



1. FM Global Property Loss Prevention Data Sheet 2-1 Corrosion in Automatic Sprinkler Systems

- <http://www.fmglobal.com/research-and-resources/fm-global-data-sheets>

- 2.2.1.10.1 Dry-Pipe and Preaction Systems Using Nitrogen
  - o A. Pressurize the system using an FM Approved nitrogen generator. Alternatively, nitrogen cylinders may be used, or another suitable supply if compressed air is provided as backup.
  - o B. Black steel pipe is acceptable in dry-pipe and preaction sprinkler systems if nitrogen will be used throughout the life of the system. If it will not, use galvanized steel pipe.

2. Department of Defense (DoD) Unified Facilities Criteria (UFC 3-600-01) November 2016 (pgs. 94-95)

- <https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-3-600-01>

- Section 9-7.6 Piping
  - o 9-7.6.1.1 Galvanized piping is ONLY permitted for deluge sprinkler systems, valve trim piping and drain piping exposed to the Facility exterior.
  - o 9-7.6.1.2 Black steel pipe must be used for the addition, repair or relocation of existing galvanized pipe in wet pipe, dry pipe or preaction systems.
- Section 9-7.7 Nitrogen Generation Systems.
  - o 9-7.7.1 Design the nitrogen generation system so all equipment is installed within the confines of the riser room with the exception of a connection for a manual gas analyzer.
  - o 9-7.7.2 Provide a nitrogen generation system that is capable of delivering a minimum of 98 percent nitrogen composition throughout all of the system piping within 14 days from the commencement of the inerting process.
  - o 9-7.7.3 The nitrogen generation system must be self-contained with "drop-in" operability with a simple one step direct connection of the nitrogen gas supply line to each zone.
  - o 9-7.7.4 The use of stand-alone compressed nitrogen bottle system is not permitted.
  - o 9-7.7.5 A process that involves continuous venting of the piping network is not permitted.
  - o 9-7.7.6 Any air maintenance device used in conjunction with the nitrogen generation system must be listed or approved for use on sprinkler systems.
- 9-7.8 Preaction Systems.
  - o 9-7.8.1 Preaction systems must utilize nitrogen complying with the "Nitrogen Generation Systems" section of this UFC, in lieu of air.
- 9-7.9 Dry Pipe Systems.
  - o 9-7.9.1 Dry pipe systems must utilize air or nitrogen. If nitrogen is used, the nitrogen generation system must comply with the requirements of this UFC.

Note: Coming this spring, dry pipe systems will no longer have the option to use air, nitrogen only.

3. General Services Administration (GSA) PBS-P100 Facilities Standards for the Public Buildings Service April 2017 (pgs. 230-232)

- [https://www.gsa.gov/cdnstatic/2017\\_Facilities\\_Standards\\_%28PBS-P100%29%20%20.pdf](https://www.gsa.gov/cdnstatic/2017_Facilities_Standards_%28PBS-P100%29%20%20.pdf)

- Section 7.8 Automatic Sprinkler and Standpipe Systems
  - o Dry-pipe sprinkler systems must incorporate a nitrogen inerting process that replaces air with nitrogen gas when used to charge, maintain, or supervise a dry-pipe sprinkler system.
  - o Antifreeze sprinkler systems are not permitted to be installed.
  - o Pre-action-type sprinkler systems are not permitted to be installed.
- Section 7.8.2 Sprinkler Piping
  - o Galvanized (internal and external) sprinkler piping is not permitted to be used for dry-pipe sprinkler systems.