



**The Commonwealth of Massachusetts**  
 Department of Public Safety  
 Board of Building Regulations and Standards  
 One Ashburton Place - Room 1301  
 Boston, MA 02108

**MASSACHUSETTS STATE BUILDING CODE - CODE AMENDMENT PROPOSAL**

Code (indicate with an 'x')	<input checked="" type="checkbox"/> 8 <sup>th</sup> Edition Base <input type="checkbox"/> 8 <sup>th</sup> Edition One- and Two-Family Dwellings <input type="checkbox"/> 7 <sup>th</sup> Edition Base, <input type="checkbox"/> 7 <sup>th</sup> Edition One/Two-Family	State Use Only	
Date:	11/8/2010	Date Received:	11_08_2010
Code Section:	7 <sup>th</sup> Edition (903.3.1.4 [new] & 5313.5.2 [new]) 8 <sup>th</sup> Edition (903.3.1.4 [new])	Code Change Number:	2010_12_10
Name and company affiliation if any: Dana Haagensen - Massachusetts Department of Fire Services			
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**Indicate with an 'x' the type of amendment proposed:**

Change Section    
  Add new section    
  Delete section and substitute    
  Delete section; no substitute  
 Other, Explain:

**Please type below the proposed amendment.** If you propose to change a section, please copy the original text from either the IBC 2009 or IRC 2009 or pertinent I-code. Indicate with strike out the text you propose to delete and add new text in either *italic* or **red** font. Also provide justification of your proposal as a second page and include information on the Introduction and Background of your proposal, Pro and Con Reasons for Adoption of it, a summary of estimated Costs for Building Owners, and Life Safety Benefits for building occupants. When complete email this file to [mike.guigli@state.ma.us](mailto:mike.guigli@state.ma.us). Please use additional pages if necessary.

**EMERGENCY CODE CHANGE REQUEST**

In the Base Building Code (7<sup>th</sup> edition & 8<sup>th</sup> edition), insert a new Section 903.3.1.4 to read as below. In the 7<sup>th</sup> edition of the One/Two Family Building Code, insert a new Section 5313.5.2 to read as below.

**903.3.1.4 Antifreeze.** Antifreeze shall not be used in sprinkler systems that protect dwelling units, as defined by NFPA 13, NFPA 13R and NFPA 13D. **Such sprinkler systems shall be located within the building thermal envelope or otherwise be protected from freezing.** (Yellow highlight indicates additional language inserted and approved by the BBRS on Nov 9, 2010.)

**5313.5.2 Antifreeze.** Antifreeze shall not be used in sprinkler systems that protect dwelling units, as defined by NFPA 13, NFPA 13R and NFPA 13D. **Such sprinkler systems shall be located within the building thermal envelope or otherwise be protected from freezing.** (Yellow highlight indicates additional language inserted and approved by the BBRS on Nov 9, 2010.)

State Use Only
This proposed amendment was presented at public hearing on _____ and the Board of Building Regulations and Standards has taken the following action:
<input type="checkbox"/> Approved as submitted <input type="checkbox"/> Approved as amended <input type="checkbox"/> Denied <input type="checkbox"/> Tabled for further study or action

### Introduction and Background:

As a result of a fire/explosion fatality and injuries in an 8/18/2009 California incident, and fire injuries in a 10/2001 New Jersey incident, the NFPA issued Tentative Interim Amendments (TIA) in August of this year to the 2010 editions of NFPA 13, NFPA 13R and NFPA 13D. These amendments prohibit the use of antifreeze in new fire sprinkler installations that protect residential areas. The NFPA TIA's only become applicable in Massachusetts when adopted by the BBRS and promulgated in the State Building Code.

Current antifreeze chemicals used in fire sprinkler systems, glycerin and propylene glycol, are combustible liquids. When mixed with water in certain concentrations, and under certain conditions of discharge from a fire sprinkler, the antifreeze solution is combustible/explosive. Rather than reduce the fire hazard in these circumstances, the fire hazard can actually be increased due to the fire sprinkler system itself.

Discussions about correction of existing fire sprinkler systems utilizing antifreeze are ongoing with the NFPA Technical Committees and will be dealt with under separate proposals.

See the attached NFPA Standards Council Decision. See also [www.nfpa.org/antifreeze](http://www.nfpa.org/antifreeze) for more complete information and test reports.

### Pro and Con Reasons for Adoption:

These emergency changes, if adopted, would address an immediate life safety hazard that was not previously contemplated. There are no cons to adoption of the proposed emergency changes.

### Costs for Building Owners:

Proper fire sprinkler system design can be accomplished using other standardized approaches at comparable cost to installing antifreeze systems. Antifreeze chemicals are themselves costly, and there are added maintenance costs for antifreeze systems not found with traditional wet sprinkler systems. The use of sidewall sprinklers fed by water-filled piping in interior (heated) walls is now a popular approach for residential protection due to the costs associated with antifreeze and dry systems.

### Life Safety Benefits:

This code change, if adopted, eliminates a serious fire/life safety hazard that is currently allowed by Code.