

Fire Suppression Systems for Your Home

Hills residents are only too familiar with bush fire risk. Every summer is a concern for FESA due to often low winter rainfall and rising accumulation of leaf litter. There are many strategies that households can undertake to make the fire risk to their property as low as possible.

“Installing some sort of watering system to suppress fire is an obvious no-brainer” said Ross Mars from local water specialist Water Installations. “Either a roof-mounted sprinkler system and/or a perimeter spray network may enable householders to better protect their home. In extreme conditions these systems may not be enough, but it should still be an essential part of the homeowner’s fire strategy”.

Water Installations have installed a number of different types of home-protection systems, typically linked to petrol or diesel driven pumps that use tank rainwater or draw from a backyard pool. “You need at least 25,000 to 30,000 L storage if you wanted enough water to help fight a fire for about 30 minutes” Ross said.

Wet Sprinkler Systems

The sprinklers in these systems are attached to pipes containing pressurized water at all times. When one or more sprinkler heads open, water is automatically discharged. Heat melts or shatters the glass bulb or a soft metal link which then allows water to flow.

Wet-pipe systems are used wherever temperatures are high enough to prevent freezing. Water expands when it freezes, this causes water filled pipes to burst and become ineffective. Burst pipes decrease your fire suppression capabilities and can cause significant water damage.

Most common in public buildings. Typically, there is a network of overhead sprinklers with the pipework throughout ceiling or roof space.



Dry Sprinkler Systems

In a dry-pipe system, sprinklers are attached to pipes that contain pressurised air. When heat activates the sprinklers to open, the air pressure is reduced, allowing the dry pipe valve to open and water to flow from the sprinkler. Dry-pipe systems are usually used only when temperatures are not high enough to prevent freezing. A special valve blocks the entry of water into the piping, and as you need a compressor this system is not common in houses, but mainly used in some types of larger buildings.



Pre-action Sprinkler Systems

These systems contain an additional fire-detection device that will recognise a fire before the sprinklers are activated. The sprinklers are attached to a pipe containing air that may or may not be pressurised.

When the detection device senses a fire, it opens the main valve, allowing water to flow through the pipes before the sprinklers are set off. When the heat activates the sprinklers, water flows through immediately, as in a wet-pipe system.

Pre-action systems are usually employed in areas that are at risk for serious water damage due to damaged sprinklers and/or piping, such as computer rooms or where valuable equipment is stored.

They operate faster than dry systems, but tend to be significantly more expensive as you need both a fire detection system (smoke, heat detectors) wired to the pre-action valve which is opened only when fire detection system is activated and a sprinkler head opening before water is released.

Deluge Sprinkler Systems

These are the most common for houses. In these systems, sprinklers are open at all times. They are connected to a dry pipe that is connected to a water supply – a rainwater tank, dam, pool or mains water.

Operation can be manual (person opens valve to activate) or a fire detection device controls the main valve. When it is activated, the valve opens, allowing large amounts of water to flow through all of the sprinklers.

The purpose of a deluge system is to quickly wet down an entire hazardous area to prevent a fire from spreading. They can be installed inside rooms but typically are sprinklers on roof areas and around the perimeter of a house. These ensure good coverage of walls, windows and surrounding grounds to thoroughly wet the area.

Misting sprays are sometimes used but they will have little effect on an intense fire and are not recommended for bush areas.

(R) Perimeter sprinkler – high impact with a throw radius of about 10m.

(below) Brass sprinklers and steel pipework are best for fire suppression systems. Poly pipe and fittings will easily melt under intense heat.





(Above and below). An isolated house during the Margaret River bushfires in November, 2011. It was saved as there was a perimeter sprinkler system which was automatically activated by heat.



Examples of Our Fire Suppression Installations





