.3.4.

**20.6.3 through 20.6.3.4** Delete.

**20.7.1** Replace with the following:

**20.7.1 Application.** New and existing detention and correctional occupancies shall comply with Section 20.7.

**20.7.2.1.1** Replace with the following:

**20.7.2.1.1** Detention and correctional facilities, or those portions of facilities having such occupancy, shall be provided with 24-hour staffing.

**20.7.2.1.1.1** Add:

**20.7.2.1.1.1 For Use Condition III, Use Condition IV, and Use Condition V.** The arrangement shall be such that the staff involved starts the release of locks necessary for emergency evacuation or rescue and initiates other necessary emergency actions within two minutes of alarm.

**20.7.2.1.2\* through 20.7.2.1.4.2** Delete.

**20.7.2.2\*** Delete.

**20.7.2.4.2** Replace with the following:

**20.7.2.4.2** Newly introduced upholstered furniture within detention and correctional occupancies shall meet the criteria specified in Sections 12.6.3.1(2) and 12.6.3.3.

1.05: continued

**20.7.2.4.3\*** Replace with the following:

**20.7.2.4.3** Newly introduced mattresses within detention and correctional occupancies shall be tested in accordance with the provisions of Sections 12.6.3.2 and 12.6.3.4.

**20.7.2.4.5** Delete.

**20.7.2.5** Delete.

**20.7.3.1** Replace with the following:

**20.7.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.7.3.2** through **20.7.3.6.2.3** Delete.

**20.8.1** Replace with the following:

**20.8.1 Application.** New and existing hotels and dormitories shall comply with Section 20.8, 20.8.2.5.2.1, 12.6.3.1 and 12.6.3.3.

**20.8.2.6** Replace with the following:

**20.8.2.6 Unvented Fuel-fired Heaters.** Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54/ANSI Z223.2, *National Fuel Gas Code*, shall be prohibited.

**20.8.3.1** Replace with the following:

**20.8.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.8.3.2** through **20.8.3.5** Delete.

**20.9.1** Replace with the following:

**20.9.1 Application.** New and existing apartment buildings shall comply with Section 20.9.

**20.9.2.1** Replace with the following:

**20.9.2.1 Emergency Instructions for Residential Housing for the Elderly.** Emergency instructions shall be provided annually by the housing complex administrator to each dwelling unit when containing six or more to indicate the location of alarms, egress paths, and actions to be taken, both in response to a fire in the dwelling unit and in response to the sounding of the alarm system.

**20.9.2.1.1** Add:

**20.9.2.1.1** The AHJ shall visit four times a year to:

- (1) To conduct a fire drill; or
- (2) Ascertain the evacuation process and procedure.

**20.9.2.2** Replace with the following:

**20.9.2.2 Fuel-fired Heaters.** Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, shall not be used.

**20.9.3** through **20.9.3.5** Delete.

**20.9.4** Replace with the following:

**20.9.4** Contents and furnishings in public areas shall comply with Section 12.6.3.

**20.10.1** Replace with the following:

**20.10.1 Application.** New and existing lodging or rooming houses shall comply with Section 20.10.

**20.10.2** Replace with the following:

**20.10.2 Fuel-fired Heaters.** Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, shall not be used.

- (1) **Prohibited Installations.** Unvented room heaters shall not be installed in bathrooms or bedrooms.
- (2) **Listing and Installation.** Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

1.05: continued

**20.10.3.1** Replace with the following:

**20.10.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.10.3.2** through **20.10.3.3.2** Delete.

**20.10.4** Replace with the following:

**20.10.4** Contents and furnishings in public areas shall comply with Section 12.6.

**20.11.1** Replace with the following:

**20.11.1 Application.** New and existing one- and two-family dwellings shall comply with Section 20.11.

**20.11.2** Replace with the following:

**20.11.2 Fuel-fired Heaters.** Unvented fuel-fired heaters shall not be used, unless they are listed and approved.

(1) **Prohibited Installations.** Unvented room heaters shall not be installed in bathrooms or bedrooms.

(2) **Listing and Installation.** Unvented room heaters shall be listed in accordance with ANSI Z21.11.2, *Gas-fired Room Heaters - Volume II, Unvented Room Heaters*, and shall be installed in accordance with the manufacturer's installation instructions.

**20.11.3** through **20.11.5** Delete.

**20.12.1** Replace with the following:

**20.12.1 Application.** New and existing mercantile occupancies shall comply with Section 20.12.

**20.12.2.3** Delete.

**20.12.3.1** Replace with the following:

**20.12.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.12.3.2** through **20.12.3.3.4** Delete.

**20.13.1** Replace with the following:

**20.13.1 Application.** New and existing business occupancies shall comply with Section 20.13.

**20.13.2.3** Delete.

**20.13.3.1** Replace with the following:

**20.13.3.1 General.** Interior finish shall be in accordance with the *Building Code*.

**20.13.3.2** through **20.13.3.3.4** Delete.

**20.14** through **20.14.3.3.2** Delete.

**20.15.1** Replace with the following:

**20.15.1 Application.** New and existing storage occupancies shall comply with the appropriate codes or standards referenced in Chapter 2 and Section 20.15.

**20.15.3** through **20.15.3.3.2** Delete.

**20.15.4(7)** Add:

(7) NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*, as modified by this *Code*.

**20.15.6** through **20.15.6.2\*** Delete.

**20.15.8.3** through **20.15.8.3.3(3)** Delete.

**20.16** through **20.16.1.2** Delete.

**20.17** through **20.17.3(2)\*** Delete.



1.05: continued

**20.18** Add:

**20.18 Special Provisions for Certain Places of Worship Which Have Been Issued a Valid Certificate of Occupancy for Use as a Temporary Overnight Shelter Pursuant to the *Building Code*.**

**20.18.1** through **20.18.1(3)(m)** Add:

**20.18.1** A place of worship which has been issued a valid certificate of occupancy for use as a temporary overnight shelter in accordance with the provisions of the *Building Code* shall not be deemed in violation of the provision of this *Code* as a result of such temporary use, as long as the facility meets the following conditions:

- (1) The temporary overnight shelter is in possession of a valid certificate of occupancy for such temporary use which has been reviewed and approved by the Head of the Fire Department in accordance with the *Building Code*.
- (2) The approved temporary overnight shelter is used, occupied, and operated in accordance with the terms and conditions specified in said certificate of occupancy and said certificate of occupancy is posted in a conspicuous location.
- (3) In addition to the terms and conditions specified in the certificate of occupancy, the following fire safety requirements shall be applicable:
  - (a) The building which houses the approved temporary overnight shelter shall have no known existing or outstanding violations of this *Code* or M.G.L. c. 148;
  - (b) A copy of the fire safety and evacuation plan, approved in accordance with the provisions of the *Building Code* shall be kept on the premises and posted near the main entrance;
  - (c) The responsible person(s) identified in the application for the Temporary Certificate of Occupancy shall maintain the condition of the shelter in accordance with the layout contained in the approved fire safety and evacuation plan;
  - (d) The employees, volunteers, or attendants of the temporary overnight shelter shall be trained and drilled in the duties that they are to perform in case of fire, panic, or other emergency in accordance with the provisions of Section 20.2.4.2.1.1;
  - (e) No person shall be permitted to smoke within the temporary overnight shelter;
  - (f) Smoking may be allowed outside in an area approved by the Head of the Fire Department;
  - (g) A document shall be posted, in a location approved by the Head of the Fire Department, containing an accurate number of sheltered occupants on a nightly basis;
  - (h) Such document shall also contain the names of all workers and volunteers who are overseeing or assisting in the temporary overnight shelter usage on a nightly basis. In the event of an evacuation, a copy of the document shall be in the possession of the person in charge at a designated meeting point;
  - (i) The temporary overnight shelter shall maintain a working landline phone that must be accessible to initiate a call for assistance in the event of an emergency. A cell phone is not acceptable for compliance with this requirement;
  - (j) The use of battery operated smoke alarms and carbon monoxide detectors, as outlined in Chapter 13. All temporary overnight shelters shall be equipped with monitored and interconnected smoke and carbon monoxide detection system as described in the *Building Code*;
  - (k) Carbon monoxide alarms shall be installed in accordance with Chapter 13. For purpose of compliance with Chapter 13, the dwelling unit of an approved temporary shelter shall be considered that portion of the building used for sleeping purposes;
  - (l) An approved temporary overnight shelter shall feature working and approved smoke detectors in accordance with the requirements of the *Building Code*, if applicable. If smoke detectors are not currently required under the *Building Code*, the shelter shall, at a minimum, feature approved working smoke detectors in accordance with the provisions of Chapter 13. Such approved smoke detectors shall be installed in any room or area used for sleeping purposes and in any room or area directly adjacent to said sleeping area; and
  - (m) The Head of the Fire Department shall be notified, in writing, at least 48 hours prior to the actual activation of an approved temporary overnight shelter and shall be notified, in writing, upon the termination of such activation.

1.05: continued

**Chapter 21 Airports and Heliports.**

**Chapter 21** Delete in its entirety.

**Chapter 22 Automobile Wrecking Yards.**

**22.8** Replace with the following:

**22.8 Burning Operations.** Burning operations shall not be allowed.

**22.9.3** through **22.9.3.2.** Delete.

**22.9.4** Delete.

**22.9.5** through **22.9.5.2** Delete.

**Chapter 23 Cleanrooms.**

**23.2.1** Add:

**23.2.1 Maximum Quantities of Hazardous Chemicals.** The maximum quantities of hazardous chemicals for a single fabrication area or at a workstation are limited by the *Building Code*. A permit shall not be issued until such time that the Building Official has confirmed the facility is classified and constructed as the appropriate H-use group or is exempt.

**Chapter 25 Grandstands and Bleachers, Folding and Telescopic Seating, Tents, and Membrane Structures.**

**Chapter 25** Delete in its entirety.

**Chapter 26 Laboratories Using Chemicals.**

**26.3** Add:

**26.3 Penetrations.** Penetrations through fire-rated floor/ceiling, floor, and wall assemblies shall be protected in accordance with the *Building Code*.

**26.4** Add:

**26.4** Installations made in accordance with the applicable requirements of the following standards shall be deemed to be in compliance with this *Code* except that the maximum allowable quantities of hazardous materials are limited to the quantities listed in the *Building Code* and Table 60.4.2.1.1.3 of this *Code*.

**Chapter 27 Manufactured Home and Recreational Vehicle Sites.**

**Chapter 27** Delete in its entirety.

**Chapter 28 Marinas, Boatyards, Marine Terminals, Piers, and Wharves.**

**Chapter 28** Delete in its entirety.

**Chapter 29 Parking Garages.**

**Chapter 29** Delete in its entirety.

1.05: continued

### Chapter 30 Motor Fuel Dispensing Facilities and Repair Garages.

**30.1.1.4** Add:

**30.1.1.4** Underground Storage Tanks, Associated Piping and Other Environmental Requirements, *see* 310 CMR: *Department of Environmental Protection*.

**30.1.5.1\*** Replace with the following:

**30.1.5.1** For an unattended self-serve, motor fuel dispensing facility, additional fire protection shall be provided where required by the State Fire Marshal.

**30.1.5.2** Replace with the following:

**30.1.5.2** An automatic fire suppression system shall be installed in accordance with the appropriate NFPA standard, manufacturers' instructions, and the listing requirements of the systems.

**30.1.5.3** Add:

**30.1.5.3** The fire protection system shall be installed in accordance with the requirements of the State Fire Marshal.

**30.2.7** Replace with the following:

**30.2.7 Fixed Fire Protection.** If in the opinion of the AHJ, it is deemed necessary, automatic sprinkler protection shall be installed in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*, when any vehicle containing or using gasoline or any other petroleum product for fuel or power is kept in a garage and are loaded with merchandise, which is of such a flammable nature as to be readily ignitable.

### Chapter 31 Forest Products.

**31.1\*** Replace with the following:

**31.1 General.** The outside storage of forest product materials within the purpose and scope of this Chapter shall be in accordance with the provisions of this Chapter.

**31.3.2.1.4** Replace with the following:

**31.3.2.1.4** Where the storage of materials regulated by this Chapter are permitted to accumulate in a quantity or location that may constitute an undue public safety hazard, adequate fencing of not less than six ft. (1.8388 m) in height with an approved locked gate located as necessary to allow the entry of fire department apparatus, shall be provided. The fencing shall encompass the material or property.

**31.3.3.3.4** Replace with the following:

**31.3.3.3.4** Where stacks are supported clear of the ground, six inches (150 mm) of clearance shall be provided for cleaning operations under the stacks or, as otherwise approved by the AHJ.

**31.3.3.4.1.1** Replace with the following:

**31.3.3.4.1.1** Open yard stacking shall be located with not less than 15 ft. (4.6 m) clear space to buildings or, as otherwise approved by the AHJ.

**31.3.3.4.1.2** Replace with the following:

**31.3.3.4.1.2** Boundary posts with signs designating stacking limits shall be provided to designate the clear space to unsprinklered buildings in which hazardous manufacturing or other operations take place or, as otherwise approved by the AHJ.

**31.3.6.4.3\*** Replace with the following:

**31.3.6.4.3** Property line clearance of not less than 25 ft. (7.62 m) at the base of the pile shall be provided.

### Chapter 32 Motion Picture and Television Production Studio Soundstages and Approved Production Facilities.

**32.1.1** Add:

**32.1.1 Terms.** As used in Chapter 32, the enclosed terms shall have the following meaning assigned to them.

1.5 : continued

**32.1.1(1)** Add:

- (1) **On-site Personnel.** Cast, crew, vendors, contractors, and any other personnel servicing the production.

**32.4.2** Replace with the following:

**32.4.2 Permits.** Permits where required shall comply with Section 1.12 and shall be obtained for any of the following activities:

- (1) Use of pyrotechnic special effects;
- (2) Use of open flames;
- (3) Welding;
- (4) Storage and use of flammable or combustible liquids or gases;
- (5) Use of aircraft;
- (6) Presence of motor vehicles within a building; or
- (7) Productions with live audiences.

**32.4.7.1** Replace with the following:

**32.4.7.1** Approved production facilities and soundstages shall be designed, constructed, or altered to sustain all structural load combinations in accordance with the *Building Code*.

**32.4.7.2** Replace with the following:

**32.4.7.2** Where the anticipated loads exceed those specified in the *Building Code* for the purpose of suspending sets, ceilings, backings, and other heavy production set pieces, the building shall be designed and constructed for the additional loads as required by the *Building Code*.

**32.4.8.1** Replace with the following:

**32.4.8.1** Electrical equipment shall be in accordance with the *Massachusetts Electrical Code*.

**32.4.11.1.2** Replace with the following:

**32.4.11.1.2** A new soundstage or new approved production facility shall be equipped with an approved, supervised automatic sprinkler system in accordance with the *Building Code*.

**32.4.11.1.3** Delete.

**32.5.1** Replace with the following:

**32.5.1 General.** Section 32.5 shall apply to production locations. [140:5.1]. Temporary use and occupancy shall be regulated by the *Building Code*.

**32.5.2** Replace with the following:

**32.5.2 Permits.** Permits where required shall comply with Section 1.12 and shall be obtained, unless waived by the AHJ, for any of the following activities:

- (1) Use of the site as a production location where more than 30 on-site personnel are present;
- (2) Use of pyrotechnic special effects;
- (3) Use of open flames;
- (4) Welding and cutting;
- (5) Storage and use of flammable or combustible liquids or gases;
- (6) Use of aircraft;
- (7) Presence of motor vehicles within a building;
- (8) Use of liquefied petroleum gases;
- (9) Productions with a live audience; or
- (10) Use of fog and haze.

**32.5.2.1** Add:

**32.5.2.1 Notification and Permits.** Notification shall be made to the Head of the Fire Department, or designee, at least two business days, prior to the use of production locations where 15 to 30 on-site personnel are present, providing permits are not required by Section 32.5.2.

**32.5.3.2** Replace with the following:

**32.5.3.2** Chapter 65 shall be used to regulate any pyrotechnic use.

**32.5.7.1** Replace with the following:

**32.5.7.1** Sets, scenery, and other equipment shall not impact the structural integrity of existing buildings. Additional loads applied onto the building shall be in accordance with the *Building Code*.

1.05: continued

**32.5.7.2** Replace with the following:

**32.5.7.2** Additional loads applied onto the building shall require approval of the Building Official.

**32.5.8.1** Replace with the following:

**32.5.8.1** Electrical power connections made to the site electrical service shall be in accordance with the *Massachusetts Electrical Code*.

**32.5.8.2** Delete.

**32.5.8.3\*** Delete.

**32.5.10\*** Replace with the following:

**32.5.10 Means of Egress.** The production location shall be provided with the means of egress per the *Building Code*.

**32.5.11** Replace with the following:

**32.5.11 Fire Protection.** Fire protection shall be provided in accordance with the *Building Code*.

**32.5.11.1\*** through **32.5.11.4\*** Delete.

### **Chapter 33 Outside Storage of Tires.**

**Chapter 33** Delete in its entirety.

### **Chapter 34 General Storage.**

**34.4.2.2\*** Replace with the following:

**34.4.2.2** Storage in buildings and structures shall not be within two feet of a ceiling, or roof deck or otherwise required by NFPA 13: *Standard for the Installation of Sprinkler Systems*.

### **Chapter 36 Telecommunication Facilities and Information Technology Equipment.**

**Chapter 36** Delete in its entirety.

### **Chapter 37 Fixed Guideway Transit and Passenger Rail Systems.**

**Chapter 37** Delete. in its entirety.

### **Chapter 38 Cannabis Growing, Processing or Extraction Facilities**

(for purposes of this chapter, cannabis shall be defined as the plant or any product derived from the plant, of the family *cannabaceae*; also known as marijuana or hemp).

#### **38.1\* Application.**

**A38.1** Chapter 38 specifically applies to the occupancy of cannabis growing, processing, and extraction. As is the case with other chapters of the code, some requirements for building construction and building systems fall under the jurisdiction of the building code. The authority to regulate cannabis growing falls under the Cannabis Control Commission or the Department of Agricultural Resources, as applicable. The fire department has jurisdiction and enforcement ability where the requirements of this chapter pertain to the operation of the facility (after the certificate of occupancy is issued), maintenance of the facility, potential creation of hazardous environments (such as through the use of carbon dioxide or fumigation chemicals), and processing using hazardous materials.

**38.1.1\*** Chapter 38 shall apply to the growing and processing of cannabis within new and existing buildings.



1.05: continued

**A38.1** Processing of other agricultural products not addressed by this chapter should comply with other applicable sections of this *Code*.

**38.1.2** The use, storage, transfilling, and handling of hazardous materials shall comply with this chapter, and other applicable provisions of this *Code*.

**38.1.3** Chapter 38 shall not apply to the retail sale of cannabis where growing and processing does not occur.

**38.1.4** Where a material, its use, or associated process poses multiple hazards, all hazards shall be addressed in accordance with applicable requirements of this *Code*.

**38.1.5\*** The occupancy of buildings or portions of buildings where the growing or processing of cannabis occurs shall be in accordance with Chapter 6 and the applicable *Building Code*.

**A38.1.5** Occupancy classification should take into consideration the hazards associated with the process occurring in the facility and the quantities of high-hazard contents.

**38.2 Permits.** Permits, where required, shall comply with Section 1.12.

**38.3 Fire Protection Systems.** Fire protection systems shall be provided in accordance with Chapter 13.

**38.4\* Means of Egress.** Means of egress shall be in accordance with Chapter 14.

**A38.4** Due to security of growing and processing operation, access control, electromagnetic locks, and other locking arrangement are used. Chapter 14 addresses the installation of specialized locking devices.

**38.5 Growing or Production of Cannabis.**

**38.5.1 Ventilation for Light Fixtures.** Light fixture ductwork shall be installed in accordance with the manufacturer and NFPA 90A and the mechanical code.

**38.5.2 Odor Control.** The use of ozone generators used for odor control shall comply with Chapter 54.

**38.5.3 Interior Finish, Contents, and Furnishings.**

**38.5.3.1** Interior finish, including the use of any plastic, mylar, or other thin film sheeting to enclose rooms or cover any walls or ceilings shall be in accordance with the *Building Code*.

**38.5.3.2** Hanging of plastic from ceiling or from suspended overhead structures to create wall dividers shall not be permitted.

**38.5.4 Fumigation.**

**38.5.4.1\* General.** Any cannabis growing facility that is fumigated shall comply with 38.5.4.

**A38.5.4.1** Fumigation for cannabis growing, processing, or extraction facility includes the production or use of sulfur dioxide.

**38.5.4.2\* Sources of Ignition.** Sources of ignition shall be shut off during the fumigation activity and remain shut off until the required ventilation is completed.

**A38.5.4.2** Fire, open flames, and similar sources of ignition should be eliminated from the space under fumigation or insecticidal fogging. Electricity in any part of the building, structure, or space where operation of switches or electrical devices, equipment, or systems could serve as a source of ignition should be shut off. In addition, electronic devices, including portable equipment and cellular phones, should be shut off and telephone lines should be disconnected from telephones.

**38.5.4.3 Notification.**

**38.5.4.3.1** The AHJ and fire department shall be notified in writing not less than 48 hours before the building, structure, or space is to be closed in connection with the utilization of any toxic or flammable fumigant.

**38.5.4.3.2** Notification, as required by 38.5.4.3.1, shall include the following:

- (1) The location of the enclosed space to be fumigated or fogged;
- (2) The occupancy;

1.05: continued

- (3) The fumigants or insecticides to be utilized;
- (4) The person or persons responsible for the operation; and
- (5) The date and time at which the operation will begin.

**38.5.4.3.3** Written notice of any fumigation or insecticidal fogging operation shall be given to all affected occupants of the building, structure, or space in which such operations are to be conducted with sufficient advance notice to allow the occupants to evacuate the building, structure, or space.

**38.5.4.3.4** Written notice, as required by 38.5.4.3.3, shall inform the occupants as to the purposes, anticipated duration, and hazards associated with the fumigation or insecticidal fogging operation.

**38.5.4.4 Signage.**

**38.5.4.4.1** Approved warning signs indicating the danger, type of chemical involved, and necessary precautions shall be posted on all doors and entrances to the premises, including interior rooms and areas.

**38.5.4.4.2** Signage shall be located at the exterior main entry and at the entries to those areas being fumigated indicating the duration of the fumigation.

**38.5.4.5 Watch Personnel.**

**38.5.4.5.1** During the period fumigation is in progress, a watchperson shall remain on duty at the entrance or entrances to the enclosed fumigated space until after the fumigation is completed and the building, structure, or space is properly ventilated and safe for occupancy.

**38.5.4.5.2** Sufficient watch persons shall be provided to prevent any person from entering the enclosed space under fumigation unobserved.

**38.5.4.6 Occupancy during Fumigation.** Occupants of the building, structure, or space to be fumigated, except the personnel conducting the fumigation, shall be evacuated from such building, structure, or space prior to commencing fumigation operations.

**38.5.4.7 Sealing of Building Structure, or Space.** Paper, and other similar materials, used to wrap or cover a building, structure, or space in excess of that required for the sealing of cracks, casements, and similar openings shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2 of NFPA 701.

**38.5.4.8 Maintenance of Openings.** All openings to the building, structure, or space to be fumigated or fogged shall be kept securely closed during such operation.

**38.5.4.9 Venting and Cleanup.** At the end of the exposure period the following procedures shall be followed:

- (1) Fumigators shall safely and properly ventilate the premises and contents.
- (2) Fumigant containers, residues, debris, and other materials used for such fumigation shall be properly disposed.
- (3) Obstructions shall be cleared from gas-fired appliance vents.

**38.5.5 Pesticide Application.**

**38.5.5.1** A warning sign shall be provided to indicate that pesticides have been applied.

**38.5.5.2** A record of pesticide application shall be provided and shall include the following:

- (1) The pesticide product or chemical used;
- (2) The date and time the pesticide was applied; and
- (3) When the room or area is safe to reoccupy.

**38.6\* Processing or Extraction.**

**A38.6** Flammable or combustible liquids, flammable gases, liquefied petroleum gases, or nonflammable gases used in extraction processing of oils and fats are hereinafter referred to as "solvents".

The extraction process includes extracting the oils and fats by use of a solvent, desolventizing the raw material and producing the miscella, distilling the solvent from the miscella, and recovering the solvent.

1.05: continued

### **38.6.1 General.**

#### **38.6.1.1 Extraction Room.**

**38.6.1.1.1** Extraction rooms in a cannabis extraction facility shall be constructed in accordance with the building code and this *Code*.

**38.6.1.1.2\*** For other than CO<sub>2</sub> and nonhazardous extraction process, the cannabis extraction equipment and process shall be located in a room of noncombustible construction dedicated to the extraction process and the room shall not be used for any other purpose.

**A38.6.1.1.2** The dedicated room should not be used for any other purpose, including storage. Materials that might interfere with the operation of exhaust systems should be prohibited, such as acoustical ceiling tiles.

**38.6.1.1.3** Cannabis extraction shall not be located in any building containing assembly, educational, day care, health care, ambulatory health care, residential board and care, residential, or detention and correctional facilities.

**38.6.1.1.4\* Means of Egress.** For extraction rooms using hazardous materials, each room shall be provided with at least one exit access door complying with the following:

- (1) The door shall swing in the direction of egress travel.
- (2) The door shall be provided with a self-closing or automatic closing device.
- (3) The door shall be equipped with panic or fire exit hardware.

**A38.6.1.1.4** Examples of rooms using hazardous materials for extraction are those using flammable and combustible liquids and CO<sub>2</sub>.

#### **38.6.1.2 Staffing.**

**38.6.1.2.1\*** For other than approved, unattended processes, the extraction process shall be continuously staffed.

**A38.6.1.2.1** Nonhazardous processes might not warrant constant attendance by trained personnel.

**38.6.1.2.2\*** Staff monitoring the extraction process shall be trained in the following:

**A38.6.1.2.2** Staff monitoring the extraction process do not need to meet the training requirements of 38.6.1.3.

- (1) The extraction process;
- (2)\* The transfer of solvents, where applicable.

**A38.6.1.2.2(2)** The transfer of solvent includes LPG liquid transfilling.

- (3) All emergency procedures

**38.6.1.2.3** All staff training records shall be maintained on-site and made available to the AHJ upon request.

#### **38.6.1.3 Operator Training.**

**38.6.1.3.1** In addition to the provisions of 38.6.1.2, the operator of the cannabis extraction equipment shall also receive training in safe operation of the equipment.

**38.6.1.3.2\*** Documentation of training required by 38.6.1.3.1 shall be maintained on-site and made available to the AHJ upon request.

**A38.6.1.3.2** Examples of these programs include, but are not limited to, the following:

- (1) Training programs developed by extraction equipment manufacturers
- (2) Compressed Gas Association CGA P-1, Safe Handling of Compressed Gases in Containers, for operators of CO<sub>2</sub> equipment
- (3) Programs by governmental organizations

#### **38.6.1.4 Signage.**

**38.6.1.4.1** All applicable safety data sheets (SDS) shall be posted in the extraction room.

**38.6.1.4.2** The NFPA 704 hazard rating diamond sign and no smoking signs shall be posted on the exterior of the extraction room door.

1.05: continued

**38.6.1.4.3** Applicable hazard warning signage shall be posted throughout the facility as applicable for emergency equipment.

**38.6.1.5 Systems, Equipment, and Processes.**

**38.6.1.5.1 General.**

**38.6.1.5.1.1** Systems, equipment, and processes shall be in accordance with 38.6.1.5.1 through 38.6.1.5.6.3.

**38.6.1.5.1.2** Systems, equipment, and processes shall include, but are not limited to, vessels, chambers, containers, cylinders, tanks, piping, tubing, valves, fittings, and pumps.

**38.6.1.5.1.3** In addition to the requirements in 38.6.1.5, systems, equipment, and processes shall also comply with 60.5.1.6, other applicable provisions of this Code, the building code, and NFPA 90A.

**38.6.1.5.1.4** Systems or equipment used for the extraction of cannabis oils and products from plant material shall be performed using equipment that has been listed or approved.

**38.6.1.5.2 Equipment.**

**38.6.1.5.2.1\*** Where an explosion condition exists, heating equipment such as vacuum ovens, heating mantels, heat guns, or other equipment shall not be used to heat flammable or combustible liquids or oils containing liquefied petroleum gasses.

**A38.6.1.5.2.1** An "explosion condition" is considered a condition in which the potential for an explosion or deflagration could occur. If a failure of the containment method for flammable liquids or gases could result in vapors being released in the quantities that may reach the LFL or LEL, an explosion condition could exist. For example, if a flammable liquid or gas is used for a process within a piece of equipment, it is likely that an explosion condition would exist if the equipment was improperly closed, or if there is a pressure relief valve. It is the intention of this section to eliminate known sources of ignition from the vicinity of equipment which use flammable liquids or gases.

**38.6.1.5.2.2** Refrigerators, freezers, and other cooling equipment used to store or cool flammable liquids shall be listed for the storage of flammable/combustible liquids or be listed for Class I, Division 1 locations, as described in Article 501 of NFPA 70.

**38.6.1.5.2.3\*** LPG tanks shall comply with 69.2.1.

**A38.6.1.5.2.3** The provisions for container (*i.e.*, tank) construction are applicable to the working tank or the supply tank that is connected to the extraction equipment.

**38.6.1.5.3 Approval for Systems and Equipment with No Listing.**

**38.6.1.5.3.1** Where the system used for extraction of cannabis oils and products from plant material is not listed, the system shall have a designer of record.

**38.6.1.5.3.2** The designer of record shall be a registered design professional.

**38.6.1.5.4\* Documentation for Equipment with No Listing.** For systems and equipment not listed for the specific use, a technical report in accordance with Section 1.15 documenting the design or peer review of the equipment shall be prepared and submitted to the AHJ for review and approval.

**A38.6.1.5.4** The technical report documenting the design or peer review should be submitted for review and approval to the AHJ prior to the equipment being located or installed at the facility.

Where a technical report is required to be submitted for review and approval by the AHJ, the following should occur:

- (1) Prior to the submittal of the technical report, the engineer should submit to the AHJ any educational background and professional experience specific to the review and approval of the system, equipment, and processes with like hazards of those associated with the cannabis extraction system.

## 1.05: continued

- (2) Once the proof of qualifications are found acceptable by the AHJ, the engineer of record should produce the technical report and the report should be signed and sealed in accordance with respective state requirements.

All of, but not limited to, the following items should be included in the technical report:

- (1) Manufacturer information;
- (2) Engineer of record information;
- (3) Date of review and report revision history; and
- (4) Signature page, which should include the following:
  - a. Author of the report;
  - b. Date of the report;
  - c. Seal, date, and signature of the engineer of record performing the design or peer review; and
  - d. Date and signature of the engineer performing the engineering check of the report (which cannot be performed by the authoring engineer though it can be the same firm as the authoring engineer).
- (5) Model number of the item evaluated. If the equipment is provided with a serial number, the serial number should be included for verification at the time of the site inspection.
- (6) Methodology of the design or peer review process used to determine minimum safety requirements. Methodology should consider the basis of design, and should include a code analysis and code path to demonstrate the reason as to why specific code or standards are applicable or not.
- (7) Equipment description. A list of all components and subassemblies of the system or equipment, indicating the materials, solvent compatibility, maximum temperature, and pressure limits
- (8) A general flow schematic or general process flow diagram (PFD) of the process. All primary components of the process equipment should be identified and match the aforementioned list. Operating temperatures, pressures, and solvent state of matter should be identified in each primary step or component. A piping and instrumentation diagram (PID or PI&D) might be provided but is not required.
- (9) Analysis of the vessel(s) if pressurized beyond standard atmospheric pressure. Analysis should include purchased and fabricated components.
- (10) Structural analysis for the frame system supporting the equipment.
- (11) Process safety analysis of the extraction equipment, from the introduction of raw product to the end of the extraction process
- (12) Comprehensive process hazard analysis considering failure modes and points of failure throughout the process. The portion of the review should include review of emergency procedure information provided by the manufacturer of the equipment or process and not that of the facility, building, or room.
- (13) Review of the assembly instructions, and operational and maintenance manuals provided by the manufacturer.
- (14) Findings and observations of the analysis.
- (15) List of references used in the analysis.

If the technical report or manufacturer's literature indicate specific requirements for the location, room, space, or building where the extraction process is to occur, the engineer of record, as approved, should review the construction documents of such location, room, space, or building and provide a report of their findings and observations to the AHJ.

The findings and observations should include the following:

- (1) Process safety analysis of the entire process from raw material to finished product.
- (2) Comprehensive process hazard analysis considering failure modes and points throughout the process and a review of emergency procedures as related to the equipment or process and the facility.

### **38.6.1.5.5 Change of Extraction Medium.**

**38.6.1.5.5.1** Where the medium of extraction or solvent is changed from the material indicated in the technical report or as required by the manufacturer, the technical report shall be revised at the cost of the facility owner and submitted for review and approval by the AHJ prior to the use of the equipment with the new medium or solvent.



1.05: continued

**38.6.1.5.5.2** If the original designer of record is not available, then the new designer of record shall comply with 38.6.1.5.3.1.

**38.6.1.5.6 Equipment Field Verification.**

**38.6.1.5.6.1** Prior to operation of the extraction equipment, the designer of record for the equipment shall inspect the site of the extraction process once equipment has been installed for compliance with the technical report and the building analysis.

**38.6.1.5.6.2** The designer of record performing the field verification shall provide a report of findings and observations of the site inspection to the AHJ for review and approval prior to the approval of the extraction process.

**38.6.1.5.6.3** The field inspection report authored by designer of record shall include the serial number of the equipment used in the process and shall confirm the equipment installed is the same model and type of equipment identified in the technical report.

**38.6.2 Liquefied Petroleum Gas (LPG) Extraction.**

**38.6.2.1 General.** Cannabis extraction facilities using liquefied petroleum gas solvents shall comply with 38.6.1 and 38.6.2.

**38.6.2.2 Exhaust.**

**38.6.2.2.1** An approved exhaust system shall be provided for LPG extractions.

**38.6.2.2.2** The exhaust systems shall be installed and maintained accordance with NFPA 91 or the *Mechanical Code*.

**38.6.2.2.3** All LPG extraction operations, including processes for off-gassing spent plant material and oil retrieval, shall be conducted within a chemical fume hood or enclosure in compliance with NFPA 91 or the *mechanical code*.

**38.6.2.3 Electrical.**

**38.6.2.3.1** All conductive equipment and conductive objects within the exhaust room shall be bonded and grounded with a resistance of less than  $1.0 \times 10^6$  ohms in accordance with NFPA 70.

**38.6.2.3.2** The area within a hood or enclosure used for LPG extractions shall be classified as a Class I, Division 1 hazardous location in accordance with NFPA 70.

**38.6.2.3.3** Areas adjacent to Class I, Division 1 locations shall be classified in accordance with NFPA 70.

**38.6.2.3.4** All electrical components within the extraction room shall be interlocked with the hazardous exhaust system such that room lighting and other extraction room electrical equipment will only operate when the exhaust system is in operation.

**38.6.2.3.5** An automatic emergency power system shall be provided for the following items, when installed:

- (1) Extraction room lighting;
- (2) Extraction room ventilation system; and
- (3) Solvent gas detection system.

**38.6.2.4 Extraction Room Gas Detection System.**

**38.6.2.4.1** An approved continuous gas detection system shall be provided.

**38.6.2.4.2\*** The gas detection system shall alert the extraction operator in an approved manner at a gas detection threshold no greater than 25% of the gas LEL/LFL.

**A38.6.2.4.2** The purpose of alerting the extraction operator is to provide notification that the operator is in a flammable environment because the LP gas used is not odorized. This could be in a form of visual warning, local alarm, or other approved means. However, it is not intended for evacuation or to dispatch the fire department.

**38.6.2.4.3** Gas detection systems shall be provided with constant non-interlocked power.

1.05: continued

**38.6.2.5 Protection.** An automatic suppression system shall be provided within hoods or enclosures, including ductwork, in accordance with the following:

- (1) An automatic water sprinkler system that meets all applicable requirements of NFPA 13;
- (2) A carbon dioxide extinguishing system that meets all applicable requirements of NFPA 12;
- (3) dry chemical extinguishing system that meets all applicable requirements of NFPA 17; and
- (4) A gaseous agent extinguishing system that meets all applicable requirements of NFPA 2001.

**38.6.2.6 Storage.** LPG containers not in use shall not be stored within extraction rooms.

**38.6.2.7 Facility Piping Systems.** LPG liquid piping systems shall be in compliance with NFPA 58.

### **38.6.3 Flammable and Combustible Liquid Extraction.**

**38.6.3.1 General.** Cannabis extraction facilities using flammable and combustible liquid solvents shall comply with 38.6.1 and 38.6.3.

#### **38.6.3.2 Exhaust.**

**38.6.3.2.1\*** Extraction and post oil processing operations, including dispensing of flammable liquids between containers, shall be performed in one of the following locations:

- (1) A chemical fume hood in accordance with Chapter 7 of NFPA 45; or
- (2) An approved exhaust system installed in accordance with NFPA 91 or the *Mechanical Code*.

**A38.6.3.2.1** The intent of this section is to require an exhaust system utilization to capture velocities across the work area. Standard laboratory capture velocity is between 80 and 100 ft./min (24 and 30 m/min).

Most flammable liquid extractions and post oil processing are bench-top process that can be conducted in a chemical fume hood. Larger operations might need larger hoods or special full-room exhaust systems in compliance with NFPA 91 or the *Mechanical Code*. The exception is intended for small unheated processes where plant material might be soaked in flammable liquid and directly transferred to a food product.

**38.6.3.2.2** Unheated processes at atmospheric pressure using less than 16 oz (473 ml) of flammable liquids shall not be required to comply with 38.6.3.2.1.

**38.6.3.2.3** Classified electrical systems shall be in accordance with NFPA 70.

**38.6.3.2.4** All electrical components within the chemical fume hood or exhausted enclosure shall be interlocked such that the exhaust system shall be in operation for lighting and components to be used.

**38.6.3.3 Storage and Handling.** The storage, use, and handling of flammable liquids shall be in compliance with this chapter and Chapter 66.

**38.6.3.4** Heating of flammable or combustible liquids over an open flame shall be prohibited.

### **38.6.4 Carbon Dioxide Extraction.**

**38.6.4.1 General.** Cannabis extraction facilities using carbon dioxide solvents shall comply with 38.6.1 and 38.6.4.

**38.6.4.2 Storage and Handling.** All CO<sub>2</sub> compressed gas cylinders shall be secured to a fixed object to prevent falling.

#### **38.6.4.3 CO<sub>2</sub> Gas Detection.**

**38.6.4.3.1** An approved, listed CO<sub>2</sub> detector shall be installed in the CO<sub>2</sub> extraction room.

**38.6.4.3.2** Auto calibrating and self-zeroing devices or detectors shall be prohibited.

**38.6.4.3.3** The detector shall be set to alarm at 5000 ppm of CO<sub>2</sub>.

**38.6.4.4\* CO<sub>2</sub> Discharges.** The extraction equipment pressure relief devices and blow-off valves shall be piped to the exterior of the building.

1.05: continued

**A38.6.4.4** Exhaust piping can be of the flexible type as long as the piping or hose is capable of handling the force of the exhaust. Relief devices include spring-loaded pressure relief valves or rupture disks.

**38.7\* Transfilling.** Filling LPG extraction equipment supply containers shall be in compliance with 69.3.5, 69.4.2, and NFPA 58.

**A38.7** The intent of this section is for filling the working container (i.e., tank) connected to the extraction equipment.

## Chapter 41 Welding, Cutting, and Other Hot Work.

**41.1.1.1 through 41.1.1.1(8)** Add:

**41.1.1.1 Terms.** As used in Chapter 41, the enclosed terms shall have the following meaning assigned to them.

- (1) **Hot Work.** Work involving, burning, welding, or a similar operation that is capable of initiating fires or explosions. [51B:3.3.2]
- (2) **Hot Work Operator.** A qualified person and if required, shall be certified pursuant to the provisions of this chapter and standards referenced in this chapter.
- (3) **Qualified Person.** A person who has successfully completed the training criteria pursuant to Section 41.7.
- (4) **Management.** For the purpose of hot work, all persons, including owners, contractors, educators, and so on, who are responsible for hot work operations. [51B:3.3.2]
- (5) **Permissible Areas.**
  - (a) **Designated Area.** A specific location designed and approved for hot work operations that is maintained fire-safe, such as a maintenance shop or a detached outside location, that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas. [51B:3.3.3.1]
  - (b) **Permit-required Area.** Any location other than a designated area that is approved for hot work and is made fire-safe by removing or protecting combustibles from ignition sources. [51B:3.3.3.2]
- (6) **Permit.** For the purposes of hot work, a document issued, by the AHJ, to a qualified person as defined in Section 41.1.1.1(3) for the purpose of authorizing that individual to carry out the activity of hot work.
- (7) **Permit Authorizing Individual (PAI).** An individual designated by management to authorize hot work. [51B:3.3.5\*]
- (8) **Welding and Allied Processes.** Processes such as arc welding, oxy-fuel gas welding, open-flame soldering, brazing, thermal spraying, oxygen cutting, and arc cutting. [51B, 3.3.6\*]

**41.1.5.3** Add:

**41.1.5.3 Hot Work Permit.** Hot work permits, where required shall comply with Section 1.12 and Chapter 41.

**41.2.1.8 through 41.2.1.10** Add:

**41.2.1.8** Management shall ensure that the contractor has evidence of financial responsibility, which can take the form of an insurance certificate or other document attesting to coverage or responsibility, a copy and an education certification of completion shall be submitted to the AHJ when requested.

**41.2.1.9** Management shall assure that welders and their supervisors are trained in the safe operation of their equipment, the safe use of the process, and emergency procedures and maintain education certificates of completion on file and if requested submit to the AHJ.

**41.2.1.10** Management or designated agent shall select contractors to perform welding who provide trained and qualified personnel, and who have an awareness of the risks involved. [ANSI Z49, 2012]

1.05: continued

**41.2.2** Replace with the following:

**41.2.2 Permit Authorizing Individual (PAI).** In conjunction with management and in consultation with the AHJ if required, the PAI shall be responsible for the safe operation of hot work activities.

**41.2.3(4)** Add:

(4) The hot work operator shall be permitted to be the PAI, however, in those cases, the hot works operator shall not be permitted to issue a hot work permit for the work to be performed by himself, *see* the provisions of Section 41.4(1) or 41.4(2).

**41.2.4.8 through 41.2.4.8.1** Add:

**41.2.4.8** A fire watch, when required, shall be maintained for at least ½ hour after completion of hot work operations in order to detect and extinguish smoldering fires. The duration of the fire watch shall be permitted to be extended if the PAI or the AHJ determines the fire hazards warrant the extension.

**41.2.4.8.1** More than one fire watch shall be required if determined by the AHJ that combustible materials could be ignited by the hot work operation which cannot be directly observed by the initial fire watch.

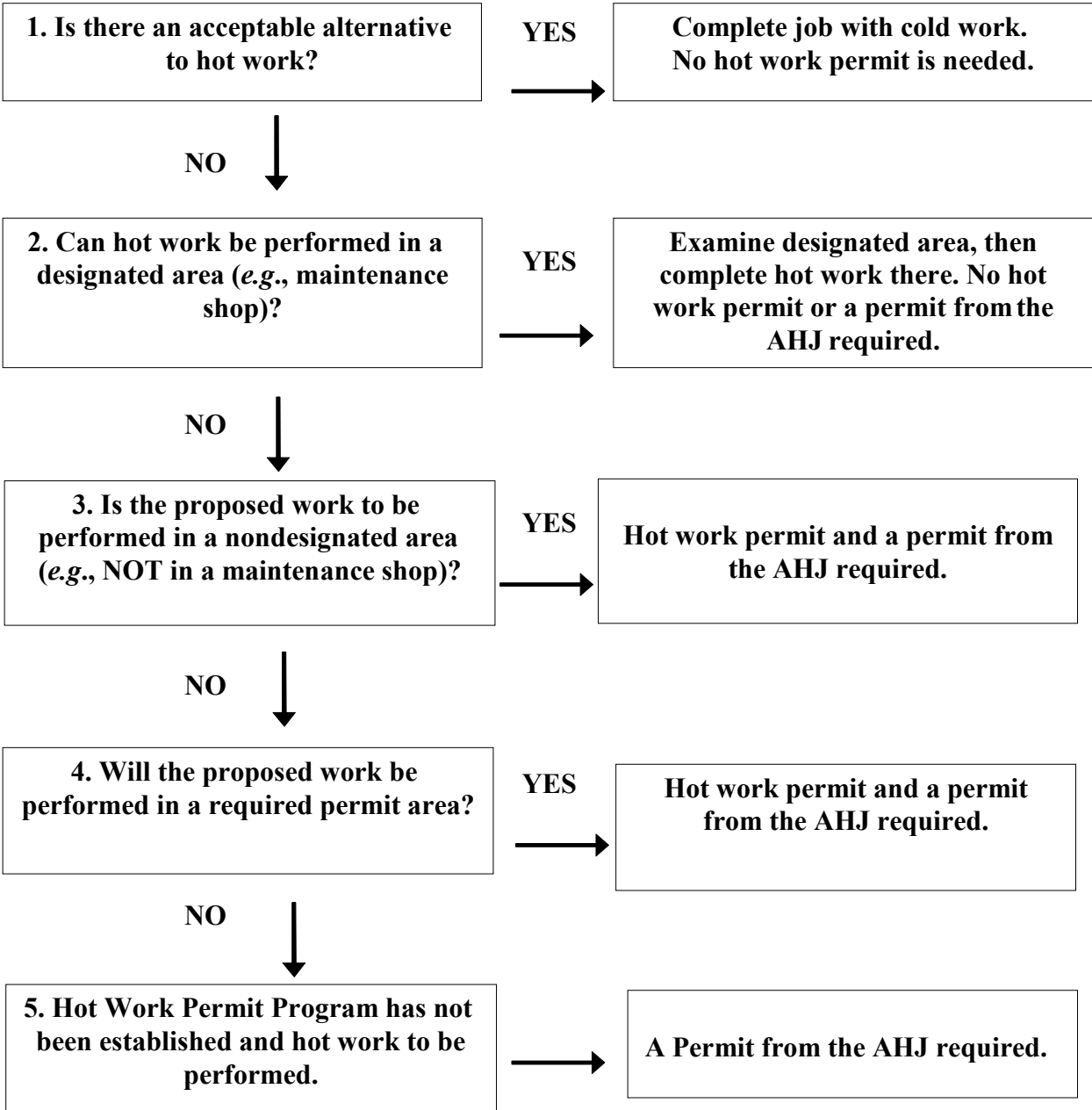
**41.2.5.1** Add:

**41.2.5.1 Certificates.** A hot work training certificate shall be carried on person at all times, and shall be produced upon request.

1.05: continued

**41.3.4.1.1 Add:**  
**41.3.4.1.1** The decision tree in Figure 41.3.4.1.1 shall be permitted to be used to determine if a hot work permit is necessary.

**Figure 41.3.4.1.1 Hot Work Permit Decision Tree**



**41.3.4.1.1.1 Add:**  
**41.3.4.1.1.1** A Hot Work Permit shall be used when hot work is to be carried out in a Permitted Required Area.



1.05: continued

#### 41.3.4.1.1.1 Sample Hot Work Permit.

# HOT WORK PERMIT

**Seek an alternative/safer method if possible!**

Before initiating hot work, ensure precautions are in place as required by NFPA 51B and ANSI Z49.1.  
Make sure an appropriate fire extinguisher is readily available.

This Hot Work Permit is required for any operation involving open flame or producing heat and/or sparks. This work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

Date _____	Hot work by <input type="checkbox"/> employee <input type="checkbox"/> contractor
Location/Building and floor _____ _____	Name (print) and signature of person doing hot work _____
Work to be done _____ _____	I verify that the above location has been examined, the precautions marked on the checklist below have been taken, and permission is granted for this work.
Time started _____ Time completed _____	Name (print) and signature of permit-authorizing individual (PAI) _____
<b>THIS PERMIT IS GOOD FOR ONE DAY ONLY</b>	

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☐ Available sprinklers, hose streams, and extinguishers are in service and operable.

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☐ Hot work equipment is in good working condition in accordance with manufacturer's specifications.

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☐ Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic.

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**Requirements within 35 ft (11 m) of hot work**

☐ Flammable liquid, dust, lint, and oily deposits removed.

☐ Explosive atmosphere in area eliminated.

☐ Floors swept clean and trash removed.

☐ Combustible floors wet down or covered with damp sand or fire-resistive/noncombustible materials or equivalent.

☐ Personnel protected from electrical shock when floors are wet.

☐ Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.

☐ All wall and floor openings covered.

☐ Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down.

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**Requirements for hot work on walls, ceilings, or roofs**

☐ Construction is noncombustible and without combustible coverings or insulation.

☐ Combustible material on other side of walls, ceilings, or roofs is moved away.

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**Requirements for hot work on enclosed equipment**

☐ Enclosed equipment is cleaned of all combustibles.

☐ Containers are purged of flammable liquid/vapor.

☐ Pressurized vessels, piping, and equipment removed from service, isolated, and vented.

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**Requirements for hot work fire watch and fire monitoring**

☐ Fire watch is provided during and for a minimum of 30 min. after hot work, including any break activity.

☐ Fire watch is provided with suitable extinguishers and, where practical, a charged small hose.

☐ Fire watch is trained in use of equipment and in sounding alarm.

☐ Fire watch can be required in adjoining areas, above and below.

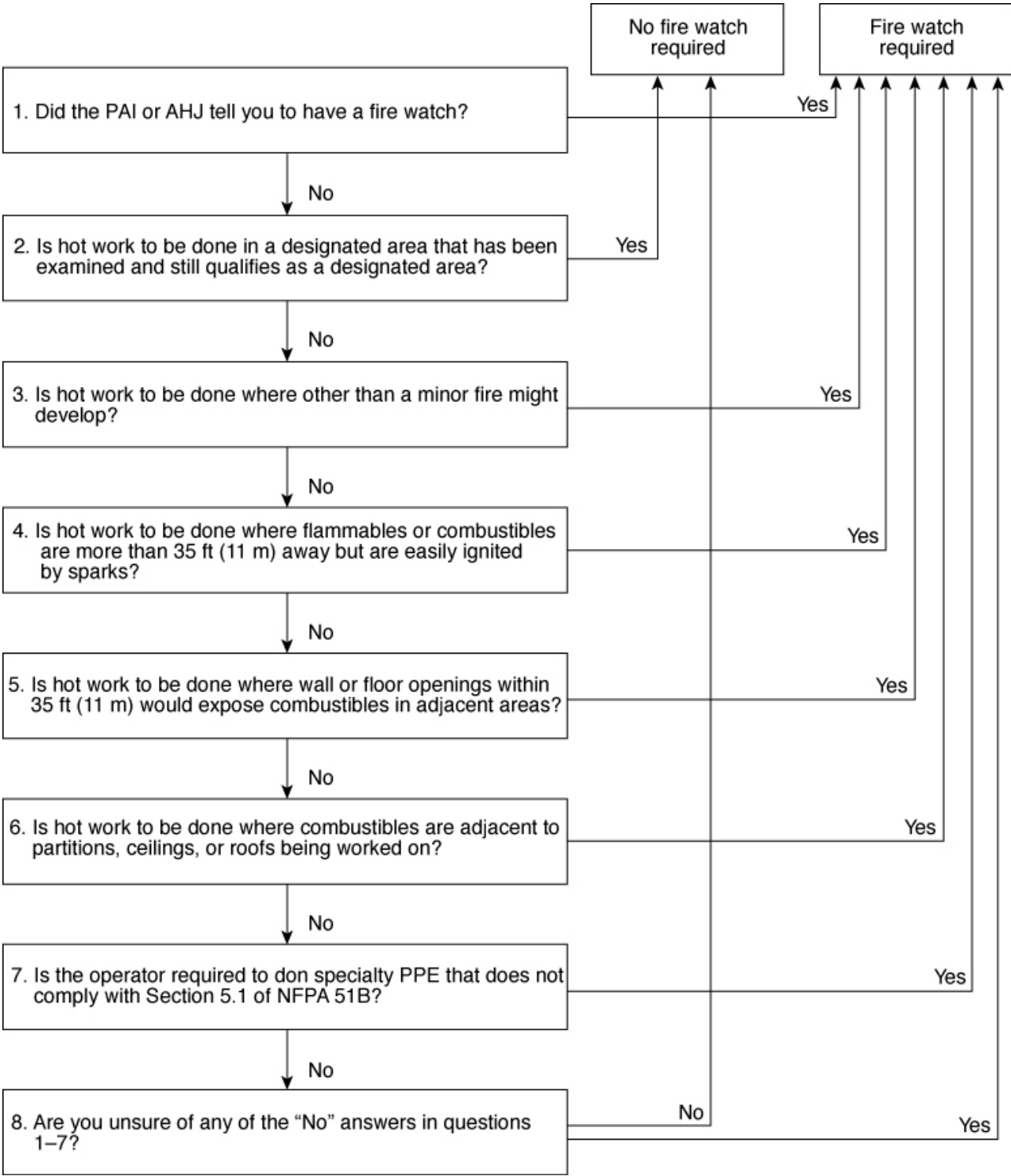
☐ Yes ☐ No Per the PAI/fire watch, monitoring of hot work area has been extended beyond the 30 min.

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1.05: continued

- 41.3.4.2 Replace with the following:  
41.3.4.2 Before a hot work permit is issued the following conditions shall be verified by the PAI, and with the AHJ if required:
- 41.3.4.3 Replace with the following:  
41.3.4.3 The PAI in consultation with the AHJ, if required shall determine the length of the period for which the hot work permit is valid.
- 41.3.5.1\* Replace with the following:  
41.3.5.1 A fire watch shall be required by the PAI in consultation with the AHJ, when hot work is performed in a location where other than a minor fire might develop or where the following conditions exist:
- 41.3.5.1.1 Add:  
41.3.5.1.1 Table 41.3.5.1.1 entitled Fire Watch Tree shall be permitted to be used by the PAI and AHJ to determine if a fire watch is necessary.

Table 41.3.5.1.1 Fire Watch Decision Tree



1.05: continued

#### **41.4 Sole Proprietors and Individual Operators.**

**41.4.1** All hot work operations shall require a permit from the Head of the Fire Department unless specifically otherwise allowed by 41.4.1(1) through (3):

**41.4(1) through 41.4(3) Add:**

(1) **Hot Work Operations Conducted by Persons Licensed by Other Jurisdictions.** Pursuant to Section 1.1.2, a hot work permit shall not be required from the fire department when the hot work activity is performed by a person, or under the direct supervision of a person, licensed and permitted pursuant to a specialized code as defined in M.G.L. c. 143, § 96. Any licensed person performing hot work must have obtained training for hot work safety either:

(a) by obtaining training approved by the authority issuing them a license to perform specialized code work; or

(b) by meeting the requirements of Section 41.7 of Chapter 41.

(2) **Hot Work Operations Conducted by Persons on Their Own Equipment on Their Own Premises.** A permit from the Head of the Fire Department for hot works shall not be required by individuals who conduct hot work operations on their own equipment on their own premises. Any person performing such hot work shall be trained as provided by 41.7 of Chapter 41.

(3) **Homeowners and Hobbyists.** Homeowners and hobbyists are exempt from the permit requirements as provided by 1.12, and the training requirements required in 41.7 of Chapter 41. *See* exhibitions 41.5.

**41.4.1\*** Replace with the following:

**41.4.1 Assignment of PAI and Fire Watch.** Sole proprietors and individual operators as provided in Sections 41.4(1) and (2) shall be permitted to serve as PAI, fire watch and operator.

**41.4.2 Assignment of PAI and Fire Watch.** Sole proprietors and individual operators as provided in 41.4.1(1) and (2) shall be permitted to serve as PAI, fire watch and operator.

**41.4.3 Written Hot Work Permit.** A checklist shall be permitted to serve as the written hot work permit.

**41.5.4.4 Add:**

**41.5.4.4 Inspection by the AHJ.**

**41.5.4.4.1 through 41.5.4.4.2 Add:**

**41.5.4.4.1** The AHJ shall be permitted to require annual inspection for designated areas.

**41.5.4.4.2** The AHJ shall be permitted to inspect a premise for compliance before any hot work is carried out.

**41.7 Add:**

**41.7 Qualifications.** An individual to be qualified to be a PAI, perform fire watches, perform, supervise or delegate any activities of hot work as defined in this chapter shall first provide documentation that he or she has successfully completed training approved by the State Fire Marshal in the following areas:

(1) 527 CMR 1.00: *Massachusetts Comprehensive Fire Safety Code*, Chapter 41: *Hot Work Operations*;

(2) 29 CFR 1910.252 Subpart Q: *Welding, Cutting and Brazing*;

(3) NFPA 51B: *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*;

(4) NFPA 241: *Standard for Safeguarding Construction, Alteration, and Demolition Operations*;

(5) ANSI Z49: *Safety in Welding, Cutting, and Allied Processes*.

**41.7.1** Successfully completed as used here means training successfully completed on the currently adopted standard as provided in 41.7(1) through (5).

**41.7.2** A certificate of completion shall be issued to the individual with the date of completion on the certificate and a providers/instructors signature acknowledging such individual attended and completed the training as provided in 41.7(1) through (5).

1.05: continued

## Chapter 42 Refueling.

**42.1** Replace with the following:

**42.1 General.** Chapter 42 shall apply to refueling of automotive vehicles and marine vessels. It shall not be applied to the transportation of fuel gases over the highways in interstate commerce or vehicles complying with Federal Motor Vehicle Safety Standards.

**42.1.1** through **42.1.1.2** Add:

**42.1.1 Terms.** As used in Chapter 42, the enclosed terms shall have the following meaning assigned to them.

**42.1.1.1 Point of Delivery.** The outlet of the service meter assembly or the outlet of the service regulator or the crash valve or service shut off valve where no meter is provided.

**42.1.1.2 Certificates.** Certificates, where required, shall comply with Section 1.12.8.51 and Section 1.13, as applicable.

**42.2.2.3** Add:

**42.2.2.3** This Chapter shall apply to the transportation of Class II and Class IIIA combustible liquids, by Massachusetts registered motor vehicles in cargo tanks, portable tanks and transfer tanks by transport vehicles and flammable liquids in non-bulk packagings.

**42.2.2.4** Add:

**42.2.2.4** The intent of this Chapter is to protect the public safety and welfare from the danger of fire due to tank or container leakage of flammable or combustible liquids and is in addition to the requirements of the U.S. Department of Transportation, (DOT) Title 49 CFR.

**42.3.3.1** Replace with the following:

**42.3.3.1 Underground Tanks.** Underground storage tanks shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and meet all applicable requirements of NFPA 30, Chapters 21: *Storage of Liquids in Tanks - Requirements for All Storage Tanks* and 23: *Storage of Liquids in Tanks - Underground Tanks*.

**42.3.3.8** Replace with the following:

**42.3.3.8 Corrosion Control.** Any portion of a tank or its piping that is in contact with the soil shall have properly engineered, installed, and maintained corrosion protection in accordance with the American Petroleum Institute, the American Society of Mechanical Engineers, or Underwriters Laboratories Inc. If corrosion is anticipated beyond the applicable design formulas or standards, metal thickness or approved protective coating or liners shall be provided to compensate for corrosion loss expected during the design life of the tank. If requested by the AHJ, an engineering analysis shall be permitted required to assure compliance.

**42.5.3.4.1** through **42.5.3.4.1(2)** Add:

**42.5.3.4.1** Dispensing devices shall:

- (1) Be rigidly mounted;
- (2) Be protected from vehicle damage by at least one of the following:

The dispensing device shall be mounted on a concrete platform at least six inches in height. Vertical barriers shall be installed at the ends of pumps.

**42.5.3.6.3** Replace with the following:

**42.5.3.6.3 Maintenance.** At least annually or when maintenance to dispensing devices is necessary and such maintenance is capable of causing accidental release or ignition of liquid, the following precautions shall be taken before such maintenance is begun:

**42.7.2.1\*** Delete.

1.05: continued

**42.7.2.4.3 Add:**

**42.7.2.4.3** No gasoline shall be handled outside of storage tanks or portable gasoline tanks except in approved safety cans or approved metal or plastic containers, and they shall be kept tightly closed except when in use. Containers used for the handling and storage of gasoline in garages shall have a total quantity not to exceed 12 gallons.

**42.7.2.5.3 Replace with the following:**

**42.7.2.5.3 Fire Suppression Systems.** For attended self-serve facilities, automatic fire suppression systems shall be installed in accordance with the appropriate NFPA standard, manufacturers' instructions, and the listing requirements of the systems.

**42.7.4.5 through 42.7.4.5(2)(b) Add:**

**42.7.4.5** The dispensing of motor fuel by means of self-service automated dispensing systems shall be permitted, provided that the applicant for such a system has submitted complete plans and specifications of the proposed installation to the State Fire Marshal, accompanied by the required examination fee as authorized in M.G.L. c. 7, § 3B and has obtained approval of such plans, and further provided that there is compliance with the following:

- (1) Attended Self-service Motor Fuel Dispensing Facility may be allowed provided that:
  - (a) The service station is under the control of the owner, operator, or duly authorized employee who shall be on duty at all times while motor fuel is being sold or dispensed.
  - (b) The motor fuel shall be dispensed only by a competent licensed motor vehicle operator or by the service station attendant.
  - (c) Approved signs bearing the wording "Extinguish All Smoking Materials" and "Stop Engine While Refueling" shall be conspicuously posted at both ends of the pump dispensing island visible to approaching vehicles. All approved signs required shall consist of block letters not less than two inches in height and be either red letters on a white background or white letters on a red background.
  - (d) The controlling mechanism console providing power to the pump motor is in constant attendance by the owner, operator or duly authorized employee at all times while motor fuel is being dispensed and is properly protected against physical damage from motor vehicles. Constant attendance shall mean that the console operator must be at the console during its operation.
  - (e) There is constant contact between the controlling mechanism console operator and the pump island by means of an intercommunication system which shall be maintained in proper operating condition at all times while motor fuel is being dispensed.
  - (f) A means is provided for the controlling mechanism console operator to observe the filling operation at each vehicle, and the dispensing of motor fuel shall be continuously observed by the console operator during the time that any of the pumps have been activated to dispense motor fuel.
  - (g) The controlling mechanism console includes a disconnect switch which will instantly cut off all pumping power to all motor fuel pumps at the service station.
  - (h) The controlling mechanism console, switches and related equipment are of a design and type listed for use with the dispensing devices.
  - (i) Any person, firm, or corporation constructing a self-service facility or making changes or alterations, in the method of dispensing motor fuel, or to the pre-engineered fixed fire extinguishing system(s) other than normal maintenance, or to the self-service dispensing island arrangement(s) resulting in a change of hazard area protection, or environmental changes resulting in the inability of a console operator to constantly observe the fuel dispensing operation, shall notify the Head of the Fire Department, in writing, prior to submitting plans to the State Fire Marshal.
  - (j) Self-service automated motor fuel dispensing systems shall be equipped with an overhead fixed fire extinguishing system of a type approved by the State Fire Marshal, details of which shall be included with plans submitted to the State Fire Marshal for approval.
  - (k) The use of automatic credit card reading devices as a means of payment at the pump island shall be allowed provided that:
    1. Each sale shall be individually authorized by the self-serve attendant;



1.05: continued

2. The automatic credit card reading device shall not be used as physical authorization for the dispensing of motor fuel; and
  3. The automatic credit card reading devices are included on plans submitted to and approved by the State Fire Marshal.
- (2) Split island facilities shall be permitted provided that:
- (a) There shall be installed on the full service islands an additional switch which will activate the overhead fire extinguishing system, and deactivate power to the self-service island dispensing pumps.
  - (b) Whenever the self-service dispensing mechanism is in operation, the service station operator shall be within visual range of the filling operation by either being at the controlling mechanism console or at the full service pump island within 25 feet of the switch.

**42.7.5 through 42.7.5.6\*** Delete.

**42.7.6.3** Replace with the following:

**42.7.6.3** The dispensing hose shall not exceed 150 ft. (46 m) in length.

**42.9.1.2(4)** Add:

- (4) Foreign vessels regulated under Title 33 CFR 155 and U.S. and foreign public vessels, *i.e.*, warships, naval auxiliaries or other ships owned and operated by a country when engaged in noncommercial service.

**42.9.3.6 through 42.9.3.6.5 (9)** Add:

**42.9.3.6 Wharf of a Marine Fueling Facility.**

**42.9.3.6.1** Any wharf of a Marine Fueling Facility shall be equipped with only listed and labeled control valves and devices.

**42.9.3.6.2** Authorized Fueling Facility System Operators shall be aware of the location of all such shut-off control devices.

**42.9.3.6.3** The use of additional shut-off control valves in excess of the required minimum shall be permitted to facilitate fuel system servicing and to control fuel flow during both normal and emergency operation.

**42.9.3.6.4** Cast iron valves or fittings shall not be used in any pipe connection located between the tank and dispensing nozzle.

**42.9.3.6.5** Items (1), (2) (3) and (5) shall be required for all fixed facilities. Items (4), and (6) shall be permitted on a site specific basis.

- (1) Dispensing Nozzle shall be approved.
- (2) Dispenser Shut-off.
  - (a) All dispensers shall be provided with an approved shut-off valve at the fuel-dispensing unit.
  - (b) This valve shall be permitted to be the dispenser unit shut-off.
- (3) Manual Electrical Emergency Fuel Shut-off Pull Stations shall be U.L. listed; and
  - (a) shall be provided to disrupt power to all dispensers and fuel storage tank discharge pump(s).
  - (b) These Pull Stations shall be located within 25 ft. of any metering unit; and shall be located to be in the path of exit travel.
  - (c) Additional pull station shall be provided as required by the Head of the Fire Department or the State Fire Marshal.
  - (d) Pull stations shall not be located on gangways.
  - (e) All pull stations shall be marked “EMERGENCY FUEL SHUT-OFF” in two inch red block capital letters; and shall be accessible at all times.
- (4) Fuel piping systems to floats shall be provided with a readily accessible approved shut off valve on the fixed pier (or land if applicable) within 15 ft. of the flexible connector from the pier (or land) to the float.

Said shut-off controls shall be marked “EMERGENCY FUEL SHUT-OFF” in two inch red block capital letters; and shall be accessible at all times.
- (5) Fuel piping systems on fixed piers shall be provided with a readily accessible shut-off valve on the pier within four feet of the flexible connector to the land and on the land within 15 ft. of the pier.

1.05: continued

Shut-off controls shall be marked “EMERGENCY FUEL SHUT OFF” in two inch red block capital letters and shall be accessible at all times.

(6) Emergency shut-off valves, incorporating a fusible link or other approved thermally actuated device designed to close automatically in event of fire exposure or severe impact, shall be installed in accordance with the manufacturer’s instructions in the flammable or combustible liquid supply line.

(a) The shut-off valve shall be located at the base of each individual dispenser or at the inlet to the overhead dispenser.

(b) The automatic closing feature of excess flow valves shall be tested at least once per month by manually tripping the hold open device.

(c) The valves shall be readily accessible; and

1. shall employ cover or similar means located on the shore side of the wharf; and

2. shall be so marked by two inch red block capital letters.

(7) Divisional valves shall be installed on the marine wharf so that the maximum length of the piping system is 300 ft. between divisional valves.

(a) Divisional valves shall be marked by two inch red block capital letters.

(b) Each valve shall be clearly identified, by marking with a permanent plate or tag indicating its system function.

(8) At marine fueling facilities where tanks are at an elevation which produces a gravity head on the dispensing unit, the tank outlet shall be equipped with a device, such as a solenoid valve, positioned adjacent to, and downstream, so installed and adjusted that liquid cannot flow by gravity from the tank in case of piping or hose failure when the dispenser is not in use.

(9) Shut-off and check valves shall be equipped with a pressure-relieving device that will relieve any pressure generated by thermal expansion of the contained liquid back to the storage tank.

**42.9.3.7 Add:**

**42.9.3.7** Shut-off and check valves shall be equipped with a pressure-relieving device that will relieve any pressure generated by thermal expansion of the contained liquid back to the storage tank.

**42.9.3.8 Add:**

**42.9.3.8** Marine piping systems shall contain a sufficient number of approved valves to control the flow of flammable or combustible liquid during normal operations and to provide adequate shut-off protection in the event of fire or physical damage.

**42.9.4.1.1 Add:**

**42.9.4.1.1** Said hose shall be a rubber like material resistant to petroleum products and petroleum product, containing a continuous static ground, not exceeding 30 feet in length. Where hose length at a marine fueling facility exceeds 30 feet, the hose shall be secured by a hose retrieving mechanism so as to protect it from damage.

**42.9.4.8 through 42.4.8.2 Add:**

**42.9.4.8** If a remote pumping system is used, a labeled or listed rigidly anchored emergency shut-off valve incorporating a fusible link or other thermally actuated device, designed to close automatically in event of fire exposure or severe impact, shall be installed in accordance with the manufacturer's instructions in the flammable or combustible liquid supply line at the base of each individual dispenser or at the inlet of each overhead dispenser.

**42.9.4.8.1** The automatic closing feature of this valve shall be checked at least once a month by manually tripping the hold-open linkage.

**42.9.4.8.2** An emergency shut-off valve incorporating a slip-joint feature shall not be used.

## 1.05: continued

**42.9.4.9 Add:**

**42.9.4.9** The fueling facility shall be located so as to minimize exposure to all other operational marina or pleasure boat berthing area facilities. Where tide and weather conditions permit, all flammable and combustible liquid fuel handling shall be outside the main berthing area. Inside marina or pleasure boat berthing area, fueling facilities shall be so located that in case of fire aboard a boat alongside, the danger to other boats near the facility will be minimal. No vessel or craft shall be made fast to or berthed at any marine wharf, except during fueling operations, and no vessel or craft shall be made fast to any other vessel or craft occupying a berth at a marine wharf, or other fueling facility.

**42.9.4.10 Add:**

**42.9.4.10** Fueling of floating marine craft at other than a fueling facility is prohibited, except by prior written authorization by the AHJ.

**42.9.7.4 through 42.9.7.4.1 Add:**

**42.9.7.4** All marine fueling facilities shall provide roadways to provide for adequate access for emergency vehicles, including fire apparatus to within 150 feet (45 m) or less travel distance to the shore end of the marine wharf.

**42.9.7.4.1** When approved by the Head of the Fire Department, a manual standpipe system shall be permitted to be installed along marine wharfs when conditions are such that providing fire department access roads to within 150 feet (45 m) of the shore end of the marine wharf is not practical.

**42.9.7.5 through 42.9.7.5.3 Add:**

**42.9.7.5** A manual standpipe system shall be installed at all fueling wharfs where the travel distance from the closest point of access for the fire department apparatus to the most remote accessible portion of the marine wharf exceeds 150 feet (45 m).

**42.9.7.5.1** The type and location of standpipe systems and standpipe outlets shall be approved by the Head of the Fire Department, but in no case shall they be more than 150 feet (45 m) of travel distance apart, and no more than 150 feet (45 m), travel distance from a dead end.

**42.9.7.5.2** The fire department pumper can be considered as a standpipe system discharge point if it is within 150 feet (45 m) of the shore end of the marine wharf.

**42.9.7.5.3** The standpipe piping shall be no less than three inches (76.2 mm) inside nominal diameter and sized to provide a minimum of 500 gpm (1893L/min) at 100 psi outlet pressure at the hydraulically most remote outlet with an outlet.

**42.9.7.6 through 42.9.7.6.3 Add:**

**42.9.7.6** Hydrants shall be provided on marine fueling facility wharfs where fire apparatus is expected to drive onto the wharf to protect a fueling facility.

**42.9.7.6.1** The hydrants shall be installed, tested and maintained in accordance with NFPA 307: *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves* in locations approved by the Head of the Fire Department.

**42.9.7.6.2** In a hydrant shall be within 100 feet (30.48 m) of the required standpipe connection.

**42.9.7.6.3** If available, the type and capacity of the water supply system for the fire hydrants shall be sufficient to deliver adequate water and water pressure as determined by the Head of the Fire Department, who shall take into consideration the relative fire hazard, the property involved, the availability of marine firefighting equipment, and the time frame that the water supply volume will be required to be maintained.

**42.9.8.4 Add:**

**42.9.8.4** No cargo tank, portable tank or transfer tank shall be mounted in the bed or body of any vehicle which contains a hoist to raise such bed or body.

**42.9.9.9 Add:**

**42.9.9.9** Any flammable or combustible liquid transported by other than cargo tank, portable tank or transfer tank shall be transported in listed containers, with all openings tightly closed, and in an upright and secured position.

1.05: continued

**42.9.10.1(5)** Add:

(5) In the event of a leak, rupture, spill, overflow or other incident involving the handling of flammable or combustible liquids, at the fuel facility, both the Fire Department and the State Fire Marshal shall be notified immediately by the fueling operations supervisor or the permit holder.

**42.10** through **42.10.5.22** Delete.

**42.11.1** Delete.

**42.11.1.1.1** Replace with the following:

**42.11.1.1.1** Section 42.11 shall apply to the design, installation, operation, appliance and maintenance of gaseous fuels and for fueling vehicle (dispensing) systems, equipment and associated storage, including vehicle fueling (dispensing) systems. Such installation, operation, appliance, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained in accordance with *Building Code* and the approved design documents.

**42.11.1.1.2** through **42.11.1.1.5** Delete.

**42.11.1.1.9** Add:

**42.11.1.1.9 Marker Plate, Sign.** Any liquefied gaseous system container or cylinder installation shall be provided with a marker plate or sign indicating the name and telephone number of the supplier, facility maintenance person, owner, or operator responsible for responding to the permitted location in the event of an emergency.

**42.12.1** through **42.12.11** Add:

**42.12.1 Fuel Vessels and Barges.**

**42.12.2** No fuel barge or fuel vessel shall be permitted to anchor or moor for fueling purposes within a marina or pleasure boat berthing area.

**42.12.3** A 200 ft. (60.96 m) radius marine fueling safety zone shall be maintained between the fuel barge, or fuel vessel acting as a fueling facility, and any marina or pleasure boat berthing area.

**42.12.4** This 200 ft. (60.96 m) radius marine fueling safety zone if required, shall be subject to written review by the Head of the Fire Department in specific instances.

**42.12.5** The State Fire Marshal shall approve the marine fueling safety zone written review.

**42.12.6** Fuel barges and fuel vessels shall be subject to assignment as to location by the harbor master in accordance with the authority vested in him by M.G.L. c. 102. When located on waters where no harbor master is provided, such assignment shall be made by the State Fire Marshal. The State Fire Marshal shall approve the permanent assignment of fuel barges and fuel vessels.

**42.12.7** Fuel barges, fuel vessels, and fueling facilities shall be open to inspection by the AHJ or a harbor master having jurisdiction.

**42.12.8** Flammable and combustible liquids kept for resale on fuel barges or fuel vessels shall be stored in metal tanks. Such tanks shall be constructed, braced and secured so as to prevent injury, rupture or displacement and to withstand the normal stresses to which they may be subjected. Tanks constructed in accordance with 46 CFR Part 30 through 40, Subchapter D - *Tank Vessels*, will be considered as complying with the requirements of this chapter.

**42.12.9** Every fuel barge or fuel vessel used for the keeping of flammable or combustible liquids for resale and every fuel barge or fuel vessel used for the transportation of flammable or combustible liquids, shall be identified by a name marked in clearly legible letters not less than four inches in height on some clearly visible exterior part of the port and starboard bow and the stern of that fuel barge or fuel vessel.

**42.12.10** Fuel barges and fuel vessels which, in the opinion of the Head of the Fire Department or the State Fire Marshal, pose a substantial fire hazard due to the cargo they are carrying or the location they are moored shall rig fire warps. Fire warps shall consist of haulers of sufficient size to take the barge or vessel under tow in the event of an emergency. Fire warps shall be secured to the deck of the barge or vessel and shall hang over the outboard side to within six feet of the surface of the water. An eye shall be spliced into the outboard end of the warp of sufficient size to permit the rapid attachment of a towing shackle.

1.05: continued

**42.12.11** Every fuel barge, fuel vessel, or fueling facility used for the keeping of flammable or combustible liquids for resale shall be provided with such fire extinguishing appliances as required by Section 13.6.

**42.13** Add:

**42.13 Containers and Movable Tanks.**

**42.13.1** through **42.13.4** Add:

**42.13.1** The temporary use of movable tanks in conjunction with the dispensing of liquids into the fuel tanks of marine craft shall be permitted. Such use shall only be made with the approval of the AHJ.

**42.13.2** Class I or Class II liquids shall not be dispensed into a portable container, unless the container is constructed of metal or is listed for its use, has a tight closure, and is fitted with a spout or is so designed that the contents can be dispensed without spilling.

**42.13.3** Portable containers of 12 gal. (45 L) capacities or less shall not be filled while they are in or on a marine craft.

**42.13.4** Smoking is prohibited on any fuel barge or fuel vessel used for the keeping of flammable or combustible liquids for resale and on any fuel barge or fuel vessel used for the transportation, storage or delivery of flammable or combustible liquids.

**42.14.1** Add:

**42.14.1** All electrical components shall be installed and used in accordance with the *Massachusetts Electrical Code*.

**42.14.2** Add:

**42.14.2** Clearly identified emergency switches, readily accessible in case of fire or physical damage at any dispensing unit, shall be provided on each marine wharf so interlocked as to shut off power to all pump motors from any individual location and to reset only from the master switch at the main electrical disconnect panel. Each such switch is to be identified by an approved sign stating "EMERGENCY PUMP SHUT-OFF" in two inch red block capital letters.

**42.14.3** Add:

**42.14.3** A readily accessible valve to shut off the liquid supply from shore shall be provided in each pipeline, at or near the approach to the pier and at the shore end of each marine pipeline adjacent to the point where each flexible hose is attached. Each valve shall be marked "EMERGENCY FUEL SHUT-OFF" in two inch red block capital letters.

**42.15** Add:

**42.15 Transportation by Transfer Tanks.**

**42.15.1** Add:

**42.15.1** Vehicles other than approved tank vehicles shall be permitted to transport combustible liquids in transfer tanks, provided that an application has been made in accordance with this *Code*.

**42.15.2** through **42.15.2(5)** Add:

**42.15.2** The vehicle shall be approved for the transportation of the combustible liquid provided that:

- (1) The tank is securely mounted to the vehicle body or truck bed and its capacity does not exceed 119 gallons;
- (2) The tank shall be constructed of not less than 14 USS gauge standard open hearth steel tank plate or  $\frac{3}{16}$  inch aluminum and otherwise constructed to withstand any stress to which it may reasonably be subjected;
- (3) The liquid is drawn only from the top of the tank by means of a suitable pump to which is attached a durable hose equipped with a self-closing nozzle;
- (4) All openings in the tank are secured by plugs or caps maintained wrench tight while the vehicle is in transit; and
- (5) The vehicle is equipped with a fire extinguisher in accordance with Section 13.6.

**42.15.3** Add:

**42.15.3** Any flammable or combustible liquid transported by other than cargo tank, portable tank or transfer tank shall be transported in listed and labeled containers, with all openings tightly closed, and in an upright and secured position.



1.05: continued

**42.15.4 Add:**

**42.15.4** No person shall transport by cargo tank or transport vehicle, any combustible liquid within the Commonwealth, unless such liquid is transported in accordance with the requirements of this Chapter. No person shall transport by cargo tank or transport vehicle, any flammable liquid unless such liquid is transported in accordance with U.S. DOT, Title 49 CFR.

**42.16 On-demand Mobile Fueling.**

**42.16.1\* Scope.** Section 42.16 shall apply to the retail practice of fueling motor vehicles of the general public while the owner's vehicle is parked and might be unattended.

**A.42.16.1** This section addresses mobile refueling activities governed by NFPA 30A. Other local, state, and federal requirements might be applicable.

**42.16.1.1** Section 42.16 shall not apply to the following:

- (1) Refueling from tank vehicles at commercial, industrial, governmental, or manufacturing establishments in accordance with 42.7.6
- (2) Fueling from portable containers in cases of an emergency or for personal use.

**42.16.1.2** The dispensing of Class I and Class II liquids from a mobile fueling vehicle or metal safety cans into the fuel tank of a motor vehicle shall be permitted only if all of the requirements of Sections 14.2 through 14.4 of NFPA 30A have been met.

**42.16.1.3 Permits.** Permits, where required, shall comply with Section 1.12.

**42.16.1.4 Certificates.** Certificates, where required, shall comply with Section 1.13.

**42.16.2 Approvals and Mobile Fueling Locations.**

**42.16.2.1** Mobile fueling operations shall not be conducted unless approved by the AHJ and the owner of the property on which the fueling will occur. Mobile fueling operations shall occur only at approved locations.

**42.16.2.2\*** The AHJ shall be permitted to require a site specific safety and emergency response plan for locations where mobile fueling is authorized. Where required, the safety and emergency response plan shall be available on each mobile fueling vehicle.

**A.42.16.2.2** The safety and emergency response plan is intended to be completed, maintained, and updated by the mobile fueling operator to help ensure that fueling operations are conducted in a safe manner that is acceptable to the AHJ. Such a plan might include some or all of the following elements:

1. Written safety and emergency response plan that establishes policies and procedures for fire safety, spill prevention and control, personnel training, and compliance with other applicable requirements of this Code.
2. Where required by the AHJ, a site plan for each location at which mobile fueling occurs. The site plan should be in sufficient detail to indicate all buildings, structures, lot lines, property lines, and appurtenances on site and their use or function; all uses adjacent to the lot lines of the site; fueling locations, the locations of all storm drain openings, and adjacent waterways or wetlands; information regarding slope, natural drainage, curbing, impounding, and how a spill will be retained upon the site property; and the scale of the site plan.
3. If the AHJ does not require site plans of approved fueling locations, the safety and emergency response plan should include guidelines for locations within the jurisdiction where mobile fueling can and cannot be provided, such as on residential streets, on school grounds, and so on.

**42.16.2.3\*** Mobile fueling vehicle operators shall possess evidence of training on proper fueling procedures and the safety and emergency response plan.

**A.42.16.2.3** In addition to any other training, education, and certifications that might be required by federal regulations and HAZCOM, the operator should also be trained on the requirements of this Code.

**42.16.2.3.1** The mobile fueling vehicle operator training shall be approved by the State Fire Marshal.

1.05: continued

**42.16.2.4** Mobile fueling shall not take place within 7.6 m (25 ft.) of buildings, property lines, or combustible storage. The authority having jurisdiction is authorized to decrease separation distances for mobile fueling from metal safety cans.

**42.16.2.5** An approved storm drain cover or equivalent method that will prevent any fuel from reaching the drain shall be used when mobile fueling occurs within 7.6 m (25 ft.) of a storm drain.

**42.16.2.6** Mobile fueling operations and delivery vehicle parking shall be prohibited in buildings, in covered parking structures, on public streets, and on public ways.

**42.16.3 Mobile Fueling Vehicles and Equipment.**

**42.16.3.1\*** Mobile fueling vehicles shall comply with all applicable local, state, and federal requirements and shall be one of the following:

- (1) A tank vehicle complying with NFPA 385 with chassis-mounted tanks that do not exceed an aggregate capacity of 4542 L (1200 gal.).
- (2) A vehicle with chassis-mounted tanks, each of which does not exceed 415 L (110 gal.), that does not exceed an aggregate capacity of 4542 L (1200 gal.).
- (3) A vehicle that carries a maximum of 227 L (60 gal.) of motor fuel in listed metal safety cans not to exceed 20 L (5.3 gal.) in capacity.

**A.42.16.2.3.1** In addition to the requirements in 42.16.3.1, mobile fueling vehicles should comply with all applicable local, state, and federal requirements, including DOT requirements for vehicles used to transport gasoline and diesel fuel.

**42.16.3.2** Dispensing hose assemblies shall be listed and the hose shall not exceed 15 m (50 ft.) in length. [30A:14.3.2]

**42.16.3.3** A listed breakaway device shall be provided at the nozzle.

**42.16.3.4** Dispensing nozzles shall be a listed, automatic closing-type with a latch-open device.

**42.16.3.5** A listed fuel shut-off switch and a listed shut-off valve assembly shall be provided on the delivery vehicle.

**42.16.3.6** The pump shall be listed to UL 79, *Standard for Power Operated Pumps for Petroleum Dispensing Products*.

**42.16.3.7** The meter shall be listed to UL 25, *Standard for Meters for Flammable and Combustible Liquids and LP-gas*.

**42.16.3.8** Mobile fueling vehicles shall be provided with a fire extinguisher installed, inspected, and maintained as required by NFPA 10, with a minimum rating of 4A-80 B:C.

**42.16.3.9** Mobile fueling vehicles shall be provided with a minimum 18.9 L (5 gal.) spill kit designed to promptly and safely mitigate and dispose of leakage or spills.

**42.16.3.10** NO SMOKING signs shall be prominently displayed on the mobile fueling vehicle.

**42.16.4 Operations.**

**42.16.4.1** Nighttime deliveries shall only be made in areas deemed adequately lighted by the AHJ.

**42.16.4.2** The mobile fueling vehicle flasher lights shall be in operation while dispensing operations are in progress.

**42.16.4.3** Safety cones or barriers shall be employed to protect the vehicle fueling area.

**42.16.4.4** Expansion space shall be left in each motor vehicle fuel tank to prevent overflow in the event of temperature increase.

**42.16.4.5\*** A means for bonding the mobile fueling vehicle to the motor vehicle shall be provided. Such bonding means shall be employed during fueling operations.

**A.42.16.4.5** The listed hose and nozzle assembly provides for bonding. However, where there is a plastic insert that prohibits an electrical/metallic connection with the customer vehicle while filling, then a separate means of bonding is required.

**42.16.4.6** Sources of ignition shall be controlled in accordance with 42.7.2.6.1.

1.05: continued

**42.16.4.7** Mobile fueling vehicles shall be constantly attended during fueling operations.

**42.16.4.8** Mobile fueling vehicles shall not obstruct emergency vehicle access roads.

**42.16.4.9** Mobile fueling vehicles shall be positioned in a manner to preclude traffic from driving over the dispensing hose.

**42.16.4.10 Operations Using Metal Safety Cans.**

**42.16.4.10.1** All metal safety cans shall be listed.

**42.16.4.10.2** Metal safety cans shall be secured to the mobile fueling vehicle, except when in use.

**42.16.4.10.3** The AHJ shall be permitted to require additional measures in the handling of approved metal safety cans for refueling.

## **Chapter 44 Solvent Extraction.**

**Chapter 44** Delete in its entirety

## **Chapter 45 Combustible Fibers.**

**45.5.3.1** Replace with the following:

**45.5.3.1** Quantities exceeding 100 ft.<sup>3</sup> (2.8 m<sup>3</sup>) of loose combustible fibers, but not exceeding 500 ft.<sup>3</sup> (14.2 m<sup>3</sup>), shall be permitted to be stored in rooms or compartments in which the floors, walls, and ceilings have a fire-resistance rating of not less than one hour.

**45.6.1.1** Replace with the following:

**45.6.1.1** No single block or pile shall contain more than 7,500 ft.<sup>3</sup> (212.376 m<sup>3</sup>) of combustible fibers, exclusive of aisles or clearances. However, a single block or pile shall be permitted containing 25,000 ft.<sup>3</sup> (708 m<sup>3</sup>) of combustible fibers, exclusive of aisles or clearances, if the criteria of NFPA 13: *Standard for the Installation of Sprinkler Systems* are met.

## **Chapter 50 Commercial Cooking Equipment.**

**50.2.1.1(1) through 50.2.1.1(2)(b)** Add:

(1) Type 1 hoods are required for the removal of grease-laden vapors provided they meet all the material and performance requirements of this *Code*.

(2) The following are types of hoods used for exhaust:

(a) **Type I.** Hoods designed for grease exhaust applications.

(b) **Type II.** Hoods designed for heat and steam removal and other non-grease applications. These hoods are not applicable to this standard.

**50.2.1.2.1** Add:

**50.2.1.2.1 Certificates.** Certificates, where required, shall comply with Section 1.13.

**50.5.4.1** Add:

**50.5.4.1** If the AHJ determines that the exhaust system of such operation has not been inspected pursuant to Section 50.5.4 for grease buildup within the past 12-month period, the AHJ shall issue an order to cease such operation pending such inspection. Section 50.5.4.1 shall not limit the ability of the AHJ to issue such other reasonable orders relating to compliance with this Chapter.

**50.5.6.2\*** Replace with the following:

**50.5.6.2** Hoods, grease removal devices, fans, ducts, and other appurtenances shall be cleaned to remove combustible contaminants to a minimum of 50 µm (0.002 in.). A measurement system of deposition shall be established for each facility to trigger a need to clean, to verify the requirements contained in Table 50.5.4, in addition to a time reference based on equipment emissions.

1.05: continued

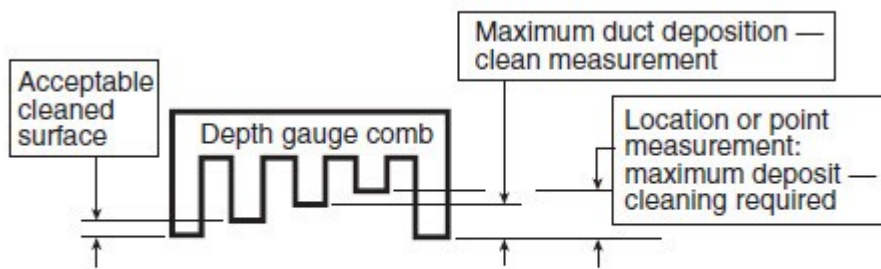


FIGURE A.50.5.6.2 Depth Gauge Comb. [96:Figure A.11.6.2]

**50.5.6.2.1 Add**

**50.5.6.2.1** The owner or operator of the commercial cooking operation, or employee thereof, shall not be prohibited from conducting the actual cleaning and grease removal of hoods, grease removal devices, fans, ducts and other appurtenances of his or her own commercial cooking operations, as long as said owner, operator, or employee holds a "restricted" Certificate of Competency issued by the State Fire Marshal. However, this provision does not allow such owner, operator, or employee to conduct such cleaning services for anyother commercial kitchen operation.

**50.5.6.13 Replace with the following:**

**50.5.6.13** When an exhaust cleaning service is used, a certificate showing the name of the servicing company, the name of the person performing the work, and the date of inspection or cleaning shall be maintained on the premises. [96:11.6.13]. The content, size, design, and placement of any label shall be prescribed by the State Fire Marshal.

**50.5.6.14.1 through 50.5.6.14.1.2 Add:**

**50.5.6.14.1** If a qualified individual determines that a commercial cooking system, after cleaning or inspection thereof, is not in compliance with this Chapter, relative to grease buildup and related contaminants, said individual shall, within 48 hours, notify in writing, on a form prescribed by the State Fire Marshal, the Head of the Fire Department of the location of said system and the nature of such noncompliance. A copy of said form shall also be given to the owner and operator of the system.

**50.5.6.14.1.1** A record of each inspection for grease and related contaminants and each cleaning activity relating to grease buildup shall be produced by the qualified person who conducted said inspection or cleaning. Said record shall include:

- (1) The dates of inspection or cleaning;
- (2) Location;
- (3) The CR number for the contractor and CC number for the inspector and cleaner;
- (4) Signatures of each involved in the inspection and cleaning;
- (5) Any other information as determined by the State Fire Marshal; and
- (6) A copy of such record shall be maintained by:
  - (a) The operator within the building or structure where the system is located; and
  - (b) The qualified person who conducted said inspection or cleaning activity.

**50.5.6.14.1.2** Such records shall be open to the inspection of the AHJ during regular hours of operation and shall be maintained for a period of at least three years.

**Chapter 52 Stationary Storage Battery Systems.****52.1\* General.**

**A52.1** Chapter 52 applies to the installation of battery storage systems. These systems can be installed within new or existing buildings, or as a stand-alone application without a building structure. If the battery storage system is installed within a building or on a foundation, the fire department should work closely with the building department to ensure all applicable regulations of the building and fire codes are satisfied. Attention should be given to reviewing the risk analysis and considering means of responding to fire or other emergency incidents in battery storage system buildings or sites.

1.05: continued

**52.1.1** Energy storage systems shall comply with Chapter 52.

**52.1.2 Permits.**

**52.1.2.1** Permits, where required, shall comply with Section 1.12.

**52.1.2.2** Prior to installation, plans shall be submitted and approved by the AHJ.

**52.2\* Lead-acid and Nickel-cadmium Batteries.**

**A52.2** The requirements in Section 52.2 supersede all the hazardous material designations, permits, and requirements in Chapter 60.

**52.2.1 General.** Stationary storage battery systems having an electrolyte capacity of more than 100 gal. (378.5 L) in sprinklered buildings or 50 gal. (189.3 L) in unsprinklered buildings for flooded lead-acid, nickel-cadmium, and valve-regulated lead-acid (VRLA) batteries used for facility standby power, emergency power, or uninterrupted power supplies shall be in accordance with Section 52.2 and Table 52.2.1.

**52.2.2 Safety Features.**

**52.2.2.1 Safety Venting.** Batteries shall be provided with safety venting caps per 52.2.2.1.1 and 52.2.2.1.2.

**52.2.2.1.1 Nonrecombinant Batteries.** Vented lead-acid and nickel-cadmium shall be provided with safety venting caps.

**52.2.2.1.2 Recombinant Batteries.** VRLA shall be equipped with self-sealing flame-arresting safety vents.

**52.2.2.2 Thermal Runaway.** VRLA systems shall be provided with a listed device or other approved method to preclude, detect, and control thermal runaway.

**52.2.2.3 Location and Occupancy Separation.**

**52.2.2.3.1** Battery systems shall be permitted in the same room as the equipment that they support.

**52.2.2.3.2** Battery systems shall be housed in a noncombustible, locked cabinet or other enclosure to prevent access by unauthorized personnel, unless located in a separate equipment room accessible only to authorized personnel.

**52.2.2.3.3** In other than assembly, educational, detention, and correction facilities; health care, ambulatory health care, and day care centers; and residential board and care and residential occupancies, battery systems shall be located in a room separated from other portions of the building by a minimum of a one hour fire barrier.

**52.2.2.3.4** In assembly, educational, detention and correction facilities; health care, ambulatory health care, and day care centers; and, residential board and care and residential occupancies, battery systems shall be located in a room separated from other portions of the building by a minimum of a two-hour fire barrier.



1.05: continued

**Table 52.2.1 Battery Requirements**

Requirement	Nonrecombinant Batteries		Recombinant Batteries
	Flooded Lead-acid	Flooded Nickel-cadmium (Ni-Cd)	Valve-regulated Lead-acid (VRLA)
Safety caps	Venting caps	Venting caps	Self-sealing flame-arresting caps
Thermal runaway management	Not required	Not required	Required
Spill control	Required	Required	Not required
Neutralization	Required	Required	Required
Ventilation	Required	Required	Required
Signage	Required	Required	Required
Seismic control	Required	Required	Required
Fire detection	Required	Required	Required

**52.2.2.4 Spill Control.**

**52.2.2.4.1** Rooms, buildings, or areas containing free-flowing liquid electrolyte in individual vessels having a capacity of more than 55 gal. (208 L) or multiple vessels having an aggregate capacity exceeding 1000 gal. (3785 L) shall be provided with spill control to prevent the flow of liquids to adjoining areas.

**52.2.2.4.2\*** An approved method and materials for the control of a spill of electrolyte shall be provided that will be capable of controlling a spill from the single largest vessel.

**A52.2.2.4.2** Methods of achieving this protection can include, but are not limited to, the following:

- (1) Liquidtight sloped or recessed floors in indoor locations or similar areas in outdoor locations
- (2) Liquidtight floors in indoor locations or similar areas in outdoor locations provided with liquidtight raised or recessed sills or dikes
- (3) Sumps and collection systems
- (4) Spill containment systems such as that described in A52.2.2.5.1.

**52.2.2.4.3** VRLA batteries with immobilized electrolyte shall not require spill control.

**52.2.2.5 Neutralization.**

**52.2.2.5.1\*** An approved method to neutralize spilled electrolyte shall be provided.

**A52.2.2.5.1** One method to determine compliance with the neutralization requirements of this subsection is found in Underwriters Laboratories Subject 2436, Outline of Investigation for Spill Containment for Stationary Lead Acid Battery Systems. Subject 2436 investigates the liquid tightness, level of electrolyte absorption, pH neutralization capability, and flame spread resistance of spill containment systems.

**52.2.2.5.2** For VRLA batteries, the method shall be capable of neutralizing a spill from the largest battery to a pH between 7.0 and 9.0.

**52.2.2.6\* Ventilation.** For flooded lead-acid, flooded nickel-cadmium, and VRLA batteries, ventilation shall be provided for rooms and cabinets in accordance with the *Mechanical Code* and one of the following:

**A52.2.2.6** Information on battery room ventilation can be found in IEEE 1635/ASHRAE 21, *Guide to Battery Room Ventilation and Thermal Management*.

1.05: continued

(1) The ventilation system shall be designed to limit the maximum concentration of hydrogen to 1.0% of the total volume of the room during the worst-case event of simultaneous "boost" charging of all the batteries, in accordance with nationally recognized standards.

(2) Continuous ventilation shall be provided at a rate of not less than 1 ft.<sup>3</sup>/min/ft.<sup>2</sup> (5.1 L/sec/m<sup>2</sup>) of floor area of the room or cabinet.

**52.2.2.7 Environment.** The battery environment shall be controlled or analyzed to maintain temperature in a safe operating range for the specific battery technology used.

**52.2.2.8 Signs.**

**52.2.2.8.1** Doors or accesses into the following shall be provided with approved signs:

- (1) Battery storage buildings;
- (2) Rooms containing stationary storage battery systems; and
- (3) Other areas containing stationary storage battery systems.

**52.2.2.8.2** For rooms that contain VRLA batteries, the signs required by 52.2.2.8.1 shall state the following:

This room contains:

- (1) Stationary storage battery systems
- (2) Energized electrical circuits

**52.2.2.8.3** For rooms that contain flooded lead-acid or flooded Ni-Cd batteries, the signs required by 52.2.2.8.1 shall state the following:

This room contains:

- (1) Stationary storage battery systems
- (2) Energized electrical circuits
- (3) Corrosive battery electrolyte

**52.2.2.8.4** Battery cabinets shall be provided with exterior labels that identify the manufacturer and model number of the system and electrical rating (i.e., voltage and current) of the contained battery system.

**52.2.2.8.5** Signs shall be provided within battery cabinets to indicate the relevant electrical, chemical, and fire hazard.

**52.2.2.9 Seismic Protection.** Battery systems shall be seismically braced in accordance with the building code.

**52.2.2.10 Smoke Detection.** An approved automatic smoke detection system shall be installed in rooms containing stationary battery storage systems in accordance with NFPA 72.

**52.2.2.10.1** The required automatic smoke detection system shall be supervised by an approved central, proprietary, or remote station service or a local alarm that will give an audible signal at a constantly attended location.

**52.2.2.10.2** Normally unoccupied, stand-alone telecommunications structures with a gross floor area of less than 1,500 ft.<sup>2</sup> (140 m<sup>2</sup>) shall not be required to have the detection as indicated in 52.2.2.10.

**52.3\* Additional Battery Technologies.**

**A52.3** The requirements in Section 52.3 supersede all the hazardous material designations, permits, and requirements in Chapter 60.

**52.3.1 General.** Energy storage systems having a capacity greater than the quantities listed in Table 52.3.1 shall be in accordance with Section 52.3 and where used as a legally required emergency or standby power system, shall also comply with 11.7.3.

**52.3.2\* Stationary Storage Battery Systems.**

**A52.3.2** This section covers stationary battery systems that are typically used for facility standby power, emergency power, uninterrupted power supplies, and load/shedding/load balancing applications.

1.05: continued

Stationary storage battery systems that exceed the amounts specified in Table 52.3.1 pose potential hazards that are significant enough to require compliance with the requirements in Chapter 52. It is not the intent of Chapter 52 to regulate equipment with integral standby power systems below the amounts in Table 52.3.1, such as emergency lighting units, fire alarm control units, and other appliances and equipment.

**52.3.2.1 Location and Occupancy Separation.** Stationary storage battery systems shall be located and constructed in accordance with this section.

**52.3.2.1.1** Stationary storage battery systems shall be housed in a noncombustible, locked cabinet or other enclosure to prevent access by unauthorized personnel, unless located in a separate equipment room accessible only to authorized personnel.

**52.3.2.1.2 Location.**

**52.3.2.1.2.1** Stationary storage battery systems shall not be located in areas where the floor is located more than 75 ft. (22,860 mm) above the lowest level of fire department vehicle access, or where the floor level is more than 30 ft. (9144 mm) below the finished floor of the lowest level of exit discharge, unless otherwise permitted by 52.3.2.1.2.

**52.3.2.1.2.2** Installations on noncombustible rooftops of buildings exceeding 75 ft. (22,860 mm) in height that do not obstruct fire department rooftop operations shall be permitted when approved by the AHJ.

**Table 52.3.1 Energy Storage System Threshold Quantities**

Type	Capacity <sup>a</sup>
Lithium batteries, all types	20 KWh (18.0 Mega joules)
Sodium batteries, all types	20 KWh (18.0 Mega joules) <sup>c</sup>
Flow batteries <sup>b</sup>	20 KWh (18.0 Mega joules)
Other battery technologies	10 KWh (10.8 Mega joules)
Capacitors	70 KWh (25.2 Mega joules)

Notes:

- <sup>a</sup> For batteries and capacitors rated in Amp-Hours, KWh should equal rated voltage times amp-hour rating divided by 1000.
- <sup>b</sup> Includes vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies.
- <sup>c</sup> Or 70 KWh (25.2 Mega joules) for sodium-ion technologies.

**52.3.2.1.3 Separation.** Rooms containing stationary storage battery systems shall be located in high-hazard occupancies, or shall be separated from other areas of the building as stated in 52.3.2.1.3.1 and 52.3.2.1.3.2. Stationary storage battery systems shall be allowed to be in the same room with the equipment they support.

**52.3.2.1.3.1** In other than assembly, educational, detention, and correction facilities; health care, ambulatory health care, and day care centers; and residential board and care and residential occupancies, stationary storage battery systems shall be located in a room separated from other portions of the building by a minimum of a one hour fire barrier.

**52.3.2.1.3.2** In assembly, educational, detention, and correction facilities; health care, ambulatory health care, and day care centers; and residential board and care and residential occupancies, stationary storage battery systems shall be located in a room separated from other portions of the building by a minimum of a two-hour fire barrier.

**52.3.2.1.4 Outdoor Installations.** Stationary storage battery systems located outdoors shall comply with this paragraph, in addition to all applicable requirements of Section 52.3.

**52.3.2.1.4.1** Installations in outdoor enclosures or containers that are occupied for servicing, testing, maintenance, and other functions shall be treated as stationary storage battery system rooms.

**52.3.2.1.4.2** Battery arrays in noncombustible containers shall not be required to be spaced 3 ft. (914 mm) from the container walls.

1.05: continued

**52.3.2.1.4.3** Stationary storage battery systems located outdoors shall be separated by a minimum 5 ft. (1524 mm) from the following:

- (1) Lot lines;
- (2) Public ways;
- (3) Buildings;
- (4) Stored combustible materials;
- (5) Hazardous materials;
- (6) High-piled stock; and
- (7) Other exposure hazards.

**52.3.2.1.4.4** The AHJ shall be permitted to authorize smaller separation distances if large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress from adjacent buildings, or adversely impact adjacent stored materials or structures.

**52.3.2.1.4.5 Means of Egress.**

**52.3.2.1.4.5.1** Stationary storage battery systems located outdoors shall be separated from any means of egress as required by the AHJ to ensure safe egress under fire conditions, but in no case less than 10 ft. (3048 mm).

**52.3.2.1.4.5.2** The AHJ shall be permitted to authorize smaller separation distances if large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory is provided showing that a fire involving the system will not adversely impact occupant egress.

**52.3.2.1.4.6 Security of Areas.** Outdoor areas in which stationary storage battery systems are located shall be secured against unauthorized entry in an approved manner.

**52.3.2.2 Maximum Allowable Quantities.**

**52.3.2.2.1** Fire areas within buildings containing stationary storage battery systems exceeding the maximum allowable quantities in Table 52.3.2.2.1 shall comply with all applicable ordinary-hazard and high-hazard requirements as identified in 6.2.2 of NFPA 101 and the building code.

**Table 52.3.2.2.1**

Type	Maximum Allowable Quantities <sup>a</sup>	Hazard Classification
Lithium batteries, all types	600 KWh	High hazard <sup>c</sup>
Sodium batteries, all types	600 KWh	High hazard <sup>c</sup>
Flow batteries <sup>b</sup>	600 KWh	High hazard <sup>c</sup>
Other battery technologies	200 KWh	High hazard <sup>c</sup>

Notes:

<sup>a</sup> For batteries and capacitors rated in Amp-Hours, KWh should equal rated voltage times amp-hour rating divided by 1000.

<sup>b</sup> Includes vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies.

<sup>c</sup> Can be permitted to be ordinary hazard classification if approved by the AHJ based on (1) a hazard mitigation analysis conducted in accordance with 52.3.2.4 and (2) large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory that shows that a fire involving the stationary storage battery system is contained within the room for a duration equal to the fire resistance rating of the room separation required in 52.3.2.1.3.1 or 52.3.2.1.3.2, as applicable.

**52.3.2.2.2** Where approved by the AHJ, areas containing stationary storage battery systems that exceed the amounts in Table 52.3.2.2.1 shall be permitted to be treated as an ordinary-hazard and not a high-hazard classification based on a hazardous mitigation analysis in accordance with 52.3.2.4 and large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory.

1.05: continued

**52.3.2.2.3** Where areas within buildings contain a combination of energy system technologies, the total aggregate quantities shall be determined based on the sum of percentages of each type divided by the maximum allowable quantity of each type. If the sum of the percentages exceeds 100%, the area shall be treated as a high-hazard classification in accordance with Table 52.3.2.2.1.

**52.3.2.3\* Battery Arrays.**

**A52.3.2.3** A stationary battery array is an arrangement of individual stationary storage batteries in close proximity to each other, mounted on storage racks or in modules, battery cabinets, or other enclosures.

**52.3.2.3.1** Battery arrays shall comply with 52.3.2.3.2 and 52.3.2.3.3, unless otherwise permitted by 52.3.2.3.4 or 52.3.2.3.5.

**52.3.2.3.2** Storage batteries, prepackaged stationary storage battery systems, and pre-engineered stationary storage battery systems shall be segregated into arrays not exceeding 50 KWh (180 Mega joules) each.

**52.3.2.3.3** Each array shall be spaced a minimum 3 ft. (914 mm) from other arrays and from walls in the storage room or area. The storage arrangements shall comply with the egress provisions in NFPA 101.

**52.3.2.3.4** Listed pre-engineered stationary storage battery systems and prepackaged stationary storage battery systems shall not exceed 250 KWh (900 Mega joules) each.

**52.3.2.3.5** The AHJ shall be permitted to approve listed pre-engineered and prepackaged battery arrays with larger capacities or smaller battery array spacing if large-scale fire and fault condition testing conducted or witnessed and reported by an approved testing laboratory is provided showing that a fire involving one array will not propagate to an adjacent array, and be contained within the room for a duration equal to the fire resistance rating of the room separation required by 52.3.2.1.3.

**52.3.2.4 Hazard Mitigation Analysis.** A failure mode and effects analysis (FMEA) or other approved hazard mitigation analysis shall be provided to the AHJ when any of the following conditions are present:

- (1) Battery technologies not specifically identified in Table 52.3.1 are provided.
- (2) More than one stationary storage battery technology is provided in a room or indoor area where there is a potential for adverse interaction between technologies.
- (3) When allowed as a basis for increasing maximum allowable quantities as specified in Table 52.3.2.2.1.

**52.3.2.4.1** The analysis shall evaluate the consequences of the following failure modes, and others deemed necessary by the AHJ. Only single failure modes shall be considered for each mode:

- (1) Thermal runaway condition in a single module or array
- (2) Failure of a battery management system
- (3) Failure of a required ventilation system
- (4) Voltage surges on the primary electric supply
- (5) Short circuits on the load side of the stationary battery storage system
- (6) Failure of the smoke detection, fire suppression, or gas detection system

**52.3.2.4.2** The AHJ shall be permitted to approve the hazardous mitigation analysis provided the consequences of the FMEA demonstrate the following:

- (1) Fires or explosions will be contained within unoccupied stationary storage battery system rooms for the minimum duration of the fire resistance rating specified in 52.3.2.1.3.1 or 52.3.2.1.3.2, as applicable
- (2) Fires and explosions in stationary storage battery system cabinets in occupied work centers allow occupants to safely evacuate
- (3) Toxic and highly toxic gases released during charging, discharging, and normal operation shall not exceed the permissible exposure limit (PEL)
- (4) Toxic and highly toxic gases released during fires and other fault conditions shall not reach concentrations in excess of IDLH level in the building or adjacent means of egress routes during the time deemed necessary to evacuate from that area



1.05: continued

(5) Flammable gases released from batteries during charging, discharging, and normal operation shall not exceed 25% of the lower flammable limit (LFL)

**52.3.2.4.3** Construction, equipment, and systems that are required for the stationary storage battery system to comply with the hazardous mitigation analysis shall be installed, maintained, and tested in accordance with nationally recognized standards and specified design parameters.

**52.3.2.5 Listings.** Storage batteries shall be listed in accordance with UL 1973, Standard for Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications. Prepackaged and pre-engineered stationary storage battery systems shall be listed in accordance with UL 9540, Outline of Investigation for Energy Storage Systems and Equipment.

**52.3.2.5.1\* Prepackaged and Pre-engineered Systems.** Prepackaged and pre-engineered stationary storage battery systems shall be installed in accordance with their listing and the manufacturer's instructions.

**A52.3.2.5.1** A prepackaged stationary storage battery system is designed and investigated as a single unit, assembled in a factory, and shipped to the site. A pre-engineered stationary storage battery system is designed and investigated as a single unit, but is shipped in modular form for assembly at the site.

**52.3.2.5.2 Environment.** The storage battery environment shall be controlled to maintain temperatures and conditions within the battery manufacturer's specifications.

#### **52.3.2.6 Installation.**

**52.3.2.6.1 Battery Management System.** An approved battery management system shall be provided for battery technologies for monitoring and balancing cell voltages, currents, and temperatures within the manufacturer's specifications. The system shall transmit an alarm signal to an approved location if potentially hazardous temperatures or other conditions including short circuits, overvoltage (*i.e.*, overcharge) or under voltage (*i.e.*, over discharge) are detected.

**52.3.2.6.2 Battery Chargers.** Battery chargers shall be compatible with the battery manufacturer's electrical ratings and charging specifications. Battery chargers shall be listed in accordance with the UL 1564, Standard for Industrial Battery Chargers, or provided as part of a listed pre-engineered or prepackaged stationary storage battery system.

**52.3.2.6.3 Vehicle Impact Protection.** Vehicle impact protection shall be provided where stationary storage battery systems are subject to impact by motor vehicles.

#### **52.3.2.6.4 Combustible Storage.**

**52.3.2.6.4.1** Combustible materials not related to the stationary storage battery system shall not be stored in battery rooms, cabinets, or enclosures.

**52.3.2.6.4.2** Combustible materials in occupied work centers shall comply with Section 10.18 and shall not be stored within 3 ft. (915 mm) of battery cabinets.

#### **52.3.2.6.5 Signage.**

**52.3.2.6.5.1** Approved signage shall be provided on doors or in approved locations near entrances to stationary battery storage system rooms.

**52.3.2.6.5.2** New signage installations shall require the following items:

- (1) Hazard identification markings in accordance with NFPA 704.
- (2) "This room contains energized battery systems", or the equivalent.
- (3) Identification of the type(s) of batteries present
- (4) AUTHORIZED PERSONNEL ONLY
- (5) Technology-specific markings, if required in 52.3.2.11

**52.3.2.6.5.3** Where the battery storage system disconnecting means is not within sight of the main service disconnect, placards or directories shall be installed at the locations of the main service disconnect to indicate the location of all battery storage disconnecting means in accordance with NFPA 70.

**52.3.2.6.5.4** Existing stationary storage battery systems shall be permitted to include the signage required at the time it was installed.

## 1.05: continued

**52.3.2.6.5.5** Battery cabinets shall be provided with exterior labels that identify the manufacturer and model number of the system and electrical rating (i.e., voltage and current) of the contained battery system.

**52.3.2.6.5.6** Signs shall be provided within battery cabinets to indicate the relevant electrical, chemical, and fire hazard.

**52.3.2.6.5.7** Fire command centers in buildings containing stationary storage battery systems shall include signage or readily available documentation that describes the location of stationary storage battery systems, the types of batteries present, operating voltages, and location of electrical disconnects.

**52.3.2.6.6 Seismic Protection.** Battery systems shall be seismically braced in accordance with the *Building Code*.

**52.3.2.6.7 Safety Caps.** Vented batteries shall be provided with flame-arresting safety caps.

**52.3.2.6.8\* Mixed Battery Systems.** Different types of batteries shall not be installed in the same room or cabinet if there is a potential for unsafe interaction between them, as determined by the AHJ.

**A52.3.2.6.8** This section is intended to address unique situations where the installation of different types of batteries in the same room or cabinet could create a situation where there is unacceptable chemical, thermal, or other interaction between them, or where the surrounding environment is not within the battery manufacturers' specifications. The AHJ has the option to require a hazard mitigation analysis, conducted in accordance with 52.3.2.4, to identify hazards and potential solutions that will mitigate the hazards.

#### **52.3.2.7 Suppression and Detection.**

**52.3.2.7.1 Fire suppression.** Rooms containing stationary storage battery systems shall be protected by an automatic sprinkler system installed in accordance with Section 13.3.

**52.3.2.7.1.1** Commodity classifications for specific technologies of storage batteries shall be in accordance with Chapter 5 of NFPA 13.

**52.3.2.7.1.2** If the storage battery types are not specifically addressed in Chapter 5 of NFPA 13, the AHJ shall be permitted to approve the fire suppression system based on full-scale fire and fault condition testing conducted or witnessed and reported by an approved laboratory.

**52.3.2.7.2 Smoke Detection.** An approved automatic smoke detection system shall be installed in rooms containing stationary battery storage systems in accordance with NFPA 72 and the required automatic smoke detection system shall be supervised by an approved central, proprietary, or remote station service or a local alarm that will give an audible signal at a constantly attended location.

**52.3.2.8\* Ventilation.** Where required by 52.3.2.11, ventilation shall be provided for rooms and cabinets in accordance with the *mechanical code* and one of the following:

**A52.3.2.8** Information on battery room ventilation can be found in IEEE1635/AHRAE 21, *Guide to Battery Room Ventilation and Thermal Management*.

(1) The ventilation system shall be designed to limit the maximum concentration of flammable gas to 25% of the lower flammable limit (LFL) of the total volume of the room during the worst-case event of simultaneous "boost" charging of all the batteries, in accordance with nationally recognized standards.

(2) Mechanical ventilation shall be provided at a rate of not less than 1 ft.<sup>3</sup>/min/ft.<sup>2</sup> (5.1 L/sec/m<sup>2</sup>) of floor area of the room or cabinet. The ventilation can be either continuous, or activated by a gas detection system in accordance with 52.3.2.8.2.

**52.3.2.8.1** Required mechanical ventilation systems for rooms and cabinets containing storage batteries shall be supervised by an approved central, proprietary, or remote station service or shall initiate an audible and visual signal at an approved constantly attended on-site location.

**52.3.2.8.2** Where required by 52.3.2.8(2), rooms containing stationary storage battery systems shall be protected by an approved continuous gas detection system.

**52.3.2.8.2.1** The gas detection system shall be designed to activate when the level of flammable gas exceeds 25% of the lower flammable limit (LFL)

1.05: continued

**52.3.2.8.2.2** Activation of the gas detection system shall result in activation of the mechanical ventilation system, which shall remain on until the flammable gas detected is less than 25% of the LFL.

**52.3.2.8.2.3** The gas detection system shall include a minimum two hours of standby power.

**52.3.2.8.2.4** Failure of the gas detection system shall annunciate a trouble signal at an approved central, proprietary, or remote station service, or when approved at a constantly attended on-site location.

**52.3.2.9\* Spill Control and Neutralization.** Where required by 52.3.2.11, approved methods and materials shall be provided for the control and neutralization of spills of electrolyte or other hazardous materials in rooms containing stationary storage batteries as follows:

**A52.3.2.9** Methods of achieving this protection can include, but are not limited to, the following:

- (1) Liquidtight sloped or recessed floors in indoor locations or similar areas in outdoor locations
- (2) Liquidtight floors in indoor locations or similar areas in outdoor locations provided with liquidtight raised or recessed sills or dikes
- (3) Sumps and collection systems
  - (1) For batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill of the total capacity from the largest cell or block to a pH between 5.0 and 9.0.
  - (2) For batteries with immobilized electrolyte, the method and materials shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest cell or block in the room to a pH between 5.0 and 9.0.

**52.3.2.10 Thermal Runaway.** Where required by 52.3.2.11, a listed device or other approved method shall be provided to preclude, detect, and control thermal runaway.

**52.3.2.11 Battery Specific Protection.** Stationary storage battery systems shall comply with 52.3.2 through 52.3.2.10 and this section, as applicable.

**52.3.2.11.1 Lithium Batteries.** Stationary storage battery systems utilizing lithium batteries shall be provided with thermal runaway protection in accordance with 52.3.2.10.

**52.3.2.11.2 Sodium Batteries.** Stationary storage battery systems utilizing sodium batteries shall comply with the following:

- (1) Ventilation shall be provided in accordance with 52.3.2.8.
- (2) Spill control and neutralization shall be in accordance with 52.3.2.9.
- (3) Thermal runaway protection shall be provided for in accordance with 52.3.2.10.
- (4) A hazard mitigation analysis shall be provided for systems that utilize sodium sulfur batteries, or other sulfur-type battery systems that operate above ambient temperatures.
- (5) The signage required in 52.3.2.6.5 shall include, where applicable, "Water Reactive Hazard - Apply No Water".

**52.3.2.11.3 Flow Batteries.** Stationary storage battery systems utilizing flow batteries shall comply with the following:

- (1) Ventilation shall be provided in accordance with 52.3.2.8.
- (2) Spill control and neutralization shall be in accordance with 52.3.2.9.

**52.3.2.11.4 Other Battery Types.** Stationary storage battery systems utilizing battery technologies other than those described in 52.3.2.11.1 through 52.3.2.11.3 shall comply with the following:

- (1) Ventilation shall be provided in accordance with 52.3.2.8 where flammable, toxic or highly toxic gases could be present during charging, discharging, and normal system use.
- (2) Spill control and neutralization shall be in accordance with 52.3.2.9 where the batteries contain electrolytes that could be released from the batteries.
- (3) Thermal runaway protection shall be provided in accordance with 52.3.2.10.
- (4) The signage required in 52.3.2.6.5 shall also identify any potential hazards associated with the batteries.

1.05: continued

**52.3.2.12 Testing, Maintenance, and Repairs.**

**52.3.2.12.1** Stationary storage batteries and associated equipment and systems shall be tested and maintained in accordance with the manufacturer's instructions.

**52.3.2.12.2** Any storage batteries or system components used to replace existing units shall be compatible with the battery charger, battery management systems, other storage batteries, and other safety systems.

**52.3.3 Capacitor Energy Storage Systems.**

**52.3.3.1 Capacity.** Stationary capacitor energy storage systems having capacities greater than those described in Table 52.3.1 shall comply with 52.3.3.

**52.3.3.2 Location and Occupancy Separation.** Stationary capacitor energy storage systems shall be located and constructed as required for stationary storage battery system in accordance with 52.3.2.1 through 52.3.2.1.4.3.

**52.3.3.3 Maximum Allowable Quantities.** Fire areas within buildings containing capacitor energy storage systems exceeding 600 KWh (2160 mJ) shall comply with all applicable ordinary-hazard and high-hazard requirements as identified in 6.2.2 of NFPA 101 and the *Building Code*.

**52.3.3.4 Capacitor Arrays.**

**52.3.3.4.1** Capacitors, prepackaged stationary capacitor energy storage systems, and pre-engineered capacitor energy storage systems shall be segregated into arrays not exceeding 50 KWh (180 Mega joules) each.

**52.3.3.4.2** Each array shall be spaced a minimum 3 ft. (914 mm) from other arrays and from walls in the storage room or area. The storage arrangements shall comply with the egress provisions in NFPA 101.

**52.3.3.5 Listings.** Capacitors shall be listed in accordance with UL 1973, Standard for Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications. Prepackaged and pre-engineered capacitor energy systems shall be listed in accordance with UL 9540, *Outline of Investigation for Energy Storage Systems and Equipment*.

1.05: continued

**52.3.3.5.1\* Prepackaged and Pre-engineered Systems.** Prepackaged and pre-engineered capacitor energy storage systems shall be installed in accordance with their listing and the manufacturer's instructions.

**A52.3.3.5.1** A prepackaged capacitor energy system is designed and investigated as a single unit, assembled in a factory, and shipped to the site. A pre-engineered capacitor energy system is designed and investigated as a single unit, but is shipped in modular form for assembly at the site.

**52.3.3.5.2 Environment.** The environment surrounding the capacitors shall be controlled to maintain temperatures and conditions within the manufacturer's specifications.

**52.3.3.6 Chargers.** Capacitor chargers shall be compatible with the capacitor manufacturer's electrical ratings and charging specifications, and shall be listed in accordance with the UL 1564, *Standard for Industrial Battery Chargers*, or provided as part of a listed pre-engineered or prepackaged capacitor energy storage system.

**52.3.3.7 Vehicle Impact Protection.** Vehicle impact protection shall be provided where capacitor energy storage systems are subject to impact by motor vehicles.

**52.3.3.8 Combustible Storage.**

**52.3.3.8.1** Combustible materials not related to the capacitor energy storage system shall not be stored in capacitor rooms, cabinets, or enclosures.

**52.3.3.8.2** Combustible materials in occupied work centers shall comply with Section 10.18 and shall not be stored within 3 ft. (915 mm) of capacitor cabinets.

**52.3.3.9 Signage.** Approved signage shall be provided on doors or in approved locations near entrances to capacitor energy storage systems, and shall include the following:

- (1) Hazard identification markings in accordance with NFPA 704;
- (2) "This room contains energized capacitor systems", or the equivalent;
- (3) Identification of the type(s) of capacitors present; and
- (4) AUTHORIZED PERSONNEL ONLY.

**52.3.3.9.1** Where the capacitor energy storage system disconnecting means is not within sight of the main service disconnect, placards or directories shall be installed at the locations of the main service disconnect to indicate the location of all capacitor energy storage system disconnecting means in accordance with NFPA 70.

**52.3.3.9.2** Capacitor cabinets shall be provided with exterior labels that identify the manufacturer and model number of the system and electrical rating (*i.e.*, voltage and current) of the contained battery system.

**52.3.3.9.3** Signs shall be provided within capacitor cabinets to indicate the relevant electrical, chemical, and fire hazard.

**52.3.3.9.4** Fire command centers in buildings containing capacitor energy storage systems shall include signage or readily available documentation that describes the location of the systems, the types of capacitors present, operating voltages, and location of electrical disconnects.

**52.3.3.10 Seismic Protection.** Capacitor energy storage systems shall be seismically braced in accordance with the *Building Code*.

**52.3.3.11 Testing, Maintenance, and Repairs.**

**52.3.3.11.1** Capacitor energy storage systems and associated equipment and systems shall be tested and maintained in accordance with the manufacturer's instructions.

**52.3.3.11.2** Capacitors or system components used to replace existing units shall be compatible with the capacitor charger, other capacitors, and other safety systems.

## Chapter 53 Mechanical Refrigeration.

**53.1.2.1** Delete.



1.05: continued

Chapter 54 Ozone Gas–Generating Equipment.

Chapter 54 Delete in its entirety.

Chapter 60 Hazardous Materials.

60.1.2(14) Add:  
(14) Consumer fireworks, 1.4G in mercantile occupancies complying with Section 65.10 [5000:34.1.1.2]

60.1.2 (15) through (17) Add:  
(15) Closed piping systems containing flammable or combustible liquids or gases utilized for the operation of machinery orequipment.  
(16) The storage or utilization of materials for agricultural purposes on the premises complying with the *Building Code Appendix C Group U—Agricultural Buildings*.  
(17) The storage of black powder, smokeless propellants, small arms primer in use group M or R-3 and special industrial explosive devices in use group B, F, M, and S provided the storage conforms to Chapter 65.

60.4.2.1.1.3 Replace with the following:  
60.4.2.1.1.3 A permit shall not be issued in excess of these quantities until such time that the Building Official has confirmed the facility is classified and constructed as the appropriate a H-use, control area, or is exempt.

60.4.2.1.1.3 Replace table as follows:  
Table 60.4.2.1.1.3 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area <sup>a, p, q, s, u, v</sup>

Insert Table 60.4.2.1.1.3

Table 60.4.2.1.1.3 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area <sup>a, p, q, s, u, v</sup>

		High	Storage <sup>a</sup>			Use – Closed Systems <sup>a</sup>			Use – Open Systems <sup>a</sup>	
Material	Class	Hazard		Liquid			Liquid			Liquid
		Protection	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons
		Level	Pounds	(lb)	(lb)	Pounds	(lb)	(lb)	Pounds	(lb)
Physical Hazard Materials										
Combustible liquid <sup>m, o</sup>	II	2 or 3	N/A	120 <sup>c, d</sup>	N/A	N/A	120 <sup>d</sup>	N/A	N/A	30 <sup>d</sup>
	IIIA	2 or 3	N/A	330 <sup>c, d</sup>	N/A	N/A	330 <sup>d</sup>	N/A	N/A	80 <sup>d</sup>
	IIIB	N/A	N/A	13200 <sup>c, e</sup>	N/A	N/A	13200 <sup>e</sup>	N/A	N/A	3300 <sup>e</sup>
Combustible dust	N/A	2	See note v	N/A	N/A	See note v	N/A	N/A	See note v	N/A
Combustible fiber <sup>t</sup>	Loose	3	(100)	N/A	N/A	(100)	N/A	N/A	(20)	N/A
	Baled <sup>f</sup>	3	(1000)	N/A	N/A	(1000)	N/A	N/A	(200)	N/A
Cryogenic fluid [55:Table 6.3.1]	Flammable	2	N/A	45 <sup>d</sup>	N/A	N/A	45 <sup>d</sup>	N/A	N/A	45 <sup>d</sup>
	Oxidizing	3	N/A	45 <sup>d</sup>	N/A	N/A	45 <sup>d</sup>	N/A	N/A	45 <sup>d</sup>
	Inert	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Explosives	Division 1.1	1	1 <sup>c, i</sup>	(1) <sup>c, i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	Division 1.2	1	1 <sup>c, i</sup>	(1) <sup>c, i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	Division 1.3	1 or 2	5 <sup>c, i</sup>	(5) <sup>c, i</sup>	N/A	1 <sup>i</sup>	(1) <sup>i</sup>	N/A	1 <sup>i</sup>	(1) <sup>i</sup>
	Division 1.4	3	50 <sup>c, i</sup>	(50) <sup>c, i</sup>	N/A	50 <sup>i</sup>	(50) <sup>i</sup>	N/A	N/A	N/A
	Division 1.4G	3	125 <sup>c, i</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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1.05: continued

		High	Storage <sup>a</sup>			Use – Closed Systems <sup>a</sup>			Use – Open Systems <sup>a</sup>	
Material	Class	Hazard		Liquid			Liquid			Liquid
		Protection	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons
		Level	Pounds	(lb)	(lb)	Pounds	(lb)	(lb)	Pounds	(lb)
	Division 1.5	1	1 <sup>c,i</sup>	(1) <sup>c,i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	Division 1.6	1	1 <sup>c,i</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flammable Gas <sup>l</sup> [55: Table 6.3.1]	Gaseous	2	N/A	N/A	1000 <sup>c,d</sup>	N/A	N/A	1000 <sup>c,d</sup>	N/A	N/A
	Liquefied	2	N/A	N/A	(150) <sup>c,d</sup>	N/A	N/A	(150) <sup>c,d</sup>	N/A	N/A
	Liquefied Petroleum (LP)	See note	See note	See note	See note	See note	See note	See note	See note	See note
Flammable Liquid <sup>m</sup>	IA	2	N/A	30 <sup>c,d</sup>	N/A	N/A	30 <sup>d</sup>	N/A	N/A	10 <sup>d</sup>
	IB and IC	3	N/A	120 <sup>c,d</sup>	N/A	N/A	120 <sup>d</sup>	N/A	N/A	30 <sup>d</sup>
	Combination (IA, IB, IC)	2 or 3	N/A	120 <sup>c,d,n</sup>	N/A	N/A	120 <sup>d,n</sup>	N/A	N/A	30 <sup>d,n</sup>
Flammable Solid	N/A	3	125 <sup>c,d</sup>	N/A	N/A	125 <sup>d</sup>	N/A	N/A	25 <sup>d</sup>	N/A
Inert Gas	Gaseous	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
	Liquefied	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A
Organic Peroxide	UD	1	1 <sup>c,i</sup>	(1) <sup>c,i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	I	2	5 <sup>c,d</sup>	(5) <sup>c,d</sup>	N/A	1 <sup>d</sup>	(1) <sup>d</sup>	N/A	1 <sup>d</sup>	(1) <sup>d</sup>
	II	3	50 <sup>c,d</sup>	(50) <sup>c,d</sup>	N/A	50 <sup>d</sup>	(50) <sup>d</sup>	N/A	10 <sup>d</sup>	(10) <sup>d</sup>
	III	3	125 <sup>c,d</sup>	(125) <sup>c,d</sup>	N/A	125 <sup>d</sup>	(125) <sup>d</sup>	N/A	25 <sup>d</sup>	(25) <sup>d</sup>
	IV	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
	V	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Oxidizer	4	1	1 <sup>i</sup>	(1) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	3 <sup>f</sup>	2 or 3	10 <sup>c,d</sup>	(10) <sup>c, d</sup>	N/A	2 <sup>d</sup>	(2) <sup>d</sup>	N/A	2 <sup>d</sup>	(2) <sup>d</sup>
	2	3	250 <sup>c, d</sup>	(250) <sup>c, d</sup>	N/A	250 <sup>d</sup>	(250) <sup>d</sup>	N/A	50 <sup>d</sup>	(50) <sup>d</sup>
	1	N/A	4000 <sup>c,e</sup>	(4000) <sup>c,e</sup>	N/A	4000 <sup>c</sup>	(4000) <sup>c</sup>	N/A	1000 <sup>c</sup>	(1000) <sup>c</sup>
Oxidizing Gas	Gaseous	3	N/A	N/A	1500 <sup>g,c,d</sup>	N/A	N/A	1500 <sup>g,c,d</sup>	N/A	N/A
	Liquefied	3	N/A		(1500) <sup>g,c,d</sup>	N/A		(1500) <sup>g,c,d</sup>	N/A	N/A
Pyrophoric		2	4 <sup>c,i</sup>	(4) <sup>c,i</sup>	N/A	1 <sup>i</sup>	(1) <sup>i</sup>	N/A	0	0
Pyrophoric Gas	Gaseous	2	N/A	N/A	50 <sup>c,i</sup>	N/A	N/A	10 <sup>c,i</sup>	N/A	N/A
	Liquefied	2	N/A	N/A	(4) <sup>c,i</sup>	N/A	N/A	(4) <sup>c,i</sup>	N/A	N/A
Unstable (reactive)	4	1	1 <sup>c,i</sup>	(1) <sup>c,i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>	N/A	¼ <sup>i</sup>	(1/4) <sup>i</sup>
	3	1 or 2	5 <sup>c,d</sup>	(5) <sup>c,d</sup>	N/A	1 <sup>d</sup>	(1) <sup>d</sup>	N/A	1 <sup>d</sup>	(1) <sup>d</sup>
	2	2	50 <sup>c,d</sup>	(50) <sup>c,d</sup>	N/A	50 <sup>d</sup>	(50) <sup>d</sup>	N/A	10 <sup>d</sup>	(10) <sup>d</sup>
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Unstable (reactive) Gas	Gaseous 4 or 3	1	N/A	N/A	10 <sup>c,i</sup>	N/A	N/A	2 <sup>i</sup>	N/A	N/A
	Detonable 3	2	N/A	N/A	50 <sup>c,d</sup>	N/A	N/A	10 <sup>d</sup>	N/A	N/A
	Nondetonable 2	3	N/A	N/A	750 <sup>c,d</sup>	N/A	N/A	750 <sup>d</sup>	N/A	N/A
	1	N/A	N/A	N/A	NL	N/A	N/A	NL	N/A	N/A

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1.5 : continued

		High	Storage <sup>a</sup>			Use – Closed Systems <sup>a</sup>			Use – Open Systems <sup>a</sup>	
Material	Class	Hazard		Liquid			Liquid			Liquid
		Protection	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons	Gas <sup>b</sup> scf	Solid	Gallons
		Level	Pounds	(lb)	(lb)	Pounds	(lb)	(lb)	Pounds	(lb)
Water (reactive)	3	2	5 <sup>c,d</sup>	(5) <sup>c,d</sup>	N/A	5 <sup>d</sup>	(5) <sup>d</sup>	N/A	1 <sup>d</sup>	(1) <sup>d</sup>
	2	3	50 <sup>c,d</sup>	(50) <sup>c,d</sup>	N/A	50 <sup>d</sup>	(50) <sup>d</sup>	N/A	10 <sup>d</sup>	(10) <sup>d</sup>
	1	N/A	NL	NL	N/A	NL	NL	N/A	NL	NL
Corrosive	N/A		5000 <sup>d</sup>	500 <sup>d</sup>	N/A	5000 <sup>d</sup>	500 <sup>c,d</sup>	N/A	1000 <sup>d</sup>	100 <sup>d</sup>
Corrosive gas	Gaseous	4	N/A	N/A	810 <sup>c</sup>	N/A	N/A	810 <sup>c,d</sup>	N/A	N/A
	Liquefied	4	N/A	N/A	(150) <sup>c</sup>	N/A	N/A	(150) <sup>c,d</sup>	N/A	N/A
Highly Toxic	N/A		10 <sup>d</sup>	(10) <sup>d</sup>	N/A	10 <sup>d</sup>	(10) <sup>c,d</sup>	N/A	3 <sup>d</sup>	(3) <sup>d</sup>
Highly Toxic Gas	Gaseous	4	N/A	N/A	20 <sup>d,g</sup>	N/A	N/A	20 <sup>d,g</sup>	N/A	N/A
	Liquefied	4	N/A	N/A	(4) <sup>d,g</sup>	N/A	N/A	(4) <sup>d,g</sup>	N/A	N/A
Toxic	N/A		500 <sup>d</sup>	(500) <sup>d</sup>	N/A	500 <sup>d</sup>	(500) <sup>d</sup>	N/A	125 <sup>d</sup>	(125) <sup>d</sup>
Toxic Gas	Gaseous	4	N/A	N/A	810 <sup>c,d</sup>	N/A	N/A	810 <sup>c,d</sup>	N/A	N/A
	Liquefied	4	N/A	N/A	(150) <sup>c,d</sup>	N/A	N/A	(150) <sup>c,d</sup>	N/A	N/A

UD: Unclassified detonable  
For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 scf = 0.0283 Nm3. N/A: Not applicable. NL: Not limited.  
NP: Not permitted.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400: *Hazardous Materials Code* but are provided here for informational purposes. See Chapter 2 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

- a. Table values in parentheses correspond to the unit name in parentheses at the top of the column. The aggregate quantity in use and storage is not permitted to exceed the quantity listed for storage.
- b. Measured at NTP or 70°F (21°C) and 14.7 psia (101.3 kPa).
- c. Quantities are permitted to be increased 100% where stored or used in approved cabinets, gas cabinets, exhausted enclosures, gas rooms explosives magazines, or safety cans, as appropriate for the material stored, in accordance with this *Code*. Where footnote d also applies, the increase for both footnote c. and footnote d. is permitted to be applied accumulatively.
- d. Maximum quantities are permitted to be increased 100% in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*. Where footnote c. also applies, the increase for both footnote c. and footnote d. is permitted to be applied accumulatively.
- e. The permitted quantities are not limited in a building equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*.
- f. A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.
- g. Allowed only where stored or used in gas rooms or approved cabinets, exhausted gas cabinets or exhausted enclosures, as specified in this *Code*. [5000: Table 34.1.3.1]
- h. Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.
- i. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13: *Standard for the Installation of Sprinkler Systems*.
- j. None allowed in unsprinklered buildings unless stored or used in gas rooms or in approved gas cabinets or exhausted enclosures, as specified in this *Code*.
- k. With pressure-relief devices for stationary or portable containers vented directly outdoors or to an exhaust hood. [55: Table 6.3.1.1]
- l. Flammable gases in the fuel tanks of mobile equipment or vehicles are permitted to exceed the MAQ where the equipment is stored and operated in accordance with this *Code*. [400: Table 5.2.1.1.3]

## 1.05: continued

- m. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50% by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
- n. Containing not more than the maximum allowable quantity per *control area* of Class IA, IB or IC flammable liquids.
- o. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the *International Fire Code* in accordance with the *Building Code*.
- p. For gallons of liquids, divide the amount in pounds by ten in accordance with Section 5003.1.2 of the *International Fire Code* in accordance with the *Building Code*.
- q. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with the *Building Code*.
- r. Densely packed baled cotton that complies with the packing requirements of ISO 8115: *Cotton Bales -- Dimensions and density* shall not be included in this material class in accordance with the *Building Code*.
- s. The following shall not be included in determining the maximum allowable quantities in accordance with the *Building Code*:
  - 1. Liquid or gaseous fuel in fuel tanks on vehicles.
  - 2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with the *International Fire Code*.
  - 3. Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.
  - 4. Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.
  - 5. Alcohol-based hand rubs classified as Class I or II liquids in dispensers that are installed in accordance with Sections 5705.5 and 5705.5.1 of the *International Fire Code*. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents.
- t. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with the *Building Code*.
- u. For use of control areas, *see the Building Code*.
- v. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

**60.4.2.1.1.3.1 Add:**

**60.4.2.1.1.3.1** A permit shall not be issued in excess of these quantities until such time it is confirmed that the facility is classified and constructed in accordance with the *Building Code* as the appropriate H-use, control area or is exempt.

**60.4.2.1.2 through 60.4.2.1.12 Delete.****60.4.2.1.2 Table through Table 60.4.2.1.8 and Table 60.4.2.1.10.1 Delete.****60.5.1.3.7.1 Replace with the following:**

**60.5.1.3.7.1** The person, firm, or corporation responsible for an unauthorized release shall institute and complete all actions necessary to remedy the effects of such unauthorized release, whether sudden or gradual, at no cost to the AHJ, in accordance with M.G.L. 21E, Massachusetts Oil and Hazardous Material Release Prevention Act.

**60.5.1.4.3.2(5) through 60.5.1.4.3.2(9) Add**

- (5) Identify Emergency Coordinators who will either be on the premises or on call and available to respond to an emergency within one hour of an emergency situation.
- (6) Maintain an updated list containing the names, and the office, home, and/or mobile telephone number(s) of all designated Emergency Coordinators and the times of their availability. If for a particular period more than one individual is listed, the primary Emergency Coordinator shall be identified and others shall be listed in the order in which they will assume responsibility to fulfill the requirements of this role.

1.05: continued

(7) Maintain and provide to the AHJ, a facility floor plan, not to scale, showing the locations of the hazardous material stored, the typical volumes, location of emergency spill containment equipment (pads, booms, *etc.*).

(8) For those facilities covered by Section 60.8 and having either Category 3, Category 4 and Category 5 processes, their Emergency Response Liaison personnel shall communicate to the fire department any concerns and establish a protocol in conjunction with the AHJ on the shutdown of any of the process that would pose a risk to the public in the event of loss of any controls. This protocol shall include a facility liaison to meet with the Incident Commander upon arrival to ensure a safe shutdown if necessary.

(9) Notify the AHJ of any material changes to the Emergency Response Plan, including the name of the primary Emergency Coordinator, within 14 calendar days of the change.

**60.5.1.19.1.1** Replace with the following:

**60.5.1.19.1.1** Underground storage tanks are regulated by 310 CMR 80.00: *Underground Storage Tank (UST) Systems*.

**60.7** Replace with the following:

**60.7 Performance Alternative.** In lieu of complying with Chapter 60 in its entirety, occupancies containing high hazard Level 1 to high hazard Level 5 contents shall be permitted to comply with Chapter 10 of NFPA 400, *Hazardous Materials Code*, subject to an independent review in accordance with Section 1.15 and a copy, including its recommendations, shall be submitted to the Building Official.

**60.8** through **60.8.1.1(20)** Add:

**60.8 Hazardous Material Process or Processing.**

**60.8.1 General.** This section shall apply to both new and existing facilities that process hazardous materials.

**60.8.1.1** This section shall not apply to the following:

- (1) Motor vehicle service stations regulated in accordance with Chapter 30;
- (2) Construction and maintenance projects regulated in accordance with this *Code*;
- (3) Products that are designed pre-mixed in accordance with the manufacturer's instructions or products that are labeled and packaged for sale to the consumer at retail;
- (4) The activities of healthcare professional offices or facilities under the supervision of a licensed medical doctor, dentist, or veterinarian;
- (5) Retail facilities such as pharmacies, hardware stores, department stores, or restaurants regulated by and in accordance with the provisions of this *Code*;
- (6) Refrigeration systems which employ a refrigerant other than ammonia or LPG;
- (7) The processing or treatment of potable water and sanitary wastewater;
- (8) Wastewater treatment operations that are operated by Grades 1I, 1M, 2I, and 2M operators as classified according to 257 CMR 2.00: *Certification of Operators of Wastewater Treatment Facilities*;
- (9) The consumption of fuels solely for the purpose of the operation of equipment, such as generators, torches, and consumptive use boilers regulated in accordance with the provisions of this *Code*;
- (10) The storage of hazardous materials in atmospheric vessels, if they are maintained below the stored material's normal boiling point without benefit of chilling, refrigeration, or heat;
- (11) The processing of hazardous materials and their byproducts which has a hazard ratings of two or less, according to criteria of NFPA 704;
- (12) Hazardous waste activities regulated and in compliance with the provisions of 310 CMR 30.00: *Hazardous Waste*;
- (13) Biological and medical activities regulated by the Department of Public Health;
- (14) Handling and use of liquid nitrogen cooling systems at atmospheric pressure;
- (15) The handling and repackaging of products regulated in accordance with the provisions of this *Code*;
- (16) Use of inert gas;
- (17) Swimming pools regulated by Department of Public Health under 105 CMR 435.000: *Minimum Standards for Swimming Pools (State Sanitary Code: Chapter V)*;



1.05: continued

(18) Air pollution control devices that are a component of a process regulated by Massachusetts Department of Environmental Protection under 310 CMR 7.00: *Air Pollution Control*;

(19) The production and handling of explosives and fireworks regulated in accordance with Chapter 65;

(20) The equipment, process, handling, storage, or use of compounds, liquids, pesticides, fertilizers, or soil treatments regulated in accordance with the provisions of this *Code* or as regulated by 248 CMR: *Board of State Examiners of Plumbers and Gas Fitters*.

**60.8.1.1.1 Add:**

**60.8.1.1.1 Permits.** Permits where required, shall comply with Section 1.12.

**60.8.2 Add:**

**60.8.2 Terms.** As used in Chapter 60, the enclosed terms shall have the following meaning assigned to them.

**60.8.2.1 through 60.8.2.3(6) Add:**

**60.8.2.1 Capacity.** The nominal capacity of the vessel as specified by the manufacturer.

**60.8.2.2 Category 3 Hazard Evaluation.** A written evaluation performed or procedure conducted to identify hazards, including adjacent vessels that contain hazardous materials, and determine the required preventive, protective, and safety control measures in conformance with recognized and generally accepted good engineering and safe work practices associated with a particular process or condition and the facility wherein such process or condition is taking place.

**60.8.2.3 Category 4 Limited Safety Program.** A documented evaluation, policy, or required procedure to ensure compliance with all of the following:

(1) Process information including, but not limited to, MSDS for the chemicals and products being processed, process chemistry, piping and instrumentation diagram, safety relief design, process control safety alarms and interlocks;

(2) Facility suitability including, but not limited to, the *Building Code* compliance, electrical hazard (Check article 500) classification, ventilation design, fire alarm and fire protection, spill containment and control;

(3) A process hazard safety analysis including but not limited to, effects in the event of failure, suitable administrative and engineering controls to minimize failure and to control unanticipated releases, and emergency responses to safeguard life and property;

(4) Written procedures, including routine operating and maintenance, as well as precautionary, shut-down and emergency response measures;

(5) A written training program for operating and maintenance personnel and outside contractors whose work or activity may affect process safety;

(6) A written records management protocol which tracks any changes, including but not limited to changes to chemicals, equipment, operating procedures training program. Such records shall include the date of such change and the name of the manager responsible for such change; and an internal review at a maximum every three years.

**60.8.2.5 through 60.8.2.8 Add**

**60.8.2.5 Competent Professional.** A person who, based upon education, training, skill, experience or professional licensure or a combination thereof, has a specialized knowledge beyond that of an average person, about risk assessment, process hazard analysis, and/or process safety management principles, for the process or processes being evaluated.

**60.8.2.6 Facility.** A structure, building or complex of buildings or structures where hazardous materials are processed.

**60.8.2.7 Facility Category.** Since multiple hazardous material processes may exist within a facility, each facility shall identify all the categories of processes present and verify compliance with all the categories for each process identified at the facility.

**60.8.2.7.1** For purposes of determining facility category classification under Section 60.8, the highest level of actual or possible hazardous process category shall determine the appropriate Facility Category.

1.05: continued

**60.8.2.8 High-hazard Group H.** High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with the *Building Code*.

**60.8.2.9 Add:**

**60.8.2.9 Incident.** An unplanned event arising from a hazardous material process resulting in a fire, explosion, reportable release, or injury.

**60.8.2.10 Add:**

**60.8.2.10 Mixture.** A combination of materials in a vessel. The mixture shall be considered a different material from those before being added to the vessel, regardless of whether a reaction or change of state occurred in the vessel, and regardless of whether the mixture is homogeneous or heterogeneous. Material hazards of the mixture shall be classified based on the hazards of the mixture as a whole, in accordance with nationally recognized reference standards, by an approved qualified organization, individual, or Material Safety Data Sheets (MSDS), or by other approved methods.

**60.8.2.11 Add:**

**60.8.2.11 Person.** An individual, firm, corporation, company, partnership, association, including any officer, trustee, assignee, receiver, personal representative, designee, manager or employee thereof.

**60.8.2.12 Add:**

**60.8.2.12 Vessel.** The container in which partial or the actual process takes place. Examples of vessels are beakers, pails, tanks, reactor kettles, pipe reactors, and drums. The size of a vessel is its capacity.

**60.8.3 through 60.8.3.5 Add:**

**60.8.3 Hazardous Process Category.** Hazardous Material processes shall be defined per 60.8.3.1 through 60.8.3.5.

**60.8.3.1 Category 1 Process.** A process which involves or produces a Hazardous Material which occurs in a vessel with a capacity that is less than or equal to 2.5 gallons.

**60.8.3.2 Category 2 Process.** A process which involves or produces a Hazardous Material which occurs in a vessel with capacity that is greater than 2.5 gallons but less than or equal to 60 gallons.

**60.8.3.3 Category 3 Process.** A process which involves or produces a Hazardous Material which occurs in a vessel that is greater than 60 gallons but is less than or equal to 300 gallons that contains a hazardous material that is processed or a process area that is classified as being a H Occupancy as defined by the *Building Code*.

**60.8.3.4 Category 4 Process.** A process which involves or produces a Hazardous Material which occurs in a vessel with a capacity that is greater than 300 gallons and is not considered a Category 5 Process.

**60.8.3.5 Category 5 Process.** A process which involves or produces Hazardous Material which occurs in a vessel with a capacity that is equal or in excess of threshold quantities stated in 29 CFR 1910.119 or 40 CFR Part 68 and regulated by such standard.

**60.8.3.6 through 60.8.3.6.1 Add:**

**60.8.3.6 Multiple Processes.** Since multiple hazardous material processes may exist within a facility, each facility shall identify all the categories of processes present and verify compliance with all the categories for each process identified at the facility.

**60.8.3.6.1** For purposes of determining category classification under this *Code* the actual or possible Hazardous Processing activity shall determine the appropriate Category.

**60.8.4 Add:**

**60.8.4 Permits.** Permits, where required, shall comply with Sections 1.12 and 60.8.4.1 through 60.8.4.4.

1.05: continued

**60.8.4.1 through 60.8.4.1.2 Add:**

**60.8.4.1** No person shall engage in the Process or Processing of any Hazardous Material at any Facility identified in Section 60.8 as Category 2 through Category 5 unless said Facility is in compliance with the permit requirements of the provisions of this *Code*.

**60.8.4.1.1** A permit holder shall apply for the renewal of said permit on an annual basis.

**60.8.4.1.2** The application shall contain such information and be in a form as prescribed by the State Fire Marshal.

**60.8.4.2 Add:**

**60.8.4.2** An applicant for the permit required by Section 1.12 shall submit an application for Permit to Process Hazardous Material to the Head of the Fire Department on a form prescribed by the State Fire Marshal.

**60.8.4.3 Add:**

**60.8.4.3** As provided in M.G.L. c. 148, § 10A the AHJ may deny or withhold the issuance of a permit however, such denial or withholding shall be in writing. Said notice of denial shall contain specifications of the alleged violation or deficiency together with their interpretation of Section 60.8. The AHJ shall be permitted to require technical assistance in accordance with Section 1.15 to evaluate the adequacy of Category 3 or Category 4 process safety conditions, programs, procedures, and practices undertaken at the facility but only after a notice of denial has been properly served upon the person making application.

**60.8.4.4 Add:**

**60.8.4.4** Any person who has been permitted to engage in the Process or Processing of Hazardous Material at any Facility or any person creating a new process facility, shall, prior to engaging in any new or modified hazardous material process activity which results in a change to the highest process category authorized by the current permit, notify the Head of the Fire Department of such new change or modification and submit a new application to appropriately modify the existing permit.

**60.8.5 Add:**

**60.8.5 Compliance Requirements.**

**60.8.5.1 Add:**

**60.8.5.1** Facilities operating hazardous material processes as defined by this *Code* shall maintain, for each process in their facility, the following required documents and procedures at their facility for periodic inspection and review by the Head of the Fire Department to remain in compliance with this Section.

**60.8.5.1.1 through 60.8.5.1.1(4) Add:**

**60.8.5.1.1 Category 1 Process Documents.** Provide the following documentation for Category 1 processes.

- (1) Documentation that adequately demonstrates that the facility maintains and implements a policy in compliance with 29 CFR 1910.1200 and 29 CFR 1910.1450 as applicable, and
- (2) Documentation that adequately demonstrates that the facility maintains and implements a policy in compliance with Chapter 66, *Flammable and Combustible Liquids*, Chapter 67, *Flammable Solids*, as applicable, and
- (3) Demonstrate compliance with Sections 60.1.5.1 *Emergency Action Plan* and Sections 60.5.1.4.3.2 (5) through (9).
- (4) Comply with the permitting requirements of Sections 1.12 and 60.8.4.

**60.8.5.1.2 through 60.8.5.1.2(1) Add:**

**60.8.5.1.2 Category 2 Process Documents.** Provide the following documentation for Category 2 processes.

- (1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 1 Process in accordance with Section 60.8.5.1.1.

**60.8.5.1.3 through 60.8.5.1.3(5) Add:**

**60.8.5.1.3 Category 3 Process Documentation and Analysis.** Provide the following documentation and evaluations for Category 3 processes.

- (1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 2 Process in accordance with Section 60.8.5.1.2; and

## 1.5 : continued

- (2) Complete a Category 3 Hazard Evaluation for each Category 3 process; and
- (3) Ensures a Hazard Evaluation policy is in place and has been completed prior to conducting such process or activity modification thereto; and
- (4) Implement appropriate process safety controls to mitigate the hazards associated with normal and abnormal operating conditions as identified in the Category 3 Hazard Evaluation; and
- (5) Maintain Category 3 Hazard Evaluation documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

**60.8.5.1.4 through 60.8.5.1.4(5) Add:**

**60.8.5.1.4 Category 4 Process Documentation and Analysis.** Provide the following documentation and evaluations for Category 4 processes.

- (1) Provide documentation that adequately demonstrates that the facility complies with the requirements for a Category 3 Process in accordance with Section 60.8.5.1.3; and
- (2) Complete a Category 4 Limited Process Safety Program for each Category 4 Process.
- (3) Ensure a Category 4 Limited Process Safety Program policy is in place and has been completed prior to each process or being modified.
- (4) Implement appropriate process safety controls to mitigate the hazards associated with normal and abnormal operating conditions as identified in the Category 4 Process Limited Safety Program; and
- (5) Maintain Category 4 Limited Safety Program documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

**60.8.5.1.5 through 60.8.5.1.5(3) Add:**

**60.8.5.1.5 Category 5 Process Documentation and Analysis.** Provide the following documentation and evaluation for Category 5 processes.

- (1) Provide documentation that adequately demonstrates that the facility complies with the requirements for Category 4 process in accordance with Section 60.8.5.1.4; and
- (2) Implement and self-certify compliance with 29 CFR 1910.119 *Process Safety Management of Highly Hazardous Chemicals* program or with 40 CFR Part 60 *Chemical Accident Prevention Provisions*.
- (3) Maintain Hazard Evaluation documents and records for review by the Head of the Fire Department or Marshal for a minimum of two years following issuance of a permit.

**60.8.6 through 60.8.6.1.3(4) Add:**

**60.8.6 Post-incident Analysis.**

**60.8.6.1** Post-incident analysis shall be applicable to Category 3 and Category 4 processes. For a Category 5 Process, a copy of the report submitted in accordance with the OSHA or EPA Risk Management Standard, shall be considered acceptable.

**60.8.6.1.1** In the event of an incident involving a process in which there is fire department, EMS response, or a notification of unauthorized release, a written post incident analysis must be initiated within 48 hours. Upon completion of the analysis, the AHJ shall be given a duplicate copy of the analysis.

**60.8.6.1.2** A completed post-incident written analysis report shall be completed within 45 days, unless an extension is provided by the AHJ for just reason.

**60.8.6.1.3** The post-incident analysis report shall provide the following information:

- (1) A summary of the cause of the incident and contributing factors;
- (2) Recommendations to prevent a future recurrence;
- (3) A summary of the dates of implementation of the post-incident analysis recommendations and corrective actions;
- (4) A reassessment and confirmation of the category under which the facility is operating or application for a new permit as part of the report.

**60.8.7 through 60.8.7.3(4) Add**

**60.8.7 Trade Secrets.** A facility owner or operator subject to this *Code* and required to submit to the AHJ a permit application and/or supporting documents may claim information as a trade secret as provided in this Section.



1.05: continued

**60.8.7.1** A facility owner/operator shall be permitted to withhold the name of a specific hazardous material when notifying the fire department under Section 60.8 if that chemical is claimed as a trade secret or confidential business information.

**60.8.7.2** If the hazardous material is claimed as a trade secret:

- (1) The generic class or category that is structurally descriptive of the chemical must be provided on the permit application as a matter of public record;
- (2) The Material Safety Data Sheet (MSDS) for the hazardous substance shall be available for review on-site by representatives of the Fire Department or the State Fire Marshal.

**60.8.7.3** A facility owner or operator shall be permitted to claim information, required under this *Code*, is treated as confidential and not as a matter of public record if:

- (1) The information has not been disclosed to anyone else, other than employees of the facility or the AHJ, an officer or employee of the United States or a state or local government, or anyone who is bound by a confidentiality agreement;
- (2) The facility has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures;
- (3) The information is not required to be disclosed, or otherwise made available to the public under any other federal or state law; and
- (4) Disclosure of the information may cause substantial harm to the competitive position of the facility.

**60.8.7.4** Add:

**60.8.7.4** All documentation and records claimed as trade secret or confidential information, including but not limited to the “Permit to Process Hazardous Material Application”, “hazard evaluation documentation”, “process safety program documentation”, shall be clearly marked as “Trade Secret”, “Confidential”, or other words of similar meaning.

## Chapter 65 Explosives, Fireworks, and Model Rocketry

**Title of Chapter 65.** Modify by adding Cannons, and Mortars to the end of the title **Explosives, Fireworks, Model Rocketry, Cannons, and Mortars.**

**65.1.3** Add:

**65.1.3 Certificates.** Certificates, where required, shall comply with Section 1.13.

**65.1.4** Add:

**65.1.4** As used in Chapter 65 the enclosed terms shall have the following meaning assigned to them.

**65.1.4.1 through 65.1.4.3** Add:

**65.1.4.1 Barrier.** as used in Chapter 65, is an object or structure, such as, but not limited to, a fence with warning sign, or tape, that prohibits or restricts passage or travel.

**65.1.4.2 Natural Barrier.** A restrictive terrain, or body of water, that in itself, will assist in restricting the display area at a fireworks show without the need for an additional barrier to be erected. Natural barriers must be approved by the State Fire Marshal in advance of a show.

**65.1.4.3 Physical Barrier.** A structure of substantial strength that is uniformly supported and provides an uninterrupted barrier both vertically and horizontally that consists of a height no less than 40 inches including, but not limited to, snow fencing or its equivalent.

**65.2.1** Replace with the following:

**65.2.1** The construction, handling, and use of fireworks intended solely for outdoor display as well as the general conduct and operation of the display, shall comply with the requirements of NFPA 1123, *Code for Fireworks Display*, including its annexes A, D and E.

**65.2.3** Add:

**65.2.3** All storage of display fireworks shall comply with NFPA 1124, *Code for the Manufacture, Transportation, Storage, and Retail Sales of Fireworks and Pyrotechnic Articles*.



1.05: continued

**65.2.4 through 65.2.4.3.1.2 Add:**

**65.2.4 Delivery of Fireworks.**

**65.2.4.1** Delivery of fireworks shall be made only to authorized persons who are in possession of a valid Certificate of Competency (Fireworks Display) and a Permit to Display Fireworks (Supervised Display of Fireworks).

**65.2.4.2** As soon as the fireworks have been delivered to a display site, they shall not be left unattended, and they shall be kept dry.

**65.2.4.3** Upon delivery of the fireworks to the display site, members of the public, the audience, spectators, and other persons not otherwise authorized by the AHJ, shall be kept at a distance not less than those specified in NFPA 1123, Table 5.1.3.1 *Distances for Outdoor Aerial Shell Display Sites: Minimum Separation Distances from Mortars to Spectators for Land or Water Displays*.

**65.2.4.3.1** Where it is impractical to locate the delivery vehicle within the perimeter of the display site the vehicle shall be parked and secured.

**65.2.4.3.1.1** The minimum secured radius from any point of transfer of fireworks from the vehicle to the display site shall be 150 ft.

**65.2.4.3.1.2** Audience members, spectators and the general public shall not be allowed within this area.

**65.2.5 through 65.2.5.2.3 Add:**

**65.2.5 Requirements for Display Fireworks.**

**65.2.5.1** The audience at a supervised display of fireworks shall be restrained behind a physical or natural barrier.

**65.2.5.1.1** Such barrier shall clearly define the restricted display site.

**65.2.5.1.2** This restricted area shall be defined based on the minimum separation distances specified by NFPA 1123, Table 5.1.3.1 *Distances for Outdoor Aerial Shell Display Sites: Minimum Separation Distances from Mortars to Spectators for Land or Water Displays*.

**65.2.5.2** The operator for use at all times a portable anemometer or similar device for measuring wind velocity shall have available.

**65.2.5.2.1** Any supervised display of fireworks shall be stopped immediately in the event that upper level wind conditions cause the fall out area to change and pose a threat to public safety or property.

**65.2.5.2.2** A test shot shall be provided to check for high level winds at the request of the AHJ.

**65.2.5.2.3** The term high winds as used in this section are when the wind velocity exceeds 20 miles per hour at ground level.

**65.2.6 through 65.2.6.1(3) Add:**

**65.2.6 Nighttime Fireworks.** Where fireworks are displayed at night, a thorough search of the display site shall be made by the competent operator immediately after the display and again at first light the following morning to ensure recovery of all unexploded shells.

**65.2.6.1** If the competent operator is unavailable due to unforeseen circumstances such as illness or injury, a substitute competent operator, upon approval of the AHJ, shall be permitted conduct the aforementioned searches. A thorough search shall include, but not be limited to:

- (1) A Search as described above;
- (2) Completed form prescribed by the State Fire Marshal that indicates the start and stop time of the search; and
- (3) Acknowledgement by the operator and Head of the Fire Department or his or her designee that they have completed the requirements of this section.

1.05: continued

**65.2.7 through 65.7.1 Add:**

**65.2.7 Fire Department Coordination.** The sponsor shall be responsible for the detailing of one or more members of the fire department as may be required by the Head of the Fire Department.

**65.2.7.1** The fire department detail shall be on duty from the time the fireworks are delivered to the site until the termination of the display and removal of all fireworks and debris from the site and in compliance with Section 65.2.6.

**65.2.8 through 65.2.8.1 Add:**

**65.2.8 Mortar and Shells.**

**65.2.8.1** No fireworks display shall include mortars or shells in excess of 12 inches in diameter, unless the certificate holder shall have obtained prior written approval from the State Fire Marshal.

**65.2.8.2 through 65.2.8.2.1 Add:**

**65.2.8.2** Multiple shot mortar devices using mortars less than three inches in diameter including, but not limited to cakes, and repeaters, shall be buried of ~~the~~ their length in a trench, mortar trough, or sturdy drum filled with clean sand or substantial wooden boxes.

**65.2.8.2.1** The Head of the Fire Department shall be permitted to allow for an equivalent alternative, such as sandbags or racks constructed with material similar to mortar rack construction, provided the same degree of protection is provided.

**65.2.8.3 Add:**

**65.2.8.3** The use of aluminum mortars is prohibited.

**65.2.8.4 Add:**

**65.2.8.4** All supervised displays of fireworks shall be electrically fired. Mortars shall not be reloaded.

**65.2.8.5 through 65.2.8.5.4 Add:**

**65.2.8.5 Electrical Firing Units.**

**65.2.8.5.1** All electrical firing units shall display a decal issued by the State Fire Marshal for a term determined by the State Fire Marshal.

**65.2.8.5.2** The panel shall contain a key operated safety switch which controls the overall power and functionality of the firing unit.

**65.2.8.5.3** The unit shall be operated in accordance with the manufacturer's instructions.

**65.2.8.5.4** All electrical firing units, and any associated devices, wiring, or connections shall be adequately maintained.

**65.2.8.6 through 65.2.8.6.8 Add:**

**65.2.8.6 Racks.**

**65.2.8.6.1** Parallel racks or rows of racks shall be separated by a minimum distance not less than twice the inside diameter of the largest mortar in an adjacent rack.

**65.2.8.6.2** Dense Pack Modular Racks, approved for use on licensed trailers and trailer launched portable barges shall be permitted.

**65.2.8.6.3** Dense Pack Modular Racks shall be made of aluminum or other suitable metal framework system and shall be subject to restrictions and inspections as established by the State Fire Marshal.

**65.2.8.6.4** All mortars approved for use in dense pack modular racks must be secured to the framework system.

**65.2.8.6.5** Only single break shells shall be fired.

**65.2.8.6.6** Dense Pack Modular Racks shall be permitted to be placed on firm ground, bridge, barge or secured to an approved trailer or barge licensed for the use of firing display shells utilizing dense pack modular racks.

1.05: continued

**65.2.8.6.7** Dense Pack Modular Racks placed on the ground or on a barge, not part of an approved trailer or barge system shall be placed in rows of racks separated by twice the diameter of the largest mortar within the rack.

**65.2.8.6.8** Parallel rows of racks shall be separated by a minimum distance not less than 24 inches.

**65.3.4** Add:

**65.3.4** The use of pyrotechnic special effects indoors is prohibited in nightclubs, discotheques, dance halls, bars, or similar occupancies (defined as A-2 or A-3 by the *Building Code*).

**65.3.5** Add:

**65.3.5** The use of pyrotechnic special effects indoor in entertainment venues (defined as A-3 by the *Building Code*) and theatres (defined as A-1 by the *Building Code*) shall be permitted provided the facility is protected throughout with automatic sprinklers.

**65.3.6** Add:

**65.3.6** Approval of the use of pyrotechnic special effects shall be subject to such terms and conditions as the Head of the Fire Department may require.

**65.3.7** Add:

**65.3.7** No bombs, salutes, roman candles, skyrockets, firecrackers, torpedoes, or similar pyrotechnic shall be used before a proximate audience unless specifically approved in writing by the State Fire Marshal.

**65.3.8** Add:

**65.3.8** The theatre, auditorium, or similar facility shall certify that the proscenium protection is in compliance with the *Building Code*.

**65.3.9** Add:

**65.3.9** Electrical firing panels shall comply with Sections 65.2.12 and 65.2.13. A performer shall not be required to comply with Section 65.2.12, if firing a single special effect.

**65.4.1.1** Add:

**65.4.1.1** The use of flame effects indoors is prohibited in nightclubs, discotheques, dance halls, bars, or similar occupancies. The use of flame effects indoors, in entertainment venues (defined as A-3 by the *Building Code*) and theatres (defined as A-1 by the *Building Code*), shall be permitted provided the facility is protected throughout with automatic sprinklers.

**65.5.1** Replace with the following:

**65.5.1** The manufacture, transportation, or storage of fireworks shall comply with NFPA 1124 Chapters 1 through 5 and Chapter 8. Chapters 6 and 7 Delete.

**65.5.1.2** Add:

**65.5.1.2 Permits.** Permits, where required, shall comply with Section 1.12.

**65.5.1.3** Add:

**65.5.1.3** No person shall manufacture fireworks except in accordance with this *Code*. The manufacture of any fireworks, as defined in this *Code*, shall be prohibited unless it is authorized by federal license or permit, and a license issued by the local licensing authority and a permit issued by the State Fire Marshal.

**65.6.1** Add:

**65.6.1 Permit.** Permits, where required, shall comply with Section 1.12.

**65.7.2** Delete.

**65.9.1** Replace with the following:

**65.9.1** The manufacture, transportation, storage, sale, and use of explosive materials shall comply with NFPA 495: *Explosive Materials Code, including appendix A, C, D and E*, and NFPA 498, *Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives*.

1.05: continued

**65.9.1.1 Add:**

**65.9.1.1** All magazines containing explosive materials shall be opened and inspected at maximum intervals of seven days to determine whether there has been unauthorized or attempted entry into the magazines or whether there has been unauthorized removal of the magazines or their contents.

**65.9.1.2 Add:**

**65.9.1.2 Terms.** As used in Chapter 65, the enclosed terms shall have the following meaning assigned to them.

**65.9.1.2.1 through 65.9.1.2.2 Add:**

**65.9.1.2.1 Blasting Mat.** A mat of woven steel wire, rope, scrap tires, or other suitable material, earth fill or construction to cover blast holes, for the purpose of preventing flyrock.

**65.9.1.2.2 Blasting Operation.** Any person engaged in the conduct of blasting under the terms of a contract or otherwise.

**65.9.1.2.3 through 65.9.1.2.3.2 Add:**

**65.9.1.2.3 Special Industrial Explosives Device.** Shaped materials, sheet forms, and various other extrusions, pellets, and packages of high explosives used for high-energy-rate forming, expanding, and shaping in metal fabrication and for dismemberments and reduction of scrap metal.

**65.9.1.2.3.1** The high explosives used include dynamite, trinitrotoluene (TNT), PETN, and cyclotrimethylenetrinitramine (RDX).

**65.9.1.2.3.2** Special industrial explosive material shall also include explosive materials used exclusively for research and development including, but not limited to, explosive detection and explosive safety.

**65.9.4 through 65.9.4.1(8) Add:**

**65.9.4 Storage of Explosives on Water.**

**65.9.4.1** No person shall store any explosives on the waters of the Commonwealth unless a permit for such storage has been secured from the State Fire Marshal, and unless the explosives are stored in accordance with the following requirements:

- (1) Such explosives shall be stored in a magazine located on a boat or vessel used exclusively for the purpose, and such boat or vessel shall be securely moored or anchored according to the direction of the harbor master. The storage magazines shall be subject to the requirements of Chapter 65;
- (2) No detonators shall be stored or transported on a boat or vessel on which any explosives are kept or stored, except in accordance with the applicable provisions of Chapter 65;
- (3) No explosives shall be delivered or removed from a boat or vessel during foggy weather;
- (4) In the loading or unloading of any explosive, care shall be taken in the handling of same and it shall be so placed or stowed as to prevent displacement during transit;
- (5) No explosives shall be carried or transported on the waters of the Commonwealth on any vessel which is carrying passengers;
- (6) Any vessel containing explosives in transit on any of the waters of the Commonwealth shall display on a suitable staff an international Code Flag B (a red flag) readily discernible from a distance of not less than 1,000 feet by day and which shall be properly illuminated at night;
- (7) No smoking shall be allowed on any vessel containing explosives;
- (8) All such boats and vessels shall display the word "EXPLOSIVES" in a conspicuous manner so that it shall be permitted to be seen by day from all sides at a distance of not less than 200 feet, and shall be properly illuminated at night.

**65.9.5 through 65.9.5.5.1 Add:**

**65.9.5 Magazines.** The requirements of Section 65.9 shall be in addition to applicable U.S. Department of Transportation (U.S. Coast Guard) Regulations, 33 CFR 126, and 46 CFR 194.

1.05: continued

**65.9.5.1 Magazine Alteration.** No alteration changing the constructed storage capacity of a magazine shall be made without notifying the State Fire Marshal and the Head of the Fire Department in writing and then receiving written acknowledgment of receipt of the notification from the State Fire Marshal and the Head of the Fire Department.

**65.9.5.2 Equivalent Alternate Construction Standards.** Alternate storage facilities for explosive materials shall be permitted to be approved by the State Fire Marshal when it is shown that such alternate facilities are or will be constructed in a manner substantially equivalent to the standards of construction contained in Chapter 65 and such construction has been approved in accordance with 27 CFR 201(b).

**65.9.5.3** Magazines shall be sequentially numbered by a minimum of two inch block numbers plainly visible on the outside.

**65.9.5.3.1** This number shall correspond to those drawn on a storage facility site diagram, drawn to scale, clearly indicating the separation distances between magazines, inhabited buildings, railways, highways, and other magazines.

**65.9.5.4** The owner shall plainly post on the interior side of the magazine door the current Table of Distance storage capacity.

**65.9.5.5** Each magazine shall at all times be under the control of a competent person.

**65.9.5.5.1** This shall mean that any penetration of the magazine or magazine area shall be protected by the continuous surveillance of an individual or by an electronic sensing device which shall upon such penetration notify either the police or fire department, as the Head of the Fire Department may direct.

**65.9.6 through 65.9.6.5.1 Add:**

**65.9.6 Operational Procedure Manual for Storage of Explosives.** A Magazine Facility Operational Procedure Manual shall be maintained on the storage facility which shall include the following:

- (1) facility emergency policy and procedures;
- (2) administrative and emergency notification procedures;
- (3) scaled plot plan of the storage facility site;
- (4) showing magazines, inhabited buildings railways and highways within 2,000 feet of the closest magazine, Explosive Material Manufacturers Safety Data Sheets (MSDS) for all explosive materials and SARA Title III Hazardous Materials on the site.

**65.9.6.1** This manual shall be kept current and a copy provided upon request to the Head of the Fire Department and the State Fire Marshal or their designees.

**65.9.6.2** A magazine facility containing 10,000 or less pounds of explosive materials shall be exempt from this requirement.

**65.9.6.3** Delivery of explosives shall only be made to persons displaying proper permits and licenses and shall be delivered into magazines or temporary storage or handling areas as authorized by this *Code*.

**65.9.6.4** No person shall deliver explosive materials to any magazine, building or structure that is not permitted by the State Fire Marshal.

**65.9.6.5** Any person who delivers explosive materials shall keep a record of the delivery transaction.

**65.9.6.5.1** The record shall contain the permit number assigned by the State Fire Marshal to the magazine, building or structure where said materials are to be stored.

**65.9.7 Add:**

**65.9.7** Explosives shall be transported in accordance with 29 CFR 1926.903.

**65.9.8 through 65.9.8.4.3 Add:**

**65.9.8 Blast Analysis.** Before conducting a blast, the blaster shall conduct a blast analysis of the overall factors affecting the blasting operations. This analysis shall consider;

- (1) adjacent area structure(s), building(s), building foundations, utilities, including gas and water supply lines, septic systems and swimming pools,



## 1.05: continued

- (2) area geology within 250 ft. (76.2 m) of the center of the blast site,
- (3) the identification of commercial equipment such as computers, electron microscopes, laser equipment, relays *etc.*, which are sensitive to vibrations,
- (4) other underground objects that might be damaged by the effects of a blast.

**65.9.8.1** A blast analysis shall be compared to the blast design plan to establish a sound relationship between the blast design and the effects of blasting upon the neighborhood within the blast area.

**65.9.8.1.1** The blast analysis shall contain a discussion of plan factors to be used which protect the public and meet the applicable airblast, flyrock, and ground vibration standards.

**65.9.8.2** The area of the blast analysis shall be within 250 ft. (76.2 m) from the closest borehole.

**65.9.8.3 Blast Plan.** When blasting is done in a congested area or within 250 ft. (76.2 m) of a building, structure, railway, or highway, or any other installation that may be affected, precautions shall be taken by the blaster in the design of the blast plan to prevent damage and to minimize adverse effects including ground vibrations, air overpressure and flyrock.

**65.9.8.3.1** Such precautions shall include but not be limited to, review of each shot variable or dimension to ensure a blast design plan which establishes sound relationships between current industry standards and the allowable limits of the effects of blasting.

**65.9.8.3.2** A blast design plan shall describe as a minimum, the amount of material to be removed, benches and lifts, sketches of proposed drill patterns, spacings, free face, borehole size, depth, and angle, stemming, decking, weight of explosive material per delay, delay periods, initiation techniques, the amount of explosive material to be used, critical dimensions, location and descriptions of building(s) and structure(s) to be protected, their number, and the placement of seismographs.

**65.9.8.3.3** All shots shall be designed using the most current industry standards, to prevent excessive air overpressure, ground vibration, and flyrock.

**65.9.8.4 Blasting Precautions.** Blasting mats shall be required if the material to be blasted lies within 100 feet of a highway, an inhabited building or structure not under the control of the project.

**65.9.8.4.1** A blaster authorized to prepare explosive charges or to conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags, barricades, or other equally effective means to ensure the safety of the general public and workers.

**65.9.8.4.1.1** A code of blasting signals shall be posted on one or more conspicuous places at the operation.

**65.9.8.4.1.2** All employees shall be required to familiarize themselves with the blasting signal code. The code shall be:

- (1) WARNING SIGNAL: Three long blasts five minutes prior to blast signal.
- (2) BLAST SIGNAL: Two blasts one minute prior to the shot.
- (3) ALL CLEAR SIGNAL: A prolonged blast following the inspection of the blast area.

**65.9.8.4.2** Blast signals shall be clearly audible for a distance of 250 ft. (76.2 m) of the blast site.

**65.9.8.4.3** No person shall fire a blast in any blasting operation on Sunday or between the hours of sunset and sunrise unless otherwise authorized in writing by the State Fire Marshal or the Head of the Fire Department, but in any case the authority of the State Fire Marshal shall prevail.

**65.9.10 Add:**

**65.9.10** No blast shall be fired without a positive signal from the blaster-in-charge and only the blaster-in-charge shall fire the blast.

**65.9.12 through 65.9.12.2 Add:**

**65.9.12** Whenever quarry blasting is conducted within 500 ft. (152.4 m) of building(s) used for human habitation a series of durable warning signs shall be erected along the entire perimeter of any rock face more than six feet high.

1.05: continued

**65.9.12.1** They shall be spaced not more than 75 ft. (22.86 m) apart and set back a reasonable distance from the face.

**65.9.12.2** Each sign shall contain the words "WARNING BLASTING AREA DANGER" in letters at least two inches in height. (*See St. 2014, c. 149, § 7: An Act Relative to Natural Gas Leaks.*)

**65.9.13** Add:

**65.9.13 Alternative Allowable Vibration Levels.** Alternative limits of the effect of blasting shall permitted to be adopted for quarry operations located adjacent to inner city areas as a local municipal regulation adopted in accordance with M.G.L. c. 148, § 9.

**65.9.14** through **65.9.14.4.5** Add:

**65.9.14 Blaster's Log.**

**65.9.14.1** A blaster who performs blasting operations shall maintain a blaster's log on a form approved by the State Fire Marshal recording each blast.

**65.9.14.1.1** The blaster's log shall be completed within six hours of a blast and retained for a minimum of three years from the date of the blast.

**65.9.14.1.2** Blasters' logs shall be made readily available to the State Fire Marshal, the Head of the Fire Department or their designees.

**65.9.14.1.3** The blaster's log shall contain:

- (1) Name, signature, and Certificate of Competency Number of the blaster in charge;
- (2) Blast location, address, city, description;
- (2) Date and time of blast;
- (4) Type of material blasted;
- (5) Distance, in feet, to the nearest inhabited building or structure, neither owned or leased by holder or holder client of the Explosives User Certificate;
- (6) Scaled distance or alternative option used to determine blast design;
- (7) Type of matting or cover over blast if applicable;
- (8) Weather conditions, including temperature, cloud cover, and wind direction;
- (9) Blast plan and sketch showing blast hole diameter, delay, delay pattern and types of detonators, spacing, depth of blast hole, hole pattern, and number of holes;
- (10) Explosive material type, size, total weights of each explosive by hole;
- (11) Type of initiation system (methods of firing and type of circuit);
- (12) Feet of over burden, depth, and type of stemming;
- (13) Maximum charge per delay;
- (14) The seismograph(s) location(s), including distance and direction from the seismograph to the closest borehole, and from the seismograph to the closest structure;
- (15) Seismograph readings, including peak particle velocity, frequency, and airblast;
- (16) Type of seismograph, instrument make, model serial number, calibration date, and sensitivity settings;
- (17) Name of person taking the seismograph reading. The name and firm analyzing the seismograph record if applicable; and
- (18) Complaints or comments following the blast.

**65.9.14.2** Blasts that exceed the maximum allowable peak particle velocity frequency or decibel levels established by Chapter 65 or are known by the blaster in charge to have produced flyrock, shall be reported to the Head of the Fire Department within 24 hours and a written report shall be provided within five days.

**65.9.14.4 Seismograph Placement.** The seismograph shall be placed at the nearest inhabited building adjacent to the blast area that is not owned, leased, or controlled by the blasting operation.

1.05: continued

**65.9.14.4.2** If there is no suitable location for seismograph placement within ten feet of the structure that is mutually agreed upon by the blaster and the Head of the Fire Department or his designee, the condition which made it unsuitable to place to seismograph within ten feet of the structure and the alternative location agreed upon by the Head of the Fire Department or his designee shall be noted, in writing, in the blastplan.

**65.9.14.4.3** If the person in control of said nearest structure refuses to grant permission for seismograph placement as required by this *Code* the Head of the Fire Department shall be immediately notified.

**65.9.14.4.3.1** Such refusal shall be further documented in writing by the blaster and be placed in the blasting record.

**65.9.14.4.3.2** Placement of the seismograph shall then be at a location mutually agreed upon by the blaster and the Head of the Fire Department or his or her designee.

**65.9.14.4.4** In the case of underground pipelines, bridges, roadways, steel construction, and other heavy construction, where prescribed vibration or airblast levels would be overly restrictive in relation to the nature of the project, vibrations and airblast levels in excess of the tables listed above shall be allowable when authorized in writing by the owner or representative of the owner of adjacent inhabited building(s) or structure(s) within the blast area.

**65.9.14.4.5** Seismograph monitoring shall be required for all blasting operations.

**65.9.15 through 65.9.15.1.13.2** Add:

**65.9.15 Pre-blast Inspection Surveys.**

**65.9.15.1** The intent of a pre-blast survey is to provide documentation of the existing physical condition of buildings and structures within the blasting area with the dimensions of each observed defect clearly noted.

**65.9.15.1.1** When blasting within 250 ft. (76.2 m) of a structure, as measured from the closest borehole to the structure, or structures, not owned or controlled by the project, a pre-blast inspection survey shall be offered.

**65.9.15.1.2** It shall be the responsibility of the blaster to notify structure owners of the survey.

**65.9.15.1.3** Surveys in excess of the above shall be permitted to be conducted at the discretion of the blaster.

**65.9.15.1.4** If the owner or occupant request surveys in excess of the above, the cost of the survey(s) shall be paid by the owner or occupant of the structure.

**65.9.15.1.5** The pre-blast survey shall document the existing visual conditions of the interior and exterior of the structure including improvements to the property and other physical factors that could reasonably be affected by the blasting.

**65.9.15.1.6** Structures such as pipelines, cables, transmission lines, cisterns, wells, and other water systems warrant special attention; however the assessment of these structures shall be permitted to be limited to surface conditions and other readily available data.

**65.9.15.1.7** The survey shall accurately record deficiencies by means of written notes, sketches, photographs, video tape, cassette tape narrative, or any other format or combination that sufficiently depicts the pre-existing conditions prior to the blasting.

**65.9.15.1.8** If the owner refuses the survey the inspector shall request that he sign a waiver of the survey.

**65.9.15.1.9** A pre-blast survey waiver shall be made on a form approved by the State Fire Marshal.

**65.9.15.1.10** If the owner or occupant refuses to sign a waiver, the inspector shall sign the waiver attesting to the refusal.

**65.9.15.1.11** Three attempts shall be made to contact the owner to offer the survey.

1.05: continued

**65.9.15.1.11.1** If no response is made after the second attempt, or the owner refuses to sign a survey waiver, a notice offering the survey shall be sent via any carrier capable of providing a receipt of delivery.

**65.9.15.1.11.2** A receipt of delivery shall satisfy this requirement.

**65.9.15.1.12** Surveys shall be conducted by technicians familiar with construction methods and materials, familiar with blasting procedures, and this *Code*.

**65.9.15.1.13** When a blast inspection is made, the results of that inspection shall be permitted to only be made available to the Head of the Fire Department, the State Fire Marshal or their designees upon request with the written consent of the occupant of the structure.

**65.9.15.1.13.1** The blast inspection shall be made available to the owner of the inspected property within a reasonable time after request is made in writing.

**65.9.15.1.13.2** Failure to provide a blast inspection report within 30 days of such request shall be grounds for revocation of a Use and Handling Permit.

**65.9.16** Add:

**65.9.16** Underwater blasting shall be conducted in accordance with 29 CFR 1926.912.

**65.9.17** through **65.9.17(5)** Add:

**65.9.17 Charge Activated Device.** The use of charge activated devices shall comply with the following:

- (1) Use and Handling Permits shall be obtained as required in Section 1.12.
- (2) The charge activated device shall be exempt from the following, blast analysis and the use of a seismograph. However, the blast design plan is required.
- (3) A blaster's log shall be maintained.
- (4) Matting of sufficient size and strength shall be utilized during all detonations.
- (5) All holes must be drilled to the manufacturer's specifications and no hole shall be re-drilled.

**65.9.18** through **65.9.18.5** Add:

**65.9.18 Blasting Regulatory Review.**

**65.9.18.1** Any person or firm alleging damage as a result of blasting operations shall make a complaint on a "Blasting Regulatory Review" form approved by the State Fire Marshal and obtained from the fire department of the city or town where damage occurred.

**65.9.18.1.1** The Blasting Regulatory Review Form shall contain a signed certification.

**65.9.18.1.2** Completed forms shall be returned within 30 days of the blasting incident to the Head of the Fire Department.

**65.9.18.2** The Head of the Fire Department upon receiving a Blasting Regulatory Review Form shall cause the holder of the "Explosives Users Certificate" and the blaster in charge, to report to the fire department with copies of pertinent blasters' logs for the dates in question and to provide copies of the blaster's log for the dates alleged.

**65.9.18.2.1** The blaster in charge shall be interviewed and blast logs examined to determine any violations of this *Code*.

**65.9.18.2.2** The fire department authority shall record the results of his or her inquiry on the Blasting Regulatory Review Form.

**65.9.18.3** The Head of the Fire Department shall retain the original of the Blasting Regulatory Review Form and forward a copy to the State Fire Marshal's Office.

**65.9.18.4** The holder of the Explosives Users Certificate shall receive a copy of the complaint form and acknowledge receipt by signature and date in the space provided on the complaint form.

**65.9.18.5** The holder of the Explosives Users Certificate or the holder's insurance carrier shall respond to the claimant within 30 days after the date that the holder received the complaint form.

1.05: continued

**65.9.19 through 65.9.19.1.2.3 Add:**  
**65.9.19 Manufacture of Explosive.**

**65.9.19.1 General.**

**65.9.19.1.2** A manufacturer of explosives shall mean any person licensed in accordance with 27 CFR Part 55, and engaged in the business of manufacturing explosives for the purpose of sale or distribution.

**65.9.19.1.2.1** A federal manufacturer license is required when a binary system is used and the components are mixed in the course of a trade or business to create an explosive material.

**65.9.19.1.2.2** In the case of binary systems, the supplier of pre-weighted or pre-measured ingredients, not the person mixing the ingredients, is considered the manufacturer of any pyrotechnic materials created from binary components.

**65.9.19.1.2.3** The person loading binary materials into devices supplied by the manufacturer of binary systems shall not be considered a manufacturer when such loading is performed according to the instructions of the manufacturer.

**65.9.19.2 through 65.9.19.2.4 Add:**  
**65.9.19.2 Explosives Manufactories.**

**65.9.19.2.1** All explosives manufactories shall be supplied with some means of direct communication with the Head of the Fire Department, such as radio, telephone or fire alarm boxes, for immediate notice in case of fire.

**65.9.19.2.2** There shall be a competent watchman on guard at all explosive manufactories except when the same are in actual operation.

**65.9.19.2.3** No dry vegetation or combustible rubbish shall be allowed to accumulate within 50 feet of any building connected with such manufactories.

**65.9.19.2.4** Persons younger than 18 years old shall not be employed in an explosive manufactory and shall not be permitted to enter such manufactory unless accompanied at all times by a responsible adult person.

**65.9.20 through 65.9.20.2.4 Add:**  
**65.9.20 Explosives Transaction Records.**

**65.9.20.1** All persons keeping, storing, using, selling, manufacturing, handling, or transporting explosive material shall maintain records so that the quantity and location of such explosive materials are readily available for inspection by the Head of the Fire Department, the State Fire Marshal, their designees, or a police officer.

**65.9.20.1.1** Quantity and location records shall be delivered to the State Fire Marshal forthwith upon demand.

**65.9.20.2 Daily Summary of Magazine Transactions:**

**65.9.20.2.1** In taking the inventory required by Chapter 65, a licensee or permittee shall enter the inventory in a record of daily transactions which shall be kept for each magazine on a storage facility.

**65.9.20.2.2** These records shall be permitted to be kept at one central location on the business premises if separate records of daily transactions are kept for each magazine.

**65.9.20.2.3** Not later than the close of the next business day, each licensee or permittee shall record by the manufacturer's name or brand name, the total quantity received in and removed from each magazine during the day, and the total quantity remaining on hand at the end of the day.

**65.9.20.2.4** Any discrepancy which might indicate a theft or loss of explosive materials shall be reported to the State Fire Marshal immediately.



1.05: continued

**65.9.21 through 65.9.27.1 Add:**

**65.9.21 Discontinuance of Business.** Where an explosive materials business or operation is discontinued or succeeded by a new licensee or registrant, the records prescribed by Chapter 65 shall appropriately reflect such facts and shall be delivered to the successor.

**65.9.21.1** Where discontinuance of the business or operation is absolute, copies of the records required shall be delivered to the State Fire Marshal within 30 days following the business or operation discontinuance.

**65.9.22** Any person who transports or delivers explosive materials to any magazine, building or structure shall keep a record of the permit number assigned to said magazine, building, or structure by the State Fire Marshal in accordance with Chapter 65.

**65.9.23 Theft.** The loss or theft of any explosives shall be immediately reported to the State Fire Marshal and confirmed in writing within 24 hours.

**65.9.24** The State Fire Marshal or his or her designee shall be permitted, in his or her discretion, upon discovering a violation of this *Code* or upon determination of a fire or explosion hazard, require the removal of any explosive material or that a watchman be placed continuously in charge of it.

**65.9.24.1** The expense of said removal or watchman shall be the responsibility of the person in whose possession the explosive material is found.

**65.9.25** Any explosion, fire, or collision occurring in connection with the keeping, storage, manufacture, sale, transportation or use of explosive material causing loss of life or injury to any person or damage to property shall be reported immediately to the State Fire Marshal and the Head of the Fire Department, giving an account of the same, and then confirmed giving a detailed account in writing within 24 hours.

**65.9.26** Any person, firm, or corporation in the Commonwealth who keeps, uses, sells, transports, or stores any explosive shall keep a record of the disposition of such explosive by recording the batch number, if any, from the case from which individual explosive has been removed, if sold in less than case lots, or the number of cases with their batch numbers if sold in case lots.

**65.9.26.1** The person to whom such explosive has been transferred shall record the transaction and such records shall be maintained for ready inspection by the State Fire Marshal, the Head of the Fire Department, or the Head of the Police Department, or their designees, for a period of three years.

**65.9.27** Laboratories: industrial laboratories, laboratories of technical institutes, colleges, universities, and similar institutions shall be permitted to keep, store, and use explosives or blasting agents when confined to the purpose of scientific or technical instruction or research, provided the storage and use of explosives or blasting agents is conducted or supervised by a person holding a Certificate of Competency and not more than 50 lbs. of explosive are kept on hand at any time in such laboratories.

**65.9.27.1** Such Certificate of Competency can be issued by the State Fire Marshal without testing, providing a curriculum *virtae* is provided.

**65.10 Add:**

**65.10** The possession and use of consumer fireworks is prohibited in the Commonwealth unless part of a display firework show in accordance with Section 65.2 or part of a Pyrotechnics Before a Proximate Audience in conformance with Section 65.3.

**65.11 through 65.11.2 Add:**

**65.11 Cannon or Mortar Firing.**

**65.11.1** The firing of muzzle-loading cannons during patriotic celebrations and reenactments, including all such cannons ranging from pre-Revolutionary War vintage to present day facsimiles shall comply with Section 65.11.

**65.11.1.1** This Section shall not apply to any cannon exhibit in which explosives are not being used.

1.05: continued

**65.11.1.2** This Section shall not apply to the storage of ammunition for any cannon and shall be subject to all the applicable requirements in Section 65.9.

**65.11.2 Permits.** Permits, where required, shall comply with Section 1.12.

**65.11.3** through **65.11.3.6** Add:

**65.11.3 Terms.** As used in Chapter 65, the enclosed terms shall have the following meaning assigned to them.

**65.11.3.1** through **65.11.3.6** Add:

**65.11.3.1 Blank-fire.** The supervised discharge of a cannon or mortar without projectile.

**65.11.3.2 Cannon.** Any gun designed to be fired from a carriage resting on the ground and which is loaded from the muzzle with rigid noncombustible black powder cartridge.

**65.11.3.3 Display.** The supervised discharge of cannon or mortar, whether blank-fire without projectile or live-fire with projectile.

**65.11.3.4 Live-fire.** The supervised discharge of cannon or mortar with projectile.

**65.11.3.5 Mortar.** Any cannon whose length is less than six times its bore diameter, or any cannon fired at an elevation of 45° or more from the horizontal.

**65.11.3.6 Range.** An area designated for the discharge of various weapons, having a minimum unobstructed length of 100 yards (99.44 m), a minimum unobstructed width of 25 yards (22.86 m), equipped with a natural or manmade down range barrier a minimum of ten feet in height.

**65.11.4** through **65.11.4.3(10)** Add:

**65.11.4 Range Conditions and Other Pre-firing Requirements.**

**65.11.4.1** A cannon can only be fired with ball, shot or projectile on ranges approved by the AHJ.

**65.11.4.1.1** Such ranges shall be clear and unobstructed between discharge point and target area and for a safe distance to the rear of target in event of an overshoot.

**65.11.4.1.2** The target area shall not exceed 250 yards (228.6 m) from the point of discharge.

**65.11.4.2** There shall be no permanent building, public highway, railroad, or other public way within the forward sector of a 180° arc having a radius of 100 ft. (30.48 m) from the muzzle of the cannon.

**65.11.4.2.1** A similar sector of 180° directed toward the rear 75 ft. (22.86 m) in radius shall be clear of all public ways, permanent buildings, or other obstructions.

**65.11.4.3** The firing of the cannon shall comply with the following:

- (1) No cannon shall be discharged during any windstorm in which the direction and velocity of the wind renders the display dangerous to the public safety and/or surrounding property.
- (2) There shall be no discharging of cannon between the hours of sunset and sunrise without prior written approval from the Head of the Fire Department.
- (3) The Head of the Fire Department shall designate the location and type of fire extinguishing equipment as may be required.
- (4) No firing of any cannon shall be conducted unless the crew is present in adequate numbers for the particular cannon or mortar.
- (5) The competent operator shall be responsible to ensure that all members of the crew have been fully trained in the safe operation of the cannon or mortar.
- (6) No member of the gun crew shall be younger than 18 years old.
- (7) Smoking shall be prohibited in the discharge area.
- (8) No member of the audience shall be allowed in the forward or flank zone of the muzzle of a cannon firing a projectile within a forward sector of 180° having a radius of 150% of the estimated range of the piece.
- (9) The audience at a supervised firing of cannon shall be restrained behind lines 60 ft. (18.29 m) on the flank area back of the muzzle and 60 ft. (18.29 m) to the rear of the gun.
- (10) Unless otherwise allowed by the State Fire Marshal, no piece shall be discharged with blank ammunition, unless all spectators are at a safe distance from the front of the piece and at least 60 ft. (18.29 m) to the rear or flank. Adjacent pieces shall be at a safe interval.

1.05: continued

**65.11.5 through 65.11.5.1(29) Add:**

**65.11.5 Magazines and Powder.**

**65.11.5.1** All ammunition and powder shall comply with the following:

- (1) All ammunition for cannon shall be transported and temporarily stored at the firing location in the finished state in a portable magazine.
- (2) Such magazine shall be constructed of at least 24-gauge sheet metal lined with a minimum of ¾ inch marine plywood or other non-sparking material, and shall be of sturdy sealed construction held together with non-sparking fastenings. A suitable lock and hasp of non-sparking material shall be provided.
- (3) In the discharge area, a ready-service box constructed of wood with non-sparking fastenings and cover designed to be self-closing shall be positioned at ground level approximately 25 ft. (7.62 m) to the rear of the piece being served with the hinges toward the piece.
- (4) All magazines and ready-service boxes shall be closed prior to the loading of each cartridge of the piece being served and adjacent pieces.
- (5) Ready-service boxes for each gun shall contain the minimum number of cartridges required for the gun during that particular display.
- (6) Magazines and ready-service boxes shall at all times be under the control of a competent member of the gun crew.
- (7) No loose or bulk powder other than priming powder in quantities not exceeding ½ ounce shall be used in the firing of any cannon, and no loose or bulk powder shall be transported or stored in any portable magazine with cartridges.
- (8) Blank artillery cartridges shall be made up of black powder only, not to exceed four ounces per inch of largest bore diameter.
- (9) Cartridges must have a minimum of three wraps of heavy-duty aluminum foil and be packed to a firm consistency.
- (10) Only cannon grade, 1F, or 2Fg black powder will be used.
- (11) Powder grades cannot be mixed.
- (12) No artillery cartridges shall be constructed at the event site.
- (13) No wadding of anykind is permitted in blank firing.
- (14) The amount of black powder used in each cartridge shall be such as to not present an undue hazard to persons, property, or the piece itself.
- (15) Powder cartridges for cannons shall not exceed four ounces of powder per inch of bore diameter.
- (16) Powder cartridges for mortars shall not exceed four ounces of powder per inch of chamber diameter.
- (17) No torch shall be used to ignite any cartridge to be fired from cannon.
- (18) All cannons used to fire a projectile shall be provided with an instant source of ignition such as an electrical squib, or bridge wire or percussion cap, or other approved instant firing device. Exception to the foregoing shall apply to the use of fuses for the firing of mortars.
- (19) No firing of any steel or iron cannon or mortar shall be conducted unless the weapon contains a seamless steel safety sleeve with breech plug, designed for such firing and have had a boroscope inspection conducted by a qualified person.
- (20) Original guns and bronze guns shall permitted to be used without a safety sleeve, provided that they have had a boroscope inspection conducted by a qualified person. Pits, scratches, or other defects more than 3/16 inch deep shall render the cannon unusable.
- (21) Cannons and mortars used for live-firing shall have a boroscope inspection conducted at least once every five years.
- (22) Cannons and mortars used exclusively for blank-firing shall have a boroscope inspection conducted at least once every ten years.
- (23) Projectiles shall not be so constructed as to develop any unsafe pressures; and no combustible, explosive, or pyrotechnic projectiles shall be used.
- (24) Reloading shall not commence until the worming and wet sponging have been completed after firing.
- (25) The piece shall be wormed and wet sponged between shots and the vent stopped from the time the worm enters the muzzle until the rammer is removed from the bore after the cartridge is rammed in blank-firing, or the projectile is rammed in live-firing.

1.05: continued

- (26) At no time shall any cannon be left unattended while loaded or during a misfire until the piece has been cleared.
- (27) In the event of a misfire, the competent operator shall take the following steps:
- (a) The gunner shall give an audible warning.
  - (b) No personnel shall approach the front of the muzzle.
  - (c) A mandatory three minute cooling off period shall be observed.
  - (d) The piece shall be re-primed from a safe position and a repeated attempt made to fire the piece.
  - (e) If the attempt to re-fire the piece is unsuccessful, the piece shall be flooded with water through the vent and allowed to soak for a period of at least one hour unless the water or compressed gas can be used to flush the cartridge out of the muzzle.
  - (f) The projectile and/or cartridge shall be removed through the muzzle.
- (28) If, after a display, the competent operator has reason to believe that there are any unignited charges or remnants thereof containing explosives in the area, he shall make a thorough search of the area for such explosives. The responsibility for disposition of it shall be assumed by the certificate holder.
- (29) Any explosion, fire, or other accident occurring in connection with the keeping, storage, manufacture, handling, transportation, supervised display, or other disposition of ammunition for cannon causing loss of life or injury to any person or damage to property, shall be immediately reported to the State Fire Marshal by the competent operator, giving a detailed account of same and confirmed in writing.

## Chapter 66 Flammable and Combustible Liquids.

**66.1.1\*** Replace with the following:

**66.1.1** The storage, handling, and use of flammable and combustible liquids, including waste liquids, as herein defined and classified, shall comply with this chapter; NFPA 30, *Flammable and Combustible Liquids Code*; Sections 60.1 through 60.4 of this *Code*; and NFPA 35: *Standards for the Manufacture of Organic Coatings*, as applicable.

**66.1.4** Replace as follows:

**66.1.4** Installations made in accordance with the applicable requirements of the following standards shall be deemed to be in compliance with this *Code* except that the maximum allowable quantities of hazardous materials are limited to the quantities listed in the *Building Code* and Table 60.4.2.1.1.3 of this *Code*:

**66.4.1.1.1** Add:

**66.4.1.1.1** For the purposes of this classification if an accurate boiling point is unavailable for the material in question or if a mixture does not have a constant boiling point, the 20% evaporated point of a distillation performed in accordance with ASTM D 86: *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure* shall be used as the boiling point of the liquid.

**66.21.4.1.6** Add:

**66.21.4.1.6 Pre-fabricated Tanks and Dikes.**

- (1) Pre-fabricated tanks and dikes shall provide 110% containment.
- (2) If a rain shield is provided, it shall have provisions that an overfill of the tank will go directly into the dike.

**66.21.5.2.1(2)** Delete.

**66.21.6.4.1 through 66.21.6.4.1.3.1** Add:

**66.21.6.4.1 Automotive Lubrication Service Centers.**

**66.21.6.4.1.1** Tanks shall be located in a separate room from the main work area by a two hour fire rated enclosure.

**66.21.6.4.1.2** The storage room shall be equipped with a fixed fire suppression system designed and installed in accordance with Section 13.8.

**66.21.6.4.1.3** The storage room shall have an area not less than 110% of the largest tank capacity plus 10% of the aggregate amount of all other tanks in that room.



105: continued

**66.21.6.4.1.3.1** If water is utilized for suppression the containment area shall comply with the *Building Code*.

**66.21.7.1.5** Delete.

**66.21.7.4.3.1** Replace with the following:

**66.21.7.4.3.1 General.** Underground tanks taken out of service shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and be emptied of liquid and residuals, rendered vapor-free, and safeguarded against trespassing in accordance with this section and in accordance with NFPA 326 or in accordance with the requirements of the AHJ. The procedures outlined in this section shall be followed when taking underground tanks temporarily out of service, closing them in place permanently, or removing them.

**66.21.7.4.3.2** through **66.21.7.4.3.2(4)** Replace with the following:

**66.21.7.4.3.2 Temporary Closure.** Underground tanks shall comply with 310 CMR 80.00: *Underground Storage Tank (UST) Systems* and be rendered temporarily out of service only when it is planned that they will be returned to active service, closed in place permanently, or removed within an approved period not exceeding five years. The following requirements shall be met:

- (1) Corrosion protection shall be maintained in operation.
- (2) The vent line shall be left open and functioning.
- (3) The tank shall be secured against tampering.
- (4) All other lines shall be capped or plugged.

**66.21.7.4.3.2.1** Replace with the following:

**66.21.7.4.3.2.1** Tanks remaining temporarily out of service for more than five years shall be permanently closed in place or removed in accordance with Section 66.21.7.4.3.3 or 66.21.7.4.3.4, as applicable.

**66.21.7.4.3.3** Replace with the following:

**66.21.7.4.3.3 Permanent Closure in Place.** Underground tanks shall be permitted to be permanently closed in place if approved by the AHJ and in accordance with 310 CMR 80.00: *Underground Storage Tank (UST) Systems*. All of the following requirements shall be met:

**66.21.7.4.3.4(8)** Add:

- (8) Underground steel storage tanks used for the storage of flammable liquids shall be disposed of at a Tank Dismantling Yard approved by the State Fire Marshal.

**66.21.7.4.3.8** Delete.

**66.21.7.5\*** Delete.

**66.21.7.6** through **66.21.7.8.12** Add:

**66.21.7.6 Application for Approval of Tank Dismantling Yards.**

**66.21.7.6.1** Underground steel storage tanks used for the storage of flammable liquids shall only be disposed of at tank dismantling yards approved by the State Fire Marshal.

**66.21.7.6.2** Application for approval of a tank dismantling yard shall be made on a form approved by the State Fire Marshal (Form FP-295). Completed applications shall be submitted to: Department of Fire Services, Division of Fire Safety, P.O. Box 1025, 1 State Road, Stow, MA 01775.

**66.21.7.7 Tank Dismantling Yard.**

**66.21.7.7.1** Each tank dismantling yard shall hold valid licenses or permits from any and all local city and town Boards, Agencies, Departments, where necessary to conduct operation for underground steel storage tank dismantling and storage.

**66.21.7.7.2** Each tank dismantling yard shall comply with all the provisions of regulation and be approved by the State Fire Marshal and endorsed by the Head of the Fire Department.

**66.21.7.8 Operation of Tank Dismantling Yards.**

**66.21.7.8.1** No person at a tank dismantling yard shall accept an underground steel storage tank that in any way would be used for reuse or resale purposes.



1.05: continued

**66.21.7.8.2** Each approved tank dismantling yard shall maintain a written ledger listing all underground steel storage tanks received, a receipt of disposition thereof and any other data required by the Marshal.

**66.21.7.8.3** All underground steel storage tanks shall be pumped out dry before transported to a tank dismantling yard.

**66.21.7.8.4** The vapors in an underground steel storage tank may be made inert. Solid carbon dioxide (dry ice) crushed and distributed evenly over the greatest possible area in the amount of 1.5 (lbs) pounds per 100 gallons of tank capacity may be used to inert the tank.

**66.21.7.8.5** The cleaning and residue of the underground steel storage tank must be treated as a hazardous waste and removed by a licensed hazardous waste or waste oil transporter, as required by the 310 CMR: *Department of Environmental Protection*. The hazardous waste manifest number shall be recorded on the firedepartment permit.

**66.21.7.8.6** The underground steel storage tank shall be purged with an inert gas, such as nitrogen or carbon dioxide, while all connecting lines to the tank including the vent, shall be removed.

**66.21.7.8.7** Holes or openings shall be drilled or made in the tank when received at the tank disposal yard.

**66.21.7.8.8** Each tank dismantling yard shall have a device capable of measuring flammable vapors. The device shall be properly calibrated, and employees shall be trained in its use.

**66.21.7.8.9** No tank dismantling yard shall accept any tank that has not been purged of product and inerted.

**66.21.7.8.10** All tanks shall be stored on the secured premises of an approved dismantling yard where they can be safeguarded from the general public.

**66.21.7.8.11** If a tank yard finds product in a tank, such as sludge or other contaminated waste, the material shall be treated as a hazardous waste and removed by a hazardous waste or waste oil transporter in accordance with 310 CMR: *Department of Environmental Protection*.

**66.21.7.8.12** All underground steel storage tanks accepted at approved tank yards must be dismantled within two working days of the date of acceptance. No tanks shall be stored in excess of 72 hours without approval of the Head of the Fire Department.

**66.23 through 66.23.17.2** Delete.

**66.28.1.1 through 66.28.1.2(2)** Add:

**66.28.1.1 Damage Protection.**

(1) Access to loading bays shall have concrete bumpers or pipe guide rails installed, so that no part of any tank vehicle entering the bay can come in contact with the loading structure or its equipment.

(2) Sufficient clearance shall be provided under top loading facilities and its related structure to allow for the highest vehicle expected to pass through the structure.

**66.28.1.2 Bottom Loading Facilities.**

(1) Loading couplers shall incorporate a fracture point in the coupler itself to prevent damage to the vehicle connection if vehicle is moved prior to disconnecting the loading assembly.

(2) Provisions shall be made to keep bottom loading assemblies and equipment from extending into traffic lanes when not in use.

## Chapter 69 Liquefied Petroleum Gases and Liquefied Natural Gases

**69.1.1.1** Replace with the following:

**69.1.1.1** The storage, use, and handling of liquefied petroleum gases (LP-gas) upstream from the outlet of the first stage regulator shall comply with the requirements of this chapter; NFPA 58, *Liquefied Petroleum Gas Code*; and Sections 60.1 through 60.4 of this *Code*.

1.05: continued

**69.1.1.4 Add:**

**69.1.1.4 Certificates.** Certificates of completion, where required, shall comply with Section 1.12.8.51 and Section 1.13 as applicable.

**69.1.3 through 69.1.3.1 Add:**

**69.1.3 Terms.** As used in Chapter 69, the enclosed terms shall have the following meaning assigned to them.

**69.1.3.1 Add:**

**69.1.3.1 Abandoned.** Any container which has not been used either for filling or draw off of LP-gas for a continuous period in excess of 12 months.

**69.1.4 Add:**

**69.1.4 LP-container, Filling, Shipment, Odorization, and Testing Requirements.** If odorization is required, as provided in NFPA 58: *Liquefied Petroleum Gas Code*, Section 4.2.1, one of the testing thresholds required in Section 69.1.4.2(2) shall be completed and documented. The presence of the odorant shall be permitted thereafter by sniff testing each time the propane changes in the distribution network. If the amount of odorant in the propane is questionable by sniff testing or the records are not accepted by or made available to the AHJ as required in Section 69.1.4.3.1, the testing as prescribed in accordance with the Section 69.1.4.2(2) shall be repeated. If necessary, thresholds shall be met by adding additional odorant to obtain proper odorized propane levels as prescribed in Section 69.1.4.2(1) or 69.1.4.2(2). In such situations where the propane odorant is questionable, immediate verbal notification shall be given to the AHJ, which shall be followed by written notification within 24 hours documenting the date, time, and location of discovery and status of such event.

**69.1.4.1 Add:**

**69.1.4.1 Railcar Shipments.** Each railcar shipment of LP-gas intended for distribution within Massachusetts shall comply with the provisions in Section 69.1.4.2(1). Each railcar shipment delivered for distribution shall be tested for odorization using one of the tests prescribed in Section 69.1.4.2(2) and Sub-sections (a), (b), (c).

**69.1.4.2 through 69.1.4.2(4(c) Add:**

**69.1.4.2 Odorization Thresholds, Testing and Filling of Containers:**

- (1) If ethyl mercaptan is used for odorization purposes, it shall be injected at a minimum rate of one lb per 10,000 gallons of propane.
- (2) For testing purposes one of the following tests listed in (a), (b) or (c) shall be required to determine adequate ethyl mercaptan odorant levels equivalent to one lb per 10,000 gallons of propane.
  - (a) Vapor Test using stain tubes resulting in a minimum of five ppm of ethyl mercaptan utilizing ASTM D 5305: *Standard Test Method for Determination of Ethyl Mercaptan in LP-gas Vapor*.
  - (b) Flash Vapor Test using stain tubes resulting in a minimum of 17 ppm of ethyl mercaptan utilizing ASTM D 5305: *Standard Test Method for Determination of Ethyl Mercaptan in LP-gas Vapor*.
  - (c) Liquid Test for analysis of volatile sulfurs using gas chromatography resulting in a minimum of 17 ppm of ethyl mercaptan utilizing ASTM D1265: *Standard Practice for Sampling Liquefied Petroleum (LP) Gases, Manual Method*.
- (3) Newly filled tanks and containers shall be purged according to manufacturer's instructions.
- (4) Newly installed tanks greater than 125 gallons shall comply with the following:
  - (a) Within two business days of the tank installation approval by the AHJ, such tank shall be filled with LP-gas and;
  - (b) If the tank is not placed into service within 30 days of the tank installation approval date, such tank shall be tested by the LP-gas company in accordance with Section 69.1.4.2(2), prior to being placed into service and;
  - (c) Maintain records in accordance with Section 69.1.4.3 and report findings, if applicable, in accordance with Section 69.1.4.

**69.1.4.3 Add:**

**69.1.4.3 Records.** Records of all testing required by this *Code* shall be maintained. The results shall be kept by both the shipper and user for a minimum of three years from the date of delivery.

1.05: continued

**69.1.4.3.1** Add:

**69.1.4.3.1** Test results shall be made available to the AHJ upon request.

**69.1.4.4.** through **69.1.4.4.3** Add:

**69.1.4.4** Effective September 1, 2014, each person handling LP-gas in the quantities of 42 lbs (ten gallons) or greater, shall be trained, at applicable level, in accordance with the Certified Employee Training Program (CETP) or other education programs acceptable to the State Fire Marshal.

**69.1.4.4.1** Each person handling cylinders less than 42 lbs shall receive annual training utilizing the program "Dispensing Propane Safely" published by the Propane Education and Research Council.

**69.1.4.4.2** Certificates of completion shall be maintained by the employer for three years and a copy of said certificate shall be given to the trainee at the completion of each program.

**69.1.4.4.3** Certificates of completion shall include the date of completion, the course name, and be signed by the instructor or provider. Such certificates shall be submitted to the AHJ upon request.

**69.1.4.5** through **69.1.4.6.1** Add:

**69.1.4.5 Field Equipment Identification.** All LP-gas installations of 125 gallons or greater shall be provided with a sign identifying the responsible party for the installation and maintenance of the LP-gas installation.

**69.1.4.5.1** The sign shall be installed in a plainly visible location.

**69.1.4.5.2** Such sign shall include the name and telephone number of the LP-gas supplier, plant installer, owner, or operator.

**69.1.4.6 Emergency and Reporting Procedure.** In situations where a gas leak results in imminent danger, immediate verbal notification shall be given to the 911 dispatch center.

**69.1.4.6.1** The AHJ shall receive written notification within 24 hours of said notification documenting the date, time, and location of discovery, status, and remediation of such event.

**69.1.4.6.2** Add:

**69.1.4.6.2** In situations where the AHJ has directed an LP-gas provider to take corrective action, the provider shall immediately respond verbally to the AHJ, as directed, such provider's response shall be followed by written notification, if requested, within 24 hours after resolution, documenting the date, time, and the location of discovery and status of the LP-gas installation.

**69.3.3.4.4** Replace with the following:

**69.3.3.4.4** The distance measured with a three foot arc from the point of discharge of a container pressure relief valve to any building opening below the level of such discharge shall be in accordance with Table 69.3.3.4.3. [58:6.3.4.4]

**69.3.12.6.3** Add:

**69.3.12.6.3** The owner of the storage equipment shall be responsible for the installation of the LP-gas facility and for maintaining it in a safe operating condition.

**69.3.12.6.4** Add:

**69.3.12.6.4** No person shall install, remove, connect, disconnect, fill or refill any LP-gas container without permission of the owner of the container.

**69.3.12.6.5** Add:

**69.3.12.6.5** Only a trained individual complying with Section 69.1.4.4 shall install, remove, connect, disconnect, sell, fill, refill, deliver or permit to be delivered, or operate any LP-gas system utilizing containers of over 42 lbs (ten gallons) product capacity.

**69.3.12.6.6** through **69.3.12.6.6(3)** Add:

**69.3.12.6.6** The State Fire Marshal shall be permitted to order the user of a system in writing to meet requirements:

- (1) Where unusual conditions exist;
- (2) When it is necessary for the protection of life and property;
- (3) Provided the requirements are within the intent and purpose of this *Code*.

1.05: continued

- 69.3.13.4.4** Add:  
**69.3.13.4.4** "NO SMOKING" and "STOP ENGINE WHEN REFUELING" signs shall be displayed on the front and rear of each dispenser at the filling station. The signs shall have block letters at least one inch high with either red letters on a white background or white letters on a red background.
- 69.5.2.1.6** Add:  
**69.5.2.1.6** Areas used for the storage of containers or cylinders awaiting use or resale shall post a readily accessible and clearly visible warning sign stating "NO SMOKING" and "FLAMMABLE GAS" or otherwise indicate the contents of such containers or cylinders, such as "FLAMMABLE GAS PROPANE" or "FLAMMABLE GAS BUTANE".

REGULATORY AUTHORITY

- 527 CMR 1.00: M.G.L. c. 22D, § 4, c. 148, §§ 9, 9A, 10, 13, 25A, 25C, 25D, 26C, 26F½, 28, 28B, 35, 39A, 40, 46 and 58.