

## Must We?

### Yes, There Is a Requirement for Mandatory Language in the Building Codes



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## A Review of the Model Codes and Their Content

Written records of building codes date back as far as 1700 B.C., with more advanced codes defining structural integrity of public buildings developed around 27 A.D. Over time, catastrophic structural failures, devastating fires, and disease outbreaks from improper sanitation prompted the evolution of building codes into a comprehensive guideline for regulating the design and construction of our infrastructure. Today the model codes provide a minimum set of performance requirements for design, construction, and subsequent inspection of our engineered infrastructure. The scope of the model codes includes, but is definitely not limited to:

- Structural integrity;
- Real estate issues;
- Fire prevention;
- Mechanical and electrical regulation;
- Safety;
- Social issues (e.g., accessibility); and
- Sanitation and plumbing.

In the past, the United States was regulated by three model code bodies. Each developed and published model codes that applied to different geographic locations of the country:

- The Building Officials and Code Administrators (BOCA) developed the *National Building Code*, applied in the northeastern and midwestern United States;
- The Southern Building Code Congress International (SBCCI) produced the *Southern Standard Building Code*, applied within the southern United States; and
- The International Congress of Building Officials (ICBO) developed and published the *Uniform Building Code*, implemented in the western United States.

Historically, suppliers and manufacturers were required to certify the compliance of their respective products with the appropriate building code

body. This was an expensive and inefficient practice if a product was used in two or more regions.

In late 1994, for the sake of industrial efficiency and economics, the three code bodies agreed to develop one unified code under the auspices of the International Code Council (ICC). The ICC is a nonprofit organization dedicated to developing a single set of comprehensive and coordinated national codes. The complete, unified code will be published for the first time in 2000. It consists of the segments shown in the table below.

While they provide guidance in themselves, the model codes cite standards to clarify specific requirements. Referencing standards is practical, as it avoids the reprinting of such information and also ensures that the latest technology is incorporated into the building codes since standards are routinely revised.

The model codes are similar to ASTM standards in two aspects:

- They are living documents subject to continual change; and
- They are not legal documents until cited in a contract or called out in regulation by an agency or municipality, etc.

Over 60 standards developers contribute standards to the codes; ASTM is the largest contributor, with approximately 350 standards cited in over 1,000 references throughout all 11 segments (see table below).

#### Mandatory Language in the Codes

Section 3.6.2 of the ICC's *Code Development Process for the International Codes* mandates that any standard to be cited in the

### Table

#### Segments of the New Unified Code

International Mechanical Code (IMC)  
International Residential Code (IRC)  
International Plumbing Code (IPC)  
International Energy Conservation Code (IECC)  
International Fire Code (IFC)  
International Fuel Gas Code (IFGC)  
International Building Code (IBC)  
International Zoning Code (IZC)  
International Private Sewage Disposal Code (IPSDC)  
International One- and Two-Family Dwelling Code (IDC)  
International Property Maintenance Code (IPMC)

codes "shall be written in mandatory language." In preparation for the complete publication of the code segments in the year 2000, the ICC has been strictly enforcing this policy. As a result, ASTM staff has been working to help technical committees that have standards under their jurisdiction cited in the codes to comply with this mandate. The purpose of this article is to inform readers of the proactive steps taken by ASTM in meeting the requirement for mandatory language, and alert them to available resources.

There are several criteria for the content of the codes, as well as any standard cited within them:

- Use of mandatory language;
- Avoiding the specification of a particular material, method, or product or proprietary agency;
- Clearly described scope statements;
- Description of test sample preparation, selection, or both, in detail in test standards;
- Prescription of the reporting format for test results in test standards;
- Use of gender neutral language;
- Promulgation of cited standards according to a consensus procedure; and
- Inclusion of the most recent version of the cited document.

Since the introduction of the mandatory language requirement by BOCA, and its subsequent adoption by the ICC, ASTM has been proactively educating its staff and technical committees about the need for removing permissive terminology in the standards cited by the model codes. This comprehensive program has included several steps.

The first step involved working closely with BOCA staff to develop the model codes caveat that appears in the scope section of an ASTM standard intended for citation in the codes. This caveat, described in the *Form and Style for ASTM Standards* sections A5.6 and B5.5, reads:

"For standards developed for reference in model (building) codes, include the following statement:

*The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard."*

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## Guidelines for Terminology in Referenced Standards

(From the ICC First Draft Appendix)

The following is a compilation of terms and phrases that are commonly used in the writing of standards. Examples of both "mandatory" and "nonmandatory" language are included. While intended to be comprehensive, this compilation is not all-inclusive. Words used in the masculine gender include the feminine and neuter; the singular includes the plural and the singular.

### Typical "Mandatory" Terms

(including all variations of these terms)

are	is not prohibited from	shall not be required
is	is not required	shall not....unless
is capable of	must	shall not....except where
is not intended to prohibit	shall	will

### Typical "Nonmandatory" Terms

(including all variations of these terms)

advise	feasible	maybe	reasonable
aspire	grant	might	recommend/
can	guide (to act as a	ought/ought to	recommendation
consider	guide to the	permitted (is	request
could	user) guideline	permitted)	should
chance (on the	imply	possible	suggest/
chance)	infer	practice	suggestion
desire	likely (and the like)	presume	would
encourage	may	probable	urge

### Other Terms

(including all variations of these terms)

#### Safe, Safely

When this term appears, it should either be replaced with a detailed outline of what constitutes "safe" or "safely" or be followed by such detailed information.

#### Nationally recognized design practice, Good design practice, Accepted method

When one of these phrases is used, it should either be replaced with a reference to a specific document or follow the phrase with a detailed list of the elements regulated by the design method.

#### Approved method

When this phrase is used it should be followed by a detailed outline that will provide a user of the document the elements for determining what must be present if it would be approved (e.g., "...by an approved design method that takes into account the [list of specific details that must be accounted for in the design].")

#### Shall be permitted

This phrase is typically unnecessary. Unless a specific condition, method or item is specifically "prohibited" within a document, it is always "permitted." When the phrase is used to indicate a conditional provision, i.e. "shall be permitted...provided," we suggest that the statement be written to indicate when an element is not to be allowed rather than when it is permitted.

#### Example:

To tell the user that plain concrete can only be used in an assembly when it is not required to have a fire resistance rating:

#### Recommended wording:

Plain concrete shall not be used in an assembly required to be fire resistance rated.

#### Rather than:

Plain concrete shall be permitted to be used provided the assembly is not required to have a fire resistance rating.

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In another proactive measure, ASTM has made educational resources such as “A Guide to the Use of Standards in the ICC International Codes” and the “Code Development Process for the International Codes” readily available to ASTM staff and technical committees. (Also see the ICC web site at [www.intlcode.org](http://www.intlcode.org) for additional information.) Managers are working closely with the affected committees, informing them about the requirement for incorporating mandatory language. Also available is BOCA’s guideline of mandatory versus nonmandatory terms (see sidebar, page 25).

Finally, staff reviews the code change proposals and hearings each year. They track ASTM standards currently cited in the codes, as well as any additional ASTM standards proposed for a new citation, or possible deletion, during the annual code cycle. Working with the technical committee staff will facilitate the process for replacing permissive language when the need is identified. ASTM works closely with the relevant technical committee to review, and if necessary and appropriate, correct any standards noted as “non-compliant” by code staff. The staff manager can update the committee on the status of various standards under the committee’s jurisdiction in the building codes, and can advise committees on the best way to eliminate permissive language, either through editorial changes or balloted technical changes.

The effort to ensure inclusion of mandatory language in standards intended for citation in the codes has required a commitment of ASTM resources. However, it has been successful, as the majority of ASTM standards cited in the codes are compliant. Most of the remainder are either on ballot or being editorially revised to remove permissive language, while a few others are being worked out at the subcommittee level.

Your staff manager can advise you on many issues involving your committee’s standards in the building codes, including the incorporation of mandatory language. **SN**