



Residential Fire Sprinkler Facts

- Residential fire sprinklers are designed to give the occupants enough time to exit the residence and to hold the fire in place until the fire department arrives.
- Residential Fire Sprinkler cost is between \$3.00 - \$6.00 a square foot of living space per four local installers.
- Sprinklers are not required in bathrooms 55 s.f. or less.
- Sprinklers are not required in closets, provided the space is less than 24 s.f. and its least dimension does not exceed 3'-0".
- Sprinklers are not required in garages, open attached porches, and carports.
- Residential fire sprinklers can be designed as stand-alone or multipurpose systems

Types of Systems

- **Stand-alone.** In a stand-alone system, the sprinklers are piped separately from the potable water supply and are isolated from it by a check valve. The check valve is necessary because the water in the sprinkler piping does not circulate and may become stagnant.
- **Multipurpose.** In a multipurpose system, the sprinkler piping is part of the cold-water plumbing supply. Stagnation isn't a problem because fresh water enters the sprinkler lines every time a plumbing fixture draws water. Multipurpose systems are generally piped in either looped or networked configurations. In a looped system, heads are installed along or just off a line that runs in a loop around the house. To prevent stagnation, the designer avoids the long dead-end runs often found in stand-alone systems.

Head Activation

- Contrary to what you see in the movies, sprinkler heads do not all go off at once. Although such systems exist, they're used only in high-hazard areas like power plants and factories. The heads in residential (and most commercial) systems are individually activated by heat in the surrounding air. A typical residential sprinkler has a glass bulb containing a fluid that expands when exposed to heat. When the rated temperature is reached — usually between 155°F and 175°F — the glass shatters and water begins to flow. Other residential heads rely on a fusible link — pieces of metal soldered together. When the rated temperature is reached, the solder melts, the link comes apart, and the sprinkler comes on.

Coverage

The number of sprinklers needed is based on the size of each room; in residential systems the goal is to spray at least 0.05 gallons of water per minute per square foot of floor area. Coverage per head ranges from a low of 12 feet by 12 feet to a high of 20 feet by 20 feet. Some residential heads will work with as little as 13 gallons per minute (gpm), while others use up to 26 gpm. Commercial sprinklers, not surprisingly, require much more water.