

43—Fire Protection

TABLE 43-E

STANDARD TEMPERATURE RATINGS FOR AUTOMATIC SPRINKLERS

Rating	Operating temperature (F)	Color	Maximum ceiling temperature (F)
Ordinary	135-170	Uncolored*	100
Intermediate	175-225	White*	150
High	250-300	Blue	225
Extra high	325-375	Red	300
Very extra high	400-475	Green	375
Ultra high	500-575	Orange	475

From Sprinkler Systems, NFPA Standard No. 13, Table 3651

*The 135 F sprinklers of some manufacturers are half black and half uncolored. The 175 F sprinklers of the same manufacturers are yellow.

the piping, sends a trouble signal without tripping the water-control valve.

The preaction valve, which controls the water supply to the system piping, is actuated by a separate automatic detection system, which is located in the same area as the sprinkler, and not by the operation of a sprinkler. Because the detection system is more heat sensitive than the sprinklers, the water-supply valve opens sooner than in a dry-pipe system. The water-supply valve can also be operated manually.

Usually an alarm is sounded when the valve opens and starts filling the system with water. There may then be time to put out the fire with portable equipment before the sprinklers go into action and drench the area with water. This system is especially effective where valuable merchandise is handled or stored.

Deluge. The deluge system wets down an entire area by admitting water to sprinklers that are opened at all times. Deluge valves that control the water supply to the system are actuated by an automatic detection system located in the same area as the sprinklers. The water supply valves can also be operated manually.

This type of system is primarily designed for extra-hazard occupancies where great quantities of water may have to be applied immediately over large areas. Deluge systems are ordinarily used to best advantage

where rapidly spreading or flash fires may be anticipated, such as in explosives plants, plants handling or processing nitrocellulose materials, lacquer plants, and buildings which contain large quantities of flammable materials.

Another application of a deluge system is an open system of outside sprinklers for distributing water over the roof, exterior of a building, or at windows, cornices, etc., to protect it against fire from adjoining property. This type is usually manually operated and is used where construction is inadequately protected by design or by distance from adjacent fire hazards.

In special applications, open sprinklers and closed sprinklers may be combined in a single system where deluge protection is not needed over the entire area. However, it must be remembered that separate automatic detectors are also required in the area covered by the closed sprinklers, that operation of a closed sprinkler will not activate the entire system, and that a fire in the area of the closed sprinkler will also cause water to discharge from all of the open sprinklers.

Automatic alarms, operated by the flow of water through the system, should be a part of every standard sprinkler installation. Such an alarm may be connected to a central-station fire alarm service or to the municipal fire department, or may be a local alarm signal. Its purpose is to give prompt notice that the sprinkler system is operating. It also