FIRE SPRINKLERS — GUIDE

Wet, dry and pre-action sprinkler systems

Understand what fills the pipes, how water enters them and which records to request before hiring a contractor.

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Identify the system from its records and valve arrangement. A sprinkler head alone may not tell you the system type. QRFS's dry system overview describes the differences below.

Wet systems

Wet pipe systems hold water in the sprinkler piping. Heat operates a sprinkler, and water discharges through that open sprinkler. For a building owner, the key questions are where the piping runs and how the design deals with cold spaces. Do not assume an unheated extension can use the same arrangement as the heated building.

Dry systems

Dry systems hold pressurized air or nitrogen in the sprinkler piping. That gas holds the dry valve closed. When a sprinkler opens, gas escapes. The pressure change allows the valve to open and water to enter the piping.

Dry does not mean every component is free of water. The valve and supply arrangement still need attention. QRFS describes dry systems as a choice for spaces exposed to freezing. It also identifies maintenance concerns that come with their added equipment.

Pre-action systems

Pre-action systems also normally have gas in the sprinkler piping. A separate detection arrangement controls an electrically operated valve. The release conditions depend on the arrangement. QRFS notes that detection alone, or combinations of detection and sprinkler operation, can control water admission.

Do not assume every pre-action system has the same sequence. Ask for the cause-and-effect record, the valve instructions and the last test report. Ask who services the detection and releasing equipment as well as the sprinkler piping.

Questions for a contractor

- What system type and valve arrangement do the records identify?
- Which spaces does each system protect?
- What inspection and test tasks belong to each arrangement?
- Which parts need access, drainage or coordination with alarm service?

- What defects remain open from the last report?

Give the contractor system drawings and photographs of accessible identification signs. Do not operate a valve to find out how the system works. Do not disable a detection circuit for a demonstration.

Use the system type explainer to learn terms, then have the contractor confirm them. It is an explainer, not a design selector. It cannot approve a change from dry to wet or decide whether pre-action protection is suitable for a room.

Sources

- QRFS, A Guide to Dry Sprinkler Systems, Part 1. Fetched 2026-11-10.
- QRFS, Dry Sprinkler System NFPA 25 Inspections: Daily, Weekly, Monthly. Fetched 2026-11-10.

For information only. Confirm the adopted code, local rules and system requirements with the authority having jurisdiction and a qualified contractor.

Frequently asked questions

Does dry mean there is no water supply?

No. The dry piping holds gas before operation, but a valve separates it from the water supply. Confirm the arrangement from the records.