

2.03 Submittal Requirements for Clean Agent Fire Suppression Systems (2022)

Reference: 2022 CBC ; 2018 NFPA 2001

Purpose: This bulletin describes the information to be provided on plans submitted for a building permit to install or modify a clean agent system.

Submittal Requirements:

Working plans shall be drawn to an indicated scale (1/8" = 1' minimum) on sheets of uniform size (11" x 17" minimum). Two sets of plans are needed with the designer professional stamp and wet signature on each page. **All fonts throughout the plans shall not be smaller than 1/8" in size**

The following items must be included in the plans:

I. GENERAL

- Names of owner and occupant;
- Address of building, including assessor's block and lot number;
- Designers qualifications;
- Point of compass and symbol list;
- Description of occupancies and hazards being protected, designate whether or not the enclosure is normally occupied;
- Description of exposures surrounding the enclosure;
- Location and construction of protected enclosure walls, indicating fire rated walls; FSD; HVAC
- Enclosure cross section, full height or schematic diagram, including location and construction of building floor/ceiling assemblies above and below raised access floor and suspended ceiling;
- Plan view of protected area showing enclosure partitions (full and partial height), agent distribution system, pipe hangers, fire alarm system, controlled devices (e.g., S/F dampers), and instructional signs;

II. SUPPRESSION

- Type of clean agent being used, including manufacturer's specifications, and design standards used (2018 NFPA 2001, etc.);
- Description and specifications of the agent storage containers used including internal volume, storage pressure and nominal capacity expressed in units of agent mass, or volume at standard conditions of temperature and pressure; include calculations which determine enclosure volume, size of tank and quantity of agent;
- Description and specifications of nozzles used including size, orifice port configuration and equivalent orifice area;
- Description of pipe and fittings used including material specifications, grade and pressure rating;

- Show pipe length calculations; indicate actual, maximum and minimum lengths of pipe and equivalent lengths; show the actual and maximum vertical rise; show branch line limitations; include isometric view of agent distribution with node reference numbers;
- Detail the bracing for both the storage tank and the rigid piping, showing how each is secured to the building.
- Provide a detail of the pipe supports/hangers and their locations;

III. FIRE ALARM

- Equipment list showing quantity, make, model, and CSFM listing sheet of each fire alarm device;
- Detector mounting methods;
- Type and size of wire, cable and conduit (include conduit fill ratio); show class and/or style designation of circuits; Detail the required method of wire termination;
- Scale drawing showing the layout of the annunciator panel;
- Point-to-point wiring diagram showing connections from all circuits to the control panel, annunciator and external or add-on relays;
- Voltage drop and backup battery calculations;
- Sequence-of-operation description or matrix including functioning of abort and maintenance switches, delay timers and emergency power shutdown.
- The clean agent “Releasing Panel” shall be OUTSIDE of the hazard area being protected unless approved in an alternate location by the Fire Department.
- Install a smoke detector above the releasing panel.
- The audible alarm generated when the clean agent system discharges shall not interfere with the building’s fire alarm.