

1. GENERAL SPECIFICATION

- 1.1 A total flooding, clean agent, fire suppression system, filled with Argonite agent shall be installed to meet a minimum design concentration of ____ %, by volume in all designated spaces to be protected.

2. CODES/STANDARDS COMPLIANCE

- 2.1 The design, installation, testing and maintenance of the above stated Argonite fire suppression system shall be in accordance to the following codes, standards and regulatory bodies:

- A. NFPA 2001 – Standard for Clean Agent Fire Extinguishing Systems – 2004 edition.
- B. NFPA 12A – Halon 1301 Fire Extinguishing Systems
- C. UL 2166 – Standard for Halocarbon Clean Agent Extinguishing System Units
- D. Factory Mutual Approval Guide
- E. ANSI B1.20.1 – Standard for pipe threads, General Purpose, 1992
- F. Design and installation practices set forth by system manufacturer
- G. NFPA 70 - NEC – National Electrical Code
- H. NFPA 72 – National Fire Alarm Code
- I. Requirements of the Local Authorities Having Jurisdiction (AHJ)

- 2.2 The Fire suppression system must have the following listings and approvals:

- A. FM Approved – Factory Mutual Research Center
- B. ULC Listed – Underwriters Laboratories of Canada

- 2.3 The manufacturer shall meet ISO 9001 requirements for the design, production and distribution of the Argonite fire suppression systems.

3. SYSTEM DESCRIPTION

- 3.1 All Argonite fire suppression equipment and accessories must be manufactured by:

Kidde Fire Systems:

400 Main Street, Ashland, MA 01721

U.S.A.

phone: (508) 881-2000

URL: <http://www.kiddefiresystems.com>

- 3.2 The manufacturer shall warrant all Argonite fire suppression system products for 36 months from date of shipment or one (1) full year from the date of installation.
- 3.3 The system shall be supplied and installed by a factory-authorized, Kidde Fire Systems distributor. The distributor / Installer shall be trained by the manufacturer to calculate / design, install, test and maintain the Argonite fire suppression system and shall be able to produce a certificate stating such on request.
- 3.4 The systems design can be a Central storage or Modular design (in limited space areas).
- 3.5 The total flooding system shall consist of a Kidde Agent Storage Cylinder, Kidde actuation hardware and system distribution nozzles attached to a pipe network.

4. COMPONENTS

4.1 Argonite Cylinder and Valve Assembly

- A. Argonite shall be stored in a Kidde series Cylinder(s) P/N 38-100XXX-001. Operating pressure of the Argonite system shall be at 2900 psig @ 70°F.
- B. Argonite storage cylinders shall be provided with a safety rupture disc. An increase in internal pressure due to high temperature shall rupture the safety disc and allow the contents to vent before the rupture pressure of the container is reached. The contents shall not be vented through the discharge piping and nozzles. Argonite containers shall be equipped with a pressure gauge to indicate the internal pressures. The gauge shall be an integral part of the system equipment and shall be color-coded for fast referencing of pressure readings.
- C. A combination pressure gauge/supervisory low pressure switch shall be provided on all Argonite agent containers. A decrease in pressure will cause the normally open contacts to close, indicating a trouble condition at the monitoring panel.

4.2 Kidde Actuation hardware

- A. The primary/pilot Argonite cylinder valve assembly shall be actuated either electrically, by energizing the solenoid, or manually using the manual release. Both of these components are part of the primary/pilot completer kit.
- B. The Argonite slave cylinders are actuated via pressure from the primary/pilot cylinder. This pressure is routed to the slave cylinder via high pressure hoses that are part of the slave completer kit.

4.3 Distribution Nozzles

- A. Engineered discharge nozzles for use with the Argonite system will be made of Brass, Kidde P/N 38-30XXX2-XXX.
- B. Each nozzle shall be located in the space per the manufacturers' guidelines, Nozzles will have a 360-degree discharge pattern.
- C. Nozzles shall be available in sizes ranging from 1/2" NPT to 1-1/2" NPT.

4.4 Pipe Network

- A. Distribution piping and fittings shall be installed in accordance with NFPA 2001, approved piping standards and system manufacturer's requirements.

5. SUBMITTALS

5.1 Engineered Design Drawings

- A. The factory-authorized Kidde Fire Systems Distributor shall provide all required installation drawings per NFPA 2001.

5.2 Flow Calculation Reports

- A. The contractor shall provide the following information in the flow calculation report.
 - 1. Customer Information and Project Data
 - 2. Enclosure Information – at a minimum, enclosure information is to include Minimum and adjusted design concentrations, Minimum enclosure temperatures, minimum agent required, volume of enclosures and agent discharged.
 - 3. Agent information – at a minimum, agent information is to include Cylinder size and part number, quantity of cylinders, main and/or reserve cylinders and pipe take off direction.
 - 4. Pipe network information – at a minimum, pipe network information is to include pipe type, pipe diameter, pipe length and change in direction or elevation. In addition, the following nozzle information shall be provided; number of nozzles and identification of enclosure location, flow rate of associated nozzle, nozzle nominal size, nozzle type and nozzle orifice area.
 - 5. Detailed list of all Pipes and Pipe Fittings designed in the pipe network

5.3 Commissioning Equipment List

- A. The contractor shall provide a commissioning equipment list for each installed Argonite suppression system. The equipment list shall identify all installed equipment and configurations.

5.4 Test Plan

- A. The contractor/installer shall submit a test plan which describes how the system equipment and room integrity shall be tested. This shall include a step-by-step description of all tests and shall indicate type and location of test apparatus to be used. At a minimum, the tests to be conducted shall be per NFPA 2001 and any additional supplemental tests required by the AHJ. Tests shall not be scheduled or conducted until the engineer of record approves the test plan.

5.5 Installation Drawings

- A. Four (4) sets of installation drawings for each installed Argonite suppression system and One (1) set of the calculation report, owners manual and product data sheet(s) shall be submitted to the end-user/owner.
- B. Upon completion of installation and commissioning acceptance, two (2) sets of "As-Built" installation drawings and One (1) set of the calculation report for each installed Argonite suppression system shall be given to the owner/end-user for use and reference.

5.6 Operation and Maintenance Manuals

- A. Two (2) copies of the Argonite engineered fire suppression system; Design, Installation and Maintenance Manual shall be submitted after complete installation.

6. SYSTEM INSTALLATION AND COMMISSIONING**6.1 Fire Suppression System Equipment employing Argonite.**

- A. The contractor shall install the system in accordance with the manufacturer's installation, operation and maintenance manual.

6.2 Training Requirements

- A. The contractor shall be certified and trained by the manufacturer on installation, design and maintenance of the Kidde Argonite fire suppression systems.

6.3 Routine Maintenance

- A. Routine maintenance shall be performed as recommended by the manufacturer's design, installation and maintenance manual. At a minimum the routine maintenance will include the following:
1. Visual Check of Pipe network and distribution nozzles per the design, installation and maintenance manual.
 2. Weight and pressure of the Argonite cylinder per the design, installation and maintenance manual.
 3. Inspect all cylinders and equipment for damage per the design, installation and maintenance manual.