

## Sprinkler Systems

Image: Robert Tober

Automatic sprinkler systems distribute water on to a source of heat and, at the same time, alert the fire fighting units. Sprinkler systems are laid out to identify a fire as soon as it starts and keep it under control so that extinguishing by other means can be carried out.

In all but a few cases, the sprinkler system should extend over the whole area of operations. The system consists of one or more sources of water and a network of piping upon which sprinkler heads are installed at regular intervals in accordance with the relevant guidelines.

The sub-division of the sprinklers into groups facilitates faster identification of the location of the outbreak of fire for the fire fighting units.

A liquid-filled glass ampoule seals off the sprinkler in preparation for use. When the air temperature exceeds a predetermined value (in correctly sited systems this is solely as a result of heat from a fire) the expanding liquid bursts the ampoule and in doing so triggers the sprinkler. The extinguishing water thus released splashes on to the sprinkler plate and is distributed evenly over the source of the fire.



The extinguishing water only flows from the sprinklers that are triggered by the effect of heat. In this way selective extinguishing takes place and damage is kept to the necessary minimum.

The much cited water damage which sprinkler systems cause should really be seen in relation to the fire damage which would have arisen had no sprinkler system fought the fire at the start.

### Wet System

The piping is constantly filled with water.

### Dry System

The piping is filled with compressed air. A dry alarm valve is opened when there is a drop in pressure and an in-flow of water is allowed. This system is used when there is a risk of frost.

### Pre-controlled Dry System

A combination of sprinkler system and fire detection system. Water supply only takes place with a simultaneous signal from sprinkler and fire detector. In this way water damage, as a result of mechanical damage to a sprinkler head, is avoided.

In Austria the layout of a sprinkler system follows the Technical Guidelines for Fire Prevention TRVB S127.