

SHORT SPECIFICATION
WET-PIPE FIRE SPRINKLER SYSTEM AIR RELEASE DEVICE

Furnish and install automatic air release devices at the high points of the wet-pipe sprinkler system piping network(s). The devices shall be Model AR-1, manufactured by UNITED Fire Systems, Kenilworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device.

1. RELATED SPECIFICATIONS

- A. Wet-Pipe Fire Sprinkler System.
- B. Quality Control.
- C. Common Work Results for Fire Suppression.
- D. Schedules for Fire Suppression.
- E. Contract drawings
- F. General provisions of the contract, including General and Supplementary Conditions.

2. PERFORMANCE REQUIREMENTS

- A. The device shall be pre-assembled and fully factory tested.
- B. Design and performance of the device shall comply with NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2016 edition, sections 7.1.5 and 8.1.6 (2).
- C. Contractor shall furnish and install the air release devices(s) per this specification and all applicable contract drawings.
- D. Device shall be FM Approved per FM Approvals Class 1344, and shall be approved for at least 175 PSIG working pressure.
- E. System Operation. The device shall operate automatically in accordance with NFPA 13, 8.1.6 (2). Manual intervention to release air shall not be necessary.

3. SUBMITTALS

- A. Product Data. Include, as applicable, product rated capacities, operational characteristics, and materials and standards of construction.
- B. Shop Drawings. Show device installation locations and details.
- C. Closeout Submittals
 - 1. Location of devices on system as-built drawings.
 - 2. Operation and maintenance instructions.
- D. Operation and Maintenance Submittals: Instructions for STANDPIPE-PAC™.

4. AUTOMATIC AIR RELEASE DEVICE. Furnish and install automatic air release devices at the high points of the wet-pipe sprinkler system piping network(s). The devices shall be Model AR-1, manufactured by UNITED Fire Systems, Kenilworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device. The device shall have:

- A. A dielectric union at the device inlet, assembled to the device at the factory. The union shall be constructed to inhibit dielectric corrosion between the steel sprinkler pipe and the brass components of the air release device through the use of a polysulfone insulator and a Buna-N gasket.
- B. A brass ball valve for shutoff, ½ inch NPT full port, with RPTFE seats and packing.
- C. A bronze Y-strainer with 304SS 40 mesh strainer, removable for cleaning via an external plug. .
- D. A brass float valve, to automatically shut off the air release device when air is expelled and water reaches the float valve. All internal parts shall be non-ferrous. Seals and O-rings shall be Viton elastomer. The air release model number, manufacturer's name, and FM Approved symbol shall be permanently etched onto the exterior of the brass float valve body. The air outlet shall have 1/2 inch NPT male threads, for attachment of the optional fittings described below.
- E. An optional brass elbow and push-on tubing connection for attachment to the device outlet. 1/2 inch OD polyethylene tubing may be attached to the push-on fitting, allowing remote exhaust from the device outlet.

5. PIPE AND FITTINGS. Pipe and fittings for connection of air release device to sprinkler piping.
- A. Pipe - Schedule 40 Steel, per ASTM A53 / A53M - Specification for Pipe, Steel, Black, Welded and Seamless.
 - B. Nipples - Steel Pipe Nipples, Threaded End, per ASTM A733 - Specification for Welded and Seamless Carbon Steel Pipe Nipples.
 - C. Fittings - All fittings shall be black. Galvanized fittings shall not be used. Fittings per ANSI B16.3 - Malleable Iron Threaded Fittings, or ANSI B16.4 - Cast Iron Threaded Fittings.
 - D. Couplings - Per ASTM A865 - Specification for Threaded Couplings, Steel, Black, Welded or Seamless, for Use in Steel Pipe Joints.
 - E. Unions. Use unions only as necessary where joining pipe is impossible or impractical without them. Unions per ANSI B16.39 - Malleable Iron Threaded Pipe Unions.
 - F. Threads - Threaded ends per ANSI B2.1 - Basic Standards for Steel Pipe Threads, and ANSI B1.20.1 - Pipe Threads, General Purpose (Inch). All threads shall be NPT.

6. OPERATION

- A. The device outlet shall be open when air is venting from the device.
- B. The device outlet shall close when the air has been expelled and water closes the float valve.
- C. The device ball valve shall remain open for automatic operation of the device.
- D. The device ball valve may be manually closed for maintenance or repair of the device without the need to drain the wet-pipe sprinkler system piping.

7. STORAGE AND HANDLING. Deliver all material and equipment properly identified by type, size, manufacturer's name and specification section. All material to be undamaged. Do not store exposed to weather. Store indoors or cover to protect from damage. Protect all material and equipment to prevent damage and entrance of foreign matter. During loading, transporting, and unloading, handle all material and equipment with care to prevent damage. Do not drop. Store all material and equipment to the satisfaction of the Resident Engineer.

8. INSTALLATION

- A. Location and Arrangement. Contract drawings, plans, schematics, and diagrams indicate general location and arrangement of device(s). Shop drawings shall indicate actual device installation layout. Install device(s) per approved shop drawings.
- B. Deviations. Installation deviations from approved shop drawings require written approval from the Engineer. During installation, do not deviate from approved shop drawings without written approval from the Engineer.
- C. Pipe Ends. Ream ends of pipe to remove burrs. Bevel plain ends of pipe.
- D. Examination. Examine all pipe and fittings thoroughly before installation. Do not install damaged or defective pipe or fittings.
- E. Cleaning. Remove scale, slag, dirt, oil, cutting and threading shavings, and debris from inside and outside of pipe after fabrication and before assembly. Use a non-toxic solvent to ensure pipe is clean. Pipe shall be free of solvent and water when installed.