

Residential Fire Sprinklers and the IRC
International Code Council
Frequently Asked Questions

- **What is the fire sprinkler requirement approved in the 2009 International Residential Code?**
 - The 2009 IRC requires an approved fire sprinkler system in all new one- and two-family dwellings and townhouses.
- **When will dwellings and townhouses be required to install fire sprinklers?**
 - An approved fire sprinkler system must be installed in all townhomes constructed after the 2009 IRC is adopted.
 - An approved fire sprinkler system must be installed in all one- and two-family dwellings constructed after the 2009 IRC is adopted, OR January 1, 2011 whichever is later.
- **Because the requirements for fire sprinkler systems will be included in the 2009 IRC, does that mean that it applies to everyone?**
 - No. The 2009 IRC is one of a set of model codes published by the Code Council. The IRC will not be effective locally until it is adopted at state or local level.
- **Will a row of attached townhouses have one fire sprinkler system?**
 - No. Each townhouse will have its own separate fire sprinkler system. Just as the smoke alarms within a single townhouse are not interconnected with other townhouses, the fire sprinkler system will be individual for each townhouse and is not to be interconnected with other townhouses.
- **What if a room is added on to an existing home or townhouse that does not have an approved fire sprinkler system?**
 - An exception in the 2009 IRC states that a fire sprinkler system is not required as the result of additions or alterations to an existing building that does not already have fire sprinklers.
- **Are fire sprinklers installed in the entire dwelling or townhouse?**
 - Fire sprinklers to be installed in all areas of a dwelling unit except:
 - Attics not containing fuel-fired equipment
 - Crawl spaces not containing fuel-fired equipment
 - Closets and pantries of 24 square feet or less, and with the smaller dimension not greater than 3 feet
 - Bathrooms or 55 square feet or less
 - Garages, carports, porches
 - Unheated entry areas such as mud rooms
- **How will decisions be made to determine what pipe size to use and where to place the sprinkler heads?**
 - Either NFPA 13D or IRC Section P2904 (newly added section) can be used for fire sprinkler system design and installation criteria.
 - IRC Section P2904 contains design and installation criteria for a multipurpose fire sprinkler system and contains tables to determine pipe sizes based on water meter size, length of pipe runs, sprinkler flow, piping material and other factors.
- **Is the fire sprinkler system a stand-alone system or is it part of the plumbing system?**
 - The fire sprinkler system can either be separate from the domestic plumbing system, or it can be a multipurpose fire sprinkler system. A multipurpose fire sprinkler system supplies domestic water to both the fire sprinklers and the plumbing fixtures.
- **What type of piping can be used?**
 - Piping allowed for fire sprinkler systems can be metallic (typically copper), or non-metallic (CPVC or PEX).

- **What is the cost of the fire sprinkler system?**
 - Cost is affected by several components of the fire sprinkler system. Most significantly by the type of water source (municipal water system or private well), the type of piping (metallic or non-metallic), and pipe design (stand-alone or multipurpose).
 - A recent study by the National Fire Protection Research Foundation found prices ranging from \$0.38 to \$3.66 per square foot of sprinklered space. The bottom of the range consisted of dwellings/townhouses with a multipurpose fire sprinkler system of non-metallic piping and in an area served by a municipal water system. The top of the range consists of dwellings/townhouses with a fire sprinkler system of metallic piping and in an area where a private well and pump were required for water service. The installation of a multipurpose fire sprinkler system resulted in a cost reduction of about 33%.
- **Can the fire sprinkler system be eliminated if a layer of sheetrock is installed on the bottom-side of lightweight trusses?**
 - No, the fire sprinkler requirement does not include any alternatives.
- **Is the sprinkler system an absolute requirement or a trade off choice?**
 - The installation of the fire sprinkler system is a requirement, not an option. It cannot be traded away for other fire resistance or fire protection requirements. The reduction in separation between townhouses is the only reduction in fire protection allowed.
- **Are smoke alarms still installed when a fire sprinkler system is installed?**
 - Yes. Smoke alarms are still required to be installed. Smoke alarms react to smoke, and fire sprinklers react to heat. The smoke alarms are designed to waken and warn the occupants that a fire has occurred. The fire sprinkler system is designed to allow time for the occupants to escape by slowing the spread of fire and inhibiting flashover.
 - Flashover is a phase of a structure fire which occurs when enough heat has accumulated within a room for the entire room to suddenly ignite. Recent test have found that homes today can experience flashover within 4-5 minutes after the start of the fire.
- **Can the fire-rated construction in a townhouse be eliminated now that a fire sprinkler system is installed?**
 - When fire sprinklers are installed in townhouses the required separation between townhouses can be reduced from a 2-hour rated separation to 1-hour rated separation.
- **Does the homeowner insurance increase because of possible water damage from the fire sprinklers?**
 - A 2007 study by the National Association of Home Builders found a reduction of insurance premiums in dwellings and townhomes when fire sprinklers are installed. The reductions were up to 10% and varied depending upon state and location.
- **There were a record setting number of voting delegates at the Final Action Hearings to vote on this item. How does that impact the validity of the code?**
 - It is correct that a record number of members attended the Final Action Hearings on Saturday. This is evidence of the importance of the decision. This single requirement will have enormous impact on reducing the annual life loss due to fire in this great nation. US annual fire fatalities hover at about 3,000 and repeatedly 80 - 85% of these fatalities occurring in dwellings and townhouses. The fire sprinkler systems will save lives of the occupants and reduce the tragic annual fire death toll.
 - It is appropriate to see a high level of interest in such an important change. It is far better for 1,800 people to be in attendance to hear the testimony and discussions before making a decision, rather than 50 or 60 people making a decision that has such major impact.