

Technical Q & A

2009 IRC Sprinkler Location Requirements

by Larry Wainright

Find out if your state is adopting or rejecting new residential sprinkler requirements.



Question

The 2009 International Residential Code (IRC) requires sprinklers to be installed in all one- and two-family dwellings built after January 1, 2011. What areas of the house need to be covered by the automatic sprinkler system? Does the attic space need to be sprinklered for example? What about crawlspaces or unfinished areas of the basement?

Answer

The debate over requirements for sprinkler installations in all new one- and two-family dwellings is ongoing. Although the provision for mandating automatic fire sprinklers is included in the 2009 IRC and is expected to remain in the 2012 IRC, some states and local jurisdictions are retaining the provision and some are removing it when they adopt the national model code locally. These jurisdictions are debating the merits of automatic sprinkler systems for increased life safety versus the cost of installing these systems. To date, the states that have adopted the 2009 IRC as their model code are split; some are adopting the requirements and others are striking them from the local adoption. (Visit www.sbcindustry.com/sprinkler.php to see if your state has adopted them.) Further, a number of states are taking legislative action to further restrict the implementation of the fire sprinkler requirements. For instance, Florida, New Hampshire, Nevada, Mississippi and Iowa all have bills pending in their respective legislatures that would prohibit state and local jurisdictions from requiring installation of fire sprinklers in new or existing one- or two-family residential dwellings or residential buildings that contain up to four dwelling units.

Regardless, California, New Hampshire, Vermont and Pennsylvania have adopted the IRC language and other states will certainly join them, so it is important to understand the requirements. The specific provision from the 2009 IRC states:

R313.2 One- and two-family dwellings automatic fire systems. Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA (National Fire Protection Association) 13D.

As indicated in section R313.2.1, the requirements for the design and installation of the sprinkler systems, including the required locations are found in Section P2904 of the 2009 IRC or NFPA 13D. The provisions in both of these documents are similar, so we will use Section P2904 as the basis of this discussion.

There are several spaces within a one- or two-story building that are exempt from the sprinkler requirement:

- Attic spaces, unless they contain fuel-fired equipment such as a furnace or a hot water heater. If the space does contain fuel-fired equipment, then a single sprinkler

head must be installed above the equipment. The remainder of the area does not require additional sprinklers.

- Crawl spaces have the same requirements as attic spaces. Sprinklers are not required unless they contain fuel-fired equipment; if so, only a single sprinkler head above the equipment is required.
- Normally unoccupied concealed spaces follow the same rules as attics and crawl spaces. An example is the space between the top and bottom chords of a truss that has a floor above and a ceiling below. The same applies to joists or conventional framing. Another example of an unoccupied concealed space is walled off areas where there is no access except for maintenance purposes.
- Closets and pantries with gypsum wallboard finished walls and ceiling and an area not greater than 24 sq ft where the smallest dimension is not greater than 3'.
- Bathrooms with an area not greater than 55 sq ft.
- Garages, carports, exterior porches and unheated entry areas that are adjacent to an exterior door such as a mud room or breezeway.

All areas not listed in this list of exemptions are required to have automatic sprinkler systems installed. If you are in doubt as to whether an area is exempt from the sprinkler requirement, always consult with your local building official. **SBC**

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at a glance

- ❑ Even if code mandated, automatic sprinklers for one- and two-family dwellings are not required to be installed in every area of the dwelling. With some restrictions, attic spaces, crawl spaces, concealed spaces, closets, pantries, bathrooms, garages, carports, exterior porches and other unheated entry areas do not require fire sprinklers.
- ❑ When in doubt about the required location of fire sprinklers, contact your local building official.

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