



DIVISION OF OCCUPATIONAL LICENSURE OFFICE OF PUBLIC SAFETY AND INSPECTIONS

Existing Building Code

Application and Compliance Methods

(Based on the **10th Edition** of 780 CMR)

Note: All code sections referenced in this presentation come from the 10th Edition of 780 CMR. Some code sections are excerpts with italics and underlines added for presentation. You should consult the official versions of the Code for the authoritative language.



What is the Existing Building Code?

- The Existing Building Code of Massachusetts uses the *International Existing Building Code 2021 (IEBC)* as its model. Massachusetts amendments are carried through Chapter 34 of **780 CMR**.
- *The intent of this code is to **provide flexibility** to permit the use of **alternative approaches** to achieve **compliance** with **minimum requirements** to provide a reasonable level of **safety, health, property protection and general welfare** insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings. **IEBC 101.3***
- *This code shall apply to the repair, alteration, change of occupancy, addition and relocation of existing buildings, regardless of occupancy... **IEBC 101.4***
- Link to BBRS Official Interpretation



What about sections duplicated in the Building Code?

The existing building code International Building Code 2021, and the amendments are part of **780 CMR**, being Chapter 34. However, it does duplicate sections and text from different chapters. In the case of conflict between 780 CMR 34.00 and 780 CMR 1.00, **780 CMR 1.00** should dictate direction. Per **780 CMR 34.00 101.2:**

- 1. If requirements in 780 CMR 34.00 conflict with similar requirements in 780 CMR 1.00, then 780 CMR 1.00 controls.*
- 2. When 780 CMR 34.00 references requirements in other I-Codes, see 780 CMR 1.00 for guidance on how to use those I-Codes.*
- 3. Requirements in 780 CMR 34.00 for plumbing, fuel gas, electrical, elevators, fire, or accessibility shall be replaced by the requirements of the Massachusetts specialty codes, as indicated in 780 CMR 1.00.*
- 4. Any new building system or portion thereof shall conform to 780 CMR for new construction to the fullest extent practicable. However individual components of an existing building system may be repaired or replaced without requiring that system to comply fully with 780 CMR unless specifically required by this code.*



What about sections duplicated in the Building Code?

4. *Any new building system or portion thereof shall conform to 780 CMR for new construction to the fullest extent practicable. However individual components of an existing building system may be repaired or replaced without requiring that system to comply fully with 780 CMR unless specifically required by this code.*

This section (**IEBC 101.2 note 4**) is important to highlight because the intent is to have existing building systems meet as much of the requirements for new construction “**to the fullest extent practicable**”.

The last sentence about repair/replace is there to protect against a repair/replacement of an existing component triggering a full upgrade. So a furnace can be repaired/replaced without triggering an upgrade to the full mechanical system. Chapter 4, has all of the requirements for repairs.



What if there is a conflict between codes?

If there are other referenced code requirements that conflict with the **IEBC and 780 CMR 34.00** then, **IEBC** and **780 CMR 34.00** will take precedence.

IEBC 102.4.1 Conflicts

Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

IEBC 102.4.2 Conflicting Provisions

Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.



What about references to other codes and standards?

A referenced Code, Standard, or portion of one is enforceable as if it is part of the [**IEBC**](#) and [**780 CMR 34.00**](#). So a reference to Section 406.4(D) of NFPA 70 is applicable, but only that portion that is cited.

IEBC 102.4 Referenced Codes and Standards

The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.4.1 and 102.4.2.

Exception: *Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliance, the conditions of the listing shall govern.*

It's important to note that if a piece of equipment or appliance being installed exceeds the requirements set forth in the code, then the conditions listed for the equipment or appliance will take precedence.

The intent is for the highest level of safety prevail (2021 IEBC Code and Commentary pg 1-4)



What if there is a conflict between laws?

102.2 Other Laws

The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

If there is a situation where a local, state, or federal law voids or makes illegal a provision of **IEBC** and **780 CMR 34.00**, that statue, ordinance, or law will take precedence.

However, only those provisions will be void and/or made illegal; the rest of the code will remain in force.



Revisiting the purpose

Now that the applicability has been reviewed, we can look at the purpose again, which is to provide ***alternative approaches*** to achieve ***compliance with minimum requirements*** to provide a reasonable level of ***safety, health, property protection and general welfare***.

IEBC 101.3

*The intent of this code is to **provide flexibility** to permit the use of **alternative approaches** to achieve **compliance with minimum requirements** to provide a reasonable level of **safety, health, property protection and general welfare** insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings.*

The **IEBC** and **780 CMR 34.00** does and will provide an alternative approach than rest of the 780 CMR in respect to existing buildings, understanding that existing buildings may not be able to comply with 780 CMR

Safety is still priority



How will I know that Chapter 34 is being used?

Beyond the inclusion of the provisions within the Construction Drawings if required **780 CMR 107.2** and properly detailed (**780 CMR 106.2**), As part of **780 CMR 34.00 104.2.1**, a written study is to be conducted and submitted to the Building Official as a condition of the permit issuance. The Building Official will review certain existing aspects, listed below, and how the proposed work will affect these systems. The proposed compliance alternatives will also be submitted. This is to aid the Building Official in evaluating the proposed approach.

104.2.2.1

For any proposed work regulated by 780 CMR 34.00 and subject to section 107 of 780 CMR, as a condition of the issuance of a permit the building owner shall cause the existing building (or portion thereof) to be investigated and evaluated in accordance with the provisions of 780 CMR 34.00. The investigation and evaluation shall be in sufficient detail to ascertain the effects of the proposed work on at least these systems: structural, means of egress, fire protection, energy conservation, lighting, hazardous materials, accessibility, and ventilation for the space under consideration and, where necessary, the entire building or structure and its foundation if impacted by the proposed work. The results of the investigation and evaluation, along with any proposed compliance alternatives, shall be submitted to the building official in written report form



How will I know that Chapter 34 is being used?

It is also highly encouraged by the Code for the permit applicant to meet with the Building Official to review the proposed project. The Building Official can also require this meeting. Except in Repairs and Level 1 Alterations, if this meeting is requested by either party it must be granted.

IEBC 104.2.2

When requested by the permit applicant or the code official, the code official shall meet with the permit applicant prior to the application for a construction permit to discuss plans for the proposed work or change of occupancy in order to establish the specific applicability of the provisions of this code.



What are the ways Chapter 34 code is applied?

Chapter 3, Section **301** of the IEBC outlines that the Compliance Method is selected by the applicant. The compliance method must be one of these:

- **Repairs** – Using materials and methods like those of the original Construction
- **Alteration, Addition, or Change of Occupancy**
 - **Prescriptive Compliance** – A quicker, simplistic method that adheres closer to the base building code requirements
 - **Work Area Compliance Method** – A more in-depth method involving defined compounding alteration levels based on the proposed work. Provides more flexibility in addressing existing conditions through alternate compliance methods.
 - **Performance Compliance Method** – Added here just to note that this portion has been stricken in the Massachusetts Amendments. It is still listed in Chapter 3, but the actual chapter is stricken in 780 CMR 10th edition.
- **Relocated Buildings** - The rules governing the relocation of an existing building
- **Historic Buildings** – Additional compliance methods for historic buildings.



Do any of the provisions apply to all methods?

Chapter 3 (**IEBC** and **780 CMR 34.300**) provides a baseline. Its applicability to the different Compliance Methods will be covered in the appropriate description. The major sections covered within the chapter are:

- Existing, New, and Replacement Materials
- Occupancy and Use
- Masonry Parapets
- Structural Roofing Requirements
- Structural Requirements for Major Alterations
- Storm Shelters
- In-Situ Load Tests
- Accessibility
- Smoke Alarms and Carbon Monoxide Detection
- Addition and Replacement of Exterior Wall Coverings and Exterior Wall Envelopes



Example of one of the provisions specific to Massachusetts

Unreinforced Masonry

Since Massachusetts has a lot of older brick buildings, there are some amendments. This section also gives a good indication of the types of things that will apply to all projects regardless of compliance method.

- Regarding masonry parapets, the following exception applies indicating where bracing is required:
If the height-to-thickness ratio of an unbraced unreinforced masonry parapet does not exceed 2.5, then bracing is not required. For the purpose of this exception the height shall be measured from either the level of tension anchors or the roof sheathing, whichever is lower. ([780 CMR 34.00 302.6](#))
- Requirements for unreinforced masonry in the Prescriptive Compliance ([IEBC 503.6](#)) and Level 1 Compliance ([780 CMR 34.00 706.3.2](#)) methods that shall only apply when the roof alteration proposed requires a permit for re-roofing and when the roof covering is removed from the entire roof diaphragm.



Repairs –Materials, Fire Protection, and Structural

Repairs are using the materials and methods like those of the original construction. It also covers to what extent these repairs must comply with **780 CMR**. In general, repairs must be completed in such a manner as to preserve the current level of protections for life safety including egress and fire safety. **The repairs cannot make a building less safe.**

Repairs due to damage to the structures that is less than substantial are allowed to restore back to pre-damaged state using materials and strength per the original construction. One of the major exceptions is **Snow Loads**. These must be repaired to **780 CMR** standards as snow loads at a level to inflict damage occur more frequently than wind or seismic. A building's historic Live and Dead loads also have a history of adequate service. The code's intention here is that it isn't restored to a level that could fail again within the next few winters, compared to the failure assumed with wind and seismic being on a longer time span.

IEBC Electrical 406, IEBC Mechanical 407, and IEBC Plumbing 408 should meet some basic requirements as listed, focused on making sure the systems are not made any worse, and identifying certain items that are easily upgradeable.

Repairs to *Historic* buildings are covered in later chapters and should be taken as a case by case basis.



Prescriptive Compliance Method

The prescriptive Compliance Method applies to alteration, addition, and change of use and is the most conservative of the options. **IEBC 501.1.1** This method cannot be combined with the provisions in Chapters 6 through 12.

The methods within this chapter provide less alternative compliance paths and is more administrative in nature.

Any additions (**IEBC and 780 CMR 34.00 502**) must comply with the **780 CMR** and must be made so that the addition of the new structure to the existing structure does not make the existing structure less complying prior to the addition. The combined height and area must meet **780 CMR Chapter 5**.

Any alterations made (**503**) must not make the existing structure any less complying than the existing building or structure was prior to the alteration.

Fire Escapes shall not be allowed to be part of the means of egress in new portions of existing buildings, (**IEBC 504.1.1**) and only should be counted as a component in the existing building. (**IEBC 504.1.1**). New fire escapes for existing buildings may be allowed per the requirements in **IEBC 504.1.3**. Fire escapes cannot be more than 50% of the required number of exits or exit capacity. (**IEBC 504.1.4**)



Prescriptive Compliance Method – Change of Occupancy

IEBC 506.1 Compliance

A change of occupancy shall not be made in any building unless that building is made to comply with the requirements of the International Building Code for the use or occupancy. Changes of occupancy in a building or portion thereof shall be such that the existing building is not less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the code official, changes of occupancy shall be permitted without complying with all of the requirements of this code for the new occupancy, provided that the new occupancy is less hazardous, based on life and fire risk, than the existing occupancy.

Exception: *The building need not be made to comply with Chapter 16 of the International Building Code unless required by Section 506.5.*

Changes in occupancy can change the hazards that the existing building was originally designed for. However, the Building Official can approve alternative methods of compliance or waive certain requirements if the proposed use is less hazardous than the previous use. The code further elaborates on the structural requirements and thresholds in **IEBC 506.5**.

IEBC 506.1.1 further says that even if the occupancy is not changing, but the character of use is, then the building must comply with any of the specific provision requirements for that use. For example, a (B) Business use changing from offices to ambulatory care. Both are (B) Business, but ambulatory care has special requirements that must now be applied.



Classification of Work Compliance Method – What is the Work Area?

This method allows for more compliance paths, and a much more robust documentation of the changes. If this method of compliance is used, then Chapters 7 through 12 will apply. As amended by the State of Massachusetts, Chapter 3 is also applicable in addition the requirements in Chapters 7 through 12. This method is broken into different categories, dependent on the **Work Area**. Chapter 5 is not applicable.

202 General Definitions

Work Area *That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.*

Please note that incidental work is not within the Work Area, and should not be counted. If electrical work is being done as part of a renovation and work must be done in the main panel to update circuits, and that electrical room is otherwise not being touched, then the electrical room work is incidental. This also applies to work not within the original scope and intent of the owner, but mandated by code. So structural upgrades throughout the building would not increase the work area if those upgrades are mandated by the code itself.



Classification of Work Area Compliance Method – Levels Part 1

Based on the scope and work area the following classifications may be used.

- **Level 1 – Chapter 7** – *Include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose. (IEBC 602.1)*
- **Level 2 – Chapter 8** - *Level 2 alterations include the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment, and shall apply where the work area is equal to or less than 50 percent of the building area. (IEBC 603.1)*
- **Level 3 – Chapter 9** - *Level 3 alterations apply where the work area exceeds 50 percent of the building area. (IEBC 604.1)*

Each of the chapters contains its own requirements as well as any additional requirements. A level 3 alteration states it needs to meet the requirements of a level 2 alteration and level 1 alterations. **(IEBC 604.2)**. Work Area can be 0 Square feet, for example equipment, device, or system upgrades. See BBRs Official Interpretation.



Classification of Work Area Compliance Method – Levels Part 2

Based on the scope and work area the following classifications may be used.

- **Change of Occupancy – Chapter 10** - *Change of occupancy provisions apply where the activity is classified as a change of occupancy as defined in Chapter 2. (IEBC 605.1)* This includes a change of use within the occupancy.
- **Additions – Chapter 11** - *Provisions for additions shall apply where work is classified as an addition as defined in Chapter 2. (IEBC 606.1)* Generally the new addition must meet the current **780 CMR**
- **Historic – Chapter 12** - *Historic building provisions shall apply to buildings classified as historic as defined in Chapter 2. (IEBC 607.1)*

Each of the chapters contains its own requirements as well as any additional requirements. For example, A level 3 alteration states it needs to meet the requirements of a level 2 alteration and level 1 alterations. **(IEBC 604.2)**.



Levels 1, 2, and 3

User Note for Chapter 9, IEBC and 780 CMR 34.00

Chapter 9 provides the technical requirements for those existing buildings that undergo Level 3 alterations. The purpose of this chapter is to provide detailed requirements and provisions to identify the required improvements in the existing building elements, building spaces and building structural system. This chapter is distinguished from Chapters 7 and 8 by involving alterations that cover 50 percent or more of the aggregate area of the building. In contrast, Level 1 alterations do not involve space reconfiguration, and Level 2 alterations involve extensive space reconfiguration that does not exceed 50 percent of the building area. Depending on the nature of alteration work, its location within the building, and whether it encompasses one or more tenants, improvements and upgrades could be required for the open floor penetrations, sprinkler system or the installation of additional means of egress such as stairs or fire escapes. At times and under certain situations, this chapter also is intended to improve the safety of certain building features beyond the work area and in other parts of the building where no alteration work might be taking place.

This is a good summation of the three levels and the intent of these methods. Level 1 does not reconfigure the space. Level 2 reconfigures the space, but less than 50% of the building area. Level 3 is when more than 50% of the space is updated. This is in addition to the other definitions from the previous page, as a level 2 and 3 have additional triggers. Further, the individual chapters themselves identify what triggers its use.



What is are additional compliance alternatives?

780 CMR 34.00 104.12 Compliance Alternative

(Emphasis added)

“Where compliance with the provisions of the code for new construction, required by 780 CMR 34.00, is impractical because of construction difficulties or regulatory conflicts, compliance alternatives may be accepted by the building official. The building official may accept these compliance alternatives, archaic materials and assemblies in Resource A of 780 CMR 34.00, or other alternatives proposed. If the compliance alternative involves fire protection systems the building official shall consult with the fire official. Compliance alternatives, if any are proposed, shall be included with the application for a permit and shall identify all items of noncompliance or partial compliance with the requirements of 780 CMR 34.00, and for approval by the building official. The building official shall respond to the acceptability of any proposed compliance alternatives within 30 days of the filing of the permit application. Where proposed compliance alternatives are, in the opinion of the building official, unacceptable, or where issues of noncompliance remain, the permit applicant shall have the remedies prescribed by section 113 of 780 CMR.”

The key here is that acceptance of a compliance alternative is up to the *Building Official*. They may decide that one of the proposed alternatives does not meet the requirements “*to provide a reasonable level of safety, health, property protection and general welfare.*” **(101.3)** If the compliance alternative is not acceptable, the permit applicant may appeal per **780 CMR 113.**



Relocated Buildings

Relocated Buildings must follow the guidelines of the **International Fire Code** and **780 CMR** property maintenance requirements, as the *International Property Maintenance Code* is not adopted. (**1401.1**) Field fabricated elements must meet **780 CMR** or **Massachusetts Residential Building Code** including foundations and connections. The Building must also meet wind loads, seismic loads, and snow loads of the new location per **1402.3 and 1402.4**.

780 CMR 1402.7 Required Inspection and Repairs

The code official shall be authorized to inspect, or to require approved professionals to inspect at the expense of the owner, the various structural parts of a relocated building to verify that structural components and connections have not sustained structural damage. Any repairs required by the code official as a result of such inspection shall be made prior to the final approval.

Since a lot can happen during a move or disassembly, the code official is impowered to inspect, or hire an approved professional to inspect the building at no cost to the Jurisdiction to make sure all of the structural elements have not been damaged during the move.



Appendix J Residential Code

- Appendix AJ in **780 CMR 51.00 Massachusetts Residential Code (780 CMR 51.00)** covers existing buildings and structures for One Family, Two Family, and Town Houses
- The main goals of Chapter 34 are applicable here as well, as the intent is to encourage the safe use of existing buildings and ensure that new work conforms to the intent of the code and that existing conditions remain at their current level of compliance or are improved.
- *Regardless of the category of work being performed, the work shall not cause the structure to become unsafe or adversely affect the performance of the building; shall not cause an existing mechanical or plumbing system to become unsafe, hazardous, insanitary or overloaded; and unless expressly permitted by these provisions, shall not make the building any less compliant with this code or to any previously approved alternative arrangements than it was before the work was undertaken. (780 CMR CH 51.00 AJ102.1 General)*
- An evaluation is not required but recommended. (**780 CMR CH 51.00 AJ104.1 General**)
- Extensive Alterations, where the work area exceeds 50%, shall be reconstruction and shall comply with those requirements. Work areas consisting of exclusively plumbing, mechanical, or electrical shall not be included. (**780 CMR CH 51.00 AJ109.3**) The work area should be clearly defined (**780 CMR 51.00 AJ105.1**)
- Historic Buildings need to use 780 CMR 34.00 Existing Building Code (**780 CMR 51.00 AJ113**)



Appendix J Residential Code – Compliance levels

Based on the scope and work area the following classifications may be used.

- **Repairs** – *The patching, restoration or minor replacement of materials, elements, components, equipment or fixtures for the purpose of maintaining those materials, elements, components, equipment or fixtures in good or sound condition.* ([**580 CMR CH 52.00 AJ106 Definitions**](#))
- **Renovations** – *The change, strengthening or addition of load-bearing elements; or the refinishing, replacement, bracing, strengthening, upgrading or extensive repair of existing materials, elements, components, equipment or fixtures. Renovation does not involve reconfiguration of spaces. Interior and exterior painting are not considered refinishing for purposes of this definition and are not renovation.* ([**580 CMR CH 52.00 AJ106 Definitions**](#))
- **Alterations** – *The reconfiguration of any space; the addition or elimination of any door or window; the reconfiguration or extension of any system; or the installation of any additional equipment.* ([**580 CMR CH 52.00 AJ106 Definitions**](#))
- **Reconstruction** – *The reconfiguration of a space that affects an exit, a renovation or alteration where the work area is not permitted to be occupied because existing means-of-egress and fire protection systems, or their equivalent, are not in place or continuously maintained; or there are extensive alterations as defined in **Section AJ109.3.*** ([**580 CMR CH 52.00 AJ106 Definitions**](#))
- **Additions** – *An addition to a building or structure shall comply with **780 CMR** as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this code. Where an addition impacts the existing building or structure, that portion shall comply with this code.* ([**580 CMR CH 52.00 AJ112 Additions**](#))



In Summary

- This code's goal is to provide a path to allow for the re-use of existing structures and provide alternate compliance paths for certain code requirements to allow for such re-use in a controlled manner without compromising life safety.
- Prior to permit issuance, an investigation and written report on the building is required. This report is to include the investigation, evaluation, and any compliance alternatives being used and is submitted to the *Building Official* for approval. The *Building Official* or permit applicant can further request a meeting prior to permit submission to review. (**104.2.2.1, 104.2.2, 104.12**) As code officials, these are your greatest assets in determining compliance and maintaining safety.
- As part of the work, the building should never be made less compliant than it originally was or made more unsafe. Any existing condition the *Building Official* deems to be unsafe must be corrected and made safe.
- At the *Building Officials* discretion, they can call for the elimination of conditions deemed dangerous. (**302.1**)
- The *Building Official* is authorized to approve or disapprove of additional compliance alternatives that may be proposed by the permit applicant. (**104.12**)
- Compliance Methods are for existing buildings only.



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Questions & Discussion