



FIRE SAFETY CONSULTANTS, INC.

SMOKE CONTROL SYSTEM INCLUDING STAIRWELL PRESSURIZATION SYSTEM SUBMITTALS

The following is a list of items that need to be included with your submittal to FSCI for review. Refer to IFC, Section 909 (or NFPA 1 where applicable) and NFPA 92 for a complete submittal list.

Submit the number of plans as required by the specific municipality showing the job name and complete address; and shall include the seal of the licensed design professional in charge.

Plans must include all necessary, related architectural, electrical, mechanical, fire alarm, etc. drawings and specifications.

Plans must be to scale or fully dimensioned to determine building area and height; and clearly show work to be done.

Description of building use or occupancy for all areas of the building.

Proposed type of construction including testing/listing agency details for all fire rated construction.

Provide a design brief that contains a statement of the goals and objectives of the smoke management system. Provide the design assumptions to be used in the conceptual design. The design brief should include at least the following:

1. System performance goals, design objectives, and design approach
2. Performance criteria (including design tenability criteria where applicable)
3. Building characteristics (height, area, layout, use, ambient conditions, and other fire protection systems)
4. Design basis fire(s) - minimum heat release rate is 5,000 btu unless full justification for a lower heat release rate is provided
5. Design fire location(s)
6. Identified design constraints
7. Proposed design approach

8. Egress analysis, if performed
9. Tenability analysis, if performed

The design brief should be developed in the first stage of the design process to assure that all parties understand the goals, objectives, design fire, and design approach so that the conceptual design can be developed and agreed upon. Interested parties should include the building owner, building/fire code official, and the design team.

Provide a conceptual design report providing details based upon the design brief and which documents the design calculations.

The conceptual design should include the following design elements and the technical basis:

1. Height, cross-section, and plan area of the volume to be protected
2. Smoke management method (active, passive, pressurization, airflow, exhaust) and design interval time (if applicable)
3. Detection method, detector characteristics, spacing, and smoke control system actuation means (and supporting detection and smoke-filling calculations) including fire alarm control unit approval for smoke control listed per UL UUKL
4. Smoke exhaust locations and sizes, exhaust flow rates (and supporting calculations for layer interface location and avoidance of plug holing)
5. Inlet vent area(s), location(s), and operation method to include supporting calculations for inlet flow rate and flow velocity as well as minimum and maximum pressure differentials
6. Equipment and control specifications, description and operation including fans, dampers, etc. which are listed and rated for smoke control systems
7. Egress analysis, if performed
8. Fire size and expected fuel packages
9. If the building is protected with an automatic sprinkler system
10. Duration of operation

Provide an operations and maintenance manual. The manual shall include the following:

1. Procedures used in the initial commissioning of the system as well as the measured performance of the system at the time of commissioning
2. Testing and inspection requirements for the system and system components and the required frequency of testing
3. Critical assumptions used in the design, and the limitations on the building and its use

Provide a detailed special inspections and tests report required for the smoke control system to include a step by step testing procedure as outlined in NFPA 92B.

For stair pressurization calculations, include the leakage rate assumptions and justification. Specify the number of doors assumed to be open and justification to support that assumption.

If you have any questions regarding the submittal process for a specific municipality, please feel free to contact our office at info@firesafetyfsci.com and we will be happy to help.