



DEVAL L. PATRICK  
GOVERNOR

TIMOTHY P. MURRAY  
LT. GOVERNOR

MARY ELIZABETH HEFFERNAN  
SECRETARY

*The Commonwealth of Massachusetts*  
*Executive Office of Public Safety and Security*  
*Department of Fire Services*

*P.O. Box 1025 ~ State Road*

*Stow, Massachusetts 01775*

*(978) 567~3100 Fax: (978) 567~3121*

*www.mass.gov/dfs*



STEPHEN D. COAN  
STATE FIRE MARSHAL

## **Memorandum**

**TO:** Heads of Fire Departments

**FROM:** Stephen D. Coan  
State Fire Marshal

**DATE:** September 1, 2011

**SUBJECT:** 527 CMR amendments

---

Enclosed with this month's DFS briefs are two amendments to 527 CMR, the State Fire Code.

The first amendment was filed on an emergency basis, eff. 7-29-11, strikes out the BFPR underground storage tank "operator training requirements" from 527 CMR 9.00. (see changes to s. 9.07 Q, R, S,T,U) and was the first of several amendments in this regard, as part of an initiative to transfer this regulatory requirement to the Mass DEP.

The second amendment is in regard to unvented gas products. This amendment, which was eff. as of 8-5-11 allows the appliance to be used in all buildings or structures "used for human occupancy". These amendments allow for a broader application of use of unvented appliances.

If you have any questions, please contact the Code Compliance and Enforcement Unit at 978-567-3375 or in Western MA 413-587-3181.

## 527 CMR: BOARD OF FIRE PREVENTION REGULATIONS

## 527 CMR 30.00: UNVENTED PROPANE OR NATURAL GAS-FIRED SPACE HEATERS

## Section

- 30.01: Purpose
- 30.02: Scope
- 30.03: Definitions
- 30.04: Installation
- 30.05: Maintenance and Operation

30.01: Purpose

The purpose of 527 CMR 30.00 is to provide requirements for the installation, maintenance, and operation of unvented propane or natural gas-fired space heaters.

30.02: Scope

527 CMR 30.00 shall apply to unvented propane or natural gas-fired space heaters installed in buildings or structures used in whole or in part for human occupancy on or after April 1, 2004. 527 CMR 30.00 shall not apply to unvented propane or natural gas-fired space heaters permitted in accordance with 527 CMR 20.00: *Use and Maintenance of Temporary Portable Space Heating Devices and Equipment Used in the Construction Industry*.

30.03: Definitions

Malfunction shall mean a condition where a space heater fails to operate properly as provided in the manufacturer's instructions.

Oxygen Depletion Safety Shutoff System (ODS). A device utilized to shut off the gas supply to the pilot or main burner when the oxygen in the surrounding atmosphere is depleted to the percent concentration developed by the manufacturer, but under no circumstances shall the concentration be less than 18% oxygen concentration.

Primary Heat. A heat source that is permanently installed and used to provide heat to the entire structure (e.g. forced hot water, forced hot air) by means of a central furnace or boiler. (e.g. oil, natural gas, wood, pellets, corn, or LPG) or electric heat. 527 CMR 30.03: *Primary Heat* shall not include fireplaces.

Unvented Natural or Propane Gas-fired Space Heater. A permanently installed stand alone gas-fired unvented room heater or gas-fired unvented decorative room heater for connection to the house fuel supply system which utilizes natural gas or propane.

30.04: Installation

- (1) A permit shall be obtained from the head of the fire department and the local or state gas inspector having jurisdiction for the installation of all unvented propane or natural gas-fired space heaters. Said permits shall be conditioned upon final inspection and approval of installation by the head of the fire department and the local or state gas inspector having jurisdiction. A copy of the manufacturer's installation/operating literature shall be submitted with each permit application. Before operation, the Head of the Fire Department and the local or state gas inspector shall inspect the installation for compliance with 527 CMR and 248 CMR: *Board of State Examiners of Plumbers and Gas Fitters*.
- (2) Unvented gas-fired space heaters may be used only for supplemental heat and/or decorative purposes and under no circumstances shall they provide a primary heat source.
- (3) Unvented propane or natural gas-fired space heaters shall conform to *ANSI Z21.11.2 - 2000 edition, Volume II*, be equipped with an oxygen depletion safety (ODS) shutoff system and be listed and approved in accordance with 248 CMR.

## 30.04: continued

- (4) Unvented propane or natural gas-fired space heaters shall be installed in accordance with their listings and the manufacturer's instructions. Proper clearances to combustibles shall be maintained. In no case shall the clearances be such as to interfere with combustion air and accessibility.
- (5) Installations shall be of a permanent type, with a permanently piped fuel supply in accordance with 248 CMR. LPG appliances shall be subject to the storage requirements in accordance with 527 CMR 6.00: *Liquefied Petroleum Gas Containers and Systems*. Portable unvented propane or natural gas-fired space heaters shall be prohibited.
- (6) Unvented propane or natural gas-fired space heaters shall be prohibited in bedrooms and bathrooms.
- (7) Space heaters shall be properly sized for the room or space of installation, but shall not exceed a maximum of 40,000 BTU input per room or space.
- (8) In occupancies with an unvented propane or natural gas-fired space heater, at least one listed carbon monoxide detector shall be installed and maintained in any room or space where said heater has been installed in accordance with the manufacturer's instructions. Any building wherein said heater is to be installed shall, as a precondition to such installation, have working smoke detectors installed and maintained in accordance with the requirements of 780 CMR: *State Board of Building Regulations and Standards* in effect at the time of construction or if no said requirement was in effect at the time of construction, installed as provided for in M.G.L. c. 148, § 26E.
- (9) In buildings served by an unvented propane or natural gas-fired space heater, a primary source of heat, which is operable, shall be permanently installed and maintained in said building.
- (10) Sellers of unvented propane or natural gas-fired space heaters shall provide to each purchaser a copy of 527 CMR 30.00 upon sale of the unit.

30.05: Maintenance and Operation

- (1) The maintenance and operation of unvented propane or natural gas-fired space heaters shall be in accordance with the manufacturer's instructions. The manufacturer's instructions shall be left with the appliance and made available for any public official.
- (2) Any malfunction of an unvented a space heater shall forthwith be reported by the owner to the head of the local fire department.

## REGULATORY AUTHORITY

527 CMR 30.00: M.G.L. c. 148, § 25A.

9.02: continued

EXCEPTION 2: Aboveground pressure vessels constructed in accordance with the requirements of the ASME, *Unfired Pressure Vessels Code* and regulated by M.G.L. c. 146 and 527 CMR 9.07(G) shall be exempt from the requirements for vaults or double-walled tanks.

Approved, approved by the State Fire Marshal.

Automatic Line Leak Detector, a device designed to detect product or pressure losses in a pressurized product line of a remote pumping system.

Board, the Board of Fire Prevention Regulations.

Cathodic Protection System, a technique which inhibits the corrosion of a tank or its components either through sacrificial or galvanic anodes or impressed current.

Class A Operator, means the individual or individuals designated by the owner or operator to have primary statutory and regulatory responsibility for the operation and maintenance of the underground storage tank system. The Class A Operator may hold more than one class of operator position.

Class B Operator, means the individual or individuals designated by the owner or operator to implement applicable regulatory requirements and implement the daily aspects of the operation, maintenance, and recordkeeping for the underground storage tank system. The Class B Operator may hold more than one class of operator position.

Class C Operator, means the individual or individuals designated by the owner or operator to have primary responsibility for responding to alarms, emergencies presented by spills or releases, and other problems associated with the operation of the underground storage tank system. The Class C Operator may hold more than one class of operator position.

Combustible Liquid, Any liquid having a flash point at or above 100°F shall be known as a Class II or Class III Liquid. Combustible liquids shall be divided into the foll

Class II: Liquids having flash points at or above 100°F. and below 140°F.

Class IIIA: Liquids having a flash point at or above 140°F. and below 200°F.

Class IIIB: Liquids having a flash point at or above 200°F.

Components, piping, pumps, and other related storing, conveyancing, and dispensing elements which, together with one or more tanks and any cathodic protection or monitoring system, constitute a storage facility.

Consumptive Use, fuel oil used exclusively for area heating and/or the heating of domestic water on the premises where stored.

Corrosion Expert, a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such person shall be accredited or certified as being qualified by the National Association of Corrosion Engineers (NACE) as a Cathodic Protection Specialist or Corrosion Specialist or be a Massachusetts registered professional corrosion engineer. The corrosion expert shall follow applicable NACE criteria.

DEP, The Massachusetts Department of Environmental Protection.

Department, the Department of Fire Services.

9.07: continued

(3) The owner/operator of the underground storage tank(s) subject a delivery prohibition order shall notify the official issuing said order upon correcting the condition(s) specified in 527 CMR 9.07(O)(1)(a) through (d). The issuing official shall, within 24 hours (Saturdays, Sundays, and Holidays excepted) of notification of said corrections shall verify that the corrections have been made. If the conditions have been corrected, the official shall cause the delivery prohibition tag to be removed, and the product supplier notified.

(P) Third-party Inspections.

(1) Prior to August 8, 2010, and at a minimum once every three years thereafter the owner/operator of every underground storage tank shall at his/her own expense cause said tank(s) and related piping to be inspected by a third-party inspector, as defined in 527 CMR 9.02.

(2) Effective August 8, 2007, every newly installed underground storage tank and related piping shall be inspected by a third party inspector, as defined in 527 CMR 9.02, at the time installation is completed.

(3) The Third-party inspectors shall verify that the owner/operator possess the following documents.

(a) A current license for the storage of flammable and combustible liquids issued by the local licensing authority under M.G.L c. 148, § 13, if applicable; and

(b) A valid permit issued pursuant to 527 CMR 9.00, to maintain a new or existing underground storage tank facility; and

(c) A current, accurate and valid underground storage tank registration form (Form FP-290); and

(d) Copies of the manufacturer's operating instructions for all leak detection, tank monitoring and corrosion protection systems; and

(e) Current inspection/testing records for all leak detection, tank monitoring and corrosion protection systems; and

(f) Evidence of financial responsibility; and

(g) Records of any release reporting and investigation; and

(h) Permanent or temporary closure records.

(4) Third-party inspectors shall conduct an inspection of the following underground storage tank system components in accordance with the equipment manufacturers inspection/testing instructions and sound industry practices:

(a) Appropriate and operational corrosion protection (if applicable)

(b) Overfill prevention in place and operational.

(c) Spill prevention in place and operational.

(d) Tank and piping release detection is appropriate, in place and operational.

(e) Secondary containment is in place (if applicable) and operational.

(5) The third-party inspector shall record the results of the document verification, and the inspection on a form or in a format approved by the Marshal. This form shall be signed under the pains and penalties of perjury.

(6) The third-party inspector shall transmit one copy of the inspection form to the Head of the Fire Department and one copy to the Marshal within 14 business days from of the completion of inspection.

(7) The Head of the Fire Department and the Marshal shall routinely conduct random inspections of facilities that have been inspected by third -party inspectors to ensure integrity of the inspection.

(8) Nothing contained in 527 CMR 9.07(P) shall be construed to limit the authority of the Marshal, the Head of the Fire Department or their designees from conducting inspections of underground storage tank systems.

(9) The following facilities shall be exempt from third-party inspection requirements:

(a) Farm or residential tanks of 1100 gallons capacity or less used for storing motor fuel for noncommercial purposes.

(b) Residential or commercial tanks storing or having stored heating oil (fuel oil) for consumptive use on the premises.

(10) The Marshal may, after notice and an opportunity for a hearing, suspend or revoke the right of any third-party inspector to conduct inspections required under 527 CMR 9.07(P), if the Marshal determines that any of the following has occurred.

(a) An inspection was not conducted under the direct supervision of the third-party inspector submitting the inspection form.

## 527 CMR: BOARD OF FIRE PREVENTION REGULATIONS

9.07: continued

- (b) third-party inspector is an owner or operator of the underground storage tank, an employee of the owner/operator of the underground storage tank, or a person having daily on-site responsibility of the underground storage tank.
- (c) The third-party inspector submits false or misleading inspection reports.
- (d) The third-party inspector fails to conduct an inspection in accordance with manufacturers inspection and testing instructions, and accepted industry practice.
- (e) For any other reason which reasonably questions the qualifications of said inspector to continue to conduct further inspections.

(Q) Additional Operator Requirements.

- (1) Written operator response guidelines shall include spill reporting procedure, contact phone numbers, malfunctioning equipment notification procedures, and initial mitigation protocol for emergencies.
- (2) Monthly visual inspections meeting the following minimum requirements shall be conducted at all underground storage systems.
  - (a) Inspection shall be conducted by or under the direction of the Class A or B operator.
  - (b) The results of each inspection shall be recorded in a monthly inspection report and be readily available for inspection for a period of no less than three years.
  - (c) The following items shall be inspected and shall be reported on the inspection report as no defect, defect, and how any defect was resolved:
    - 1. Product shear valve properly anchored.
    - 2. Verify the presence each pressure/vacuum vent cap and if the cap is missing, replace the cap.
    - 3. Inspect each spill bucket for the presence of oil, water, or debris, remove and dispose of any motor fuel, water, or debris in accordance with the applicable federal, state, and local requirements, and repair each spill bucket as necessary.
    - 4. Inventory conducted daily, reconciled monthly.
    - 5. Verify that Underground storage tank sumps have been inspected at least semi-annually and that sump sensors are set below the lowest sidewall penetration within each sump.
    - 6. Inspect each motor fuel dispenser hose for tears, leaks, holes, kinks, crimps or defects of any kind and replace as necessary.
    - 7. Inspect each motor fuel dispenser nozzle for leaks, obstruction of vapor recovery holes, or defects of any kind and replace as necessary.
    - 8. Inspect each motor fuel dispenser cabinet interior and dispenser sump for leaking components and the presence of motor fuel, water or debris, remove and dispose of any motor fuel, water or debris in accordance with all applicable federal, state, and local requirements, and repair each component as necessary.
    - 9. Verify that grade level fill covers are tight fitting and properly color-coded.
    - 10. Inspect each automatic tank gauge detector panel for proper operation of product monitoring and leak detection systems and repair or replace components as necessary.
    - 11. Deficiencies discovered during the monthly visual inspection shall be repaired or otherwise corrected within 30 days.
    - 12. The Class B operator shall ensure that the underground storage tank system that will store or dispense product is compatible with the product that will be stored or dispensed.
- (3) Delegation of the responsibilities of 527 CMR 9.07(Q) to designated Class A, B, or C operators shall not relieve the owner or operator from liability for non-compliance with the requirements of 527 CMR 9.07(Q).

9.08: Referenced Publications

Documents or portions thereof that are referenced within 527 CMR 9.00 shall be considered a part of the requirements of 527 CMR 9.00. Refer to 527 CMR 49.00 for a complete listing of all documents referenced in 527 CMR.

REGULATORY AUTHORITY

527 CMR 9.00: M.G.L. c. 22, § 14; c. 22D, § 4; c. 148, §§ 9, 10, 13, 28, 37, 38 and 38E.