



California State Fire Marshal CODE INTERPRETATION

Date Issued	December 30, 2013	Interpretation	13-001
Topic	Backflow requirements for Residential Fire Sprinkler Systems under the 2013 California Residential Code		
Code Section(s)	2013 California Residential Code Section R313.3.5.3		
Requested by	National Fire Sprinkler Association (NFSA) Bruce Lecair, Regional Manager		
Date Received	December 16, 2013		

Question: Is it the intent of Section R313.3.5.3 of the 2013 California Residential Code (CRC) to require backflow protection to separate a stand-alone residential fire sprinkler system from a potable water source supplying the system?

Answer: The answer to this question is dependent on the specific installation. Stand-alone residential sprinkler systems that 1) Use piping materials that are suitable for potable water, 2) Do not contain antifreeze, and 3) Do not have a fire department connection, **are excluded from any backflow protection requirements** under CRC Section R313.3.1. CRC Section R313.3.1 is a “*specific*” code provision that applies to residential sprinkler systems meeting these criteria. Any stand-alone residential sprinkler system that does not meet the three criteria must be provided with backflow protection in accordance with CRC Section 313.3.5.3, which contains the “*general*” requirements for providing backflow protection for residential sprinkler systems.

CRC Section 1.1.7 indicates that, where a conflict exists between code sections, specific provisions prevail over general provisions, even if the specific provision is less restrictive. For reference, CRC 1.1.7 assigns the following as the general order of precedence and use of the California Residential Code (Item 2 applies in this case):

1. *Differences. In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.*
2. *Specific provisions. Where a specific provision varies from a general provision, the specific provision shall apply.*
3. *Conflicts. When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail.*

As background, it is of interest to note that the provisions contained in CRC Section R313.3.5.3 were brought over from the 2012 International Residential Code (IRC) Section P2902.5.4 to correlate with the provisions of CRC Section R313. This action is due in part to the plumbing code chapters of the IRC not being adopted in California, California has adopted the 2012 Uniform Plumbing Code (UPC) for the 2013 California Plumbing Code (CPC). Nevertheless, the above interpretation is consistent with how IRC Chapter 29 applies without the California amendments.

It is also of interest to note that this interpretation is consistent with California Health and Safety Code Section 13114.7 (also reprinted in Section 603.5.15 of the California Plumbing Code), which does not require backflow protection for residential fire sprinkler systems meeting the restrictions listed in CRC Section R313.3.1.

For reference, Health and Safety Code (California Statute not regulation):

(a) For the purposes of this section the following are definitions of class I and class II systems:

(1) American Water Works Association [A.W.W.A] Manual No. M-14 class 1 – Automatic fire sprinkler systems with direct connection from public water mains only; no pumps, tanks, or reservoirs; no physical connection from other water supplies; no antifreeze or additives of any kind; and all sprinkler drains discharging to the atmosphere or other safe outlets.

(2) American Water Works Association [A.W.W.A] Manual No. M-14 class 2 – Automatic fire sprinkler systems which are the same as class 1, except that booster pumps may be installed in the connections from the street mains.

(b) Automatic fire sprinkler systems described in subdivision (a) shall not require any backflow protection equipment at the service connection other than required by standards for those systems contained in the publication of the National Fire Protection Association entitled “Installation of Sprinkler Systems” [NFPA Pamphlet No. 13, 1980 edition]

Conclusion: Based upon code sections above, backflow prevention is not required in fire sprinkler systems that are constructed of materials that are approved for potable water.