



## **FIRE & LIFE SAFETY SUMMARIES**

A Fire & Life Safety Summary Binder (FLSS binder) is required per OSSC 107.1 for buildings with complex fire and life safety systems when the life safety or fire plans examiner determines it is necessary to clarify how the building will conform to building codes. Examples of buildings where Fire & Life Safety Summaries are required include, among others: hospitals, malls, large assembly buildings, high-rise buildings, and buildings with smoke control systems.

The purpose of the FLSS binder is to provide a clear and understandable explanation of the fire and life safety systems in a building, using floor plans, diagrams, and simple non-technical language. It is a record of the completed building and collection of any special conditions required at the time of permitting. It will be a valuable reference for those involved in the ongoing maintenance and future alterations of the building, including the building owner, facilities manager, fire inspector, and future architects, contractors, plan reviewers and building inspectors.

A draft version is to be submitted electronically and reviewed with the Building Permit. The final version of the FLSS will include updated drawings with any changes that occurred during the time of construction and the smoke control testing report and commissioning. The approved final version of the FLSS is to be produced in 8-1/2x11 booklet format (e.g., 3-ring binder, etc.) and kept in the fire command center (per OSSC 911.1.6). The deferred submittal of the final version must be reviewed, approved, and issued before occupancy of the building.

These are the elements of the FLSS. Each element is further outlined below.

- I. Narrative
- II. Code Analysis Plans
- III. Fire Evacuation Plan (2021 PFC 404.2.1)
- IV. Fire Safety Plan (2021 PFC 404.2.2)
- V. Approved Appeals
- VI. Smoke Control: The purpose is to identify the smoke control systems, sequencing, and design. When the final version of the FLSS binder is submitted prior to occupancy, it must include the complete report of testing by the special inspector, with this report sealed, signed and dated by the responsible registered design professional.
  - a. Rational Analysis (2019 OSSC 909.4)
  - b. Special Inspections for Smoke Control – Final Report (2019 OSSC 909.3, 909.18.8.3, 1705.18)
  - c. Smoke Control Written Maintenance Program (2021 PFC 909.18.9 / OSSC 909.18.9)
  - d. Mechanical documents referenced in the RA or Smoke Control Final Report
- VII. Building Information Card (BIC) (2021 PFC 508.1.6 #13 / 2019 OSSC 911.1.6 #13)

## I. NARRATIVE

Describe the construction and systems listed below using clear, understandable, non-technical narrative text. A numbering system or outline format is helpful to facilitate correspondence:

### A. Team Directory

- Owner
- Architect
- Engineers
- Consultants
- Contractor

### B. Building Summary

- Site location
- Uses
- Occupancy classifications
- Height
- Number of stories
- Structural system
- Type of construction
- Floor areas and total building area
- Number of dwelling units
- Other

### C. Hourly Fire-Resistive Construction Requirements

- Structural frame
- Bearing walls
- Floors
- Roofs
- Exterior non-bearing walls
- Exterior openings

### D. Hourly Fire-Resistive Separation Requirements

- Corridors
- Occupancy separations (or indicate nonseparated uses)
- Stair enclosures
- Shafts
- Elevator lobbies
- Horizontal exits
- Other

### E. Exit Systems (mostly identified in plans - see item II)

- Occupant load per story
- Number of exits required
- Egress width required and provide at each exit from the story

### F. Emergency Power and Standby Power Systems

- Generator size and location
- Type of fuel
- Size and location of fuel tank
- Method and location of fuel refilling
- Time duration capacity
- Time to transfer power
- List of systems connected to the emergency power supply
- Systems testing methods and testing criteria

### G. Mechanical (HVAC) Systems

- Overall building HVAC system summary
- System Control Diagrams and sequence of operations
- Smoke control systems
  - Smokeproof exit enclosure pressurization
  - Elevator pressurization
- Building smoke removal method
- Parking garage exhaust and smoke removal

### H. Fire Command Center

- Fire Command Center required features as listed in OSSC 911.1.6

**I. Automatic Sprinkler System**

- Locations and types of sprinklers
- Standpipe types and locations
- Fire department connection
- Fire pump location and sizing
- Secondary water supply location and sizing
- Sprinkler systems testing methods and testing criteria

**J. Fire Alarm System**

- Audible and visual notification device locations
- Emergency Voice/alarm communications
- Manual pull station locations
- Smoke detector types and locations
- Smoke alarm types and locations
- Alarm system testing methods and testing criteria

**K. For existing buildings entering into a Phased Life Safety Improvement Agreement between the building owner and the city:**

- A schedule of implementation of fire and life safety improvements with dates and the corresponding improvements
- A statement by the architect disclaiming responsibility for implementation of future phases of the improvements

**II. PLANS**

Site Plan and Floor Plans of each unique floor that are legible, black, and white, drawn to a recognizable scale, and contain the information listed below. 11x17 fold-out sheets bound into the booklet are preferred. Larger plans may be folded and inserted into a pocket of the booklet for buildings with footprints too large to be legible on 11x17 sheets:

**A. Physical Elements**

- Walls and columns
- Changes of elevation, projections, and balconies, etc.
- Windows and doors with door swings
- Stairs and ramps
- Exit door locks, latches, and electric locks
- Automatic-closing doors and doors with hold-open devices
- Smokeproof enclosures
- Other

**B. Words and Symbols**

- North arrow and drawing scale
- Use of each space
- Where a room or space may be large enough to require additional exits:
  - Floor area in square feet
  - Floor area per occupant (occupant load factor)
  - Total number of occupants
  - Number of exits required
  - Exit width required and provided at each exit
- Illuminated exit signs
- Identify areas provided with egress lighting on emergency power

- Exit discharge and path to a public right-of-way. Label Exit Courts if applicable.
- Where distances may be great enough to require additional exits:
  - Common path of egress travel length
  - Travel distance length
  - Exit separation length
- Fire command center location and size
- Emergency power generator, emergency generator fuel tank and fueling locations
- Secondary water supply and fire pump locations
- Fire-rated walls indicated by a unique line-type or poche symbol and a corresponding legend identifying the meaning of each symbol. Note that the requirements for a 1-hour wall separating dwelling units has different requirements from a 1-hour wall at an occupancy separation, so one symbol for a "1-hour wall" is not sufficient. In this case, two symbols would be necessary: "1-hour fire partition" and "1-hour fire barrier". Poche graphics should be on one side of the wall, rather than directly on top of it, so openings in walls remain visible:
  - Corridors
  - Occupancy separations
  - Area fire walls
  - Exit enclosures
  - Shafts
  - Horizontal exits
  - Other

C. A Building Section, in addition to the Floor Plans, may be necessary to show complicated fire separations such as in atriums, multi-level assembly spaces, fire walls, etc.

D. A separate Occupancy Safety During Construction Plan may be required for alterations to existing buildings that will remain occupied during construction

### **III. FIRE EVACUATION PLAN**

The Fire Evacuation Plan is a standalone document that defines roles for evacuation and relocation of occupants during an emergency. Although a current copy should be placed in the FLSS binder, each tenant should also have a copy. The fire evacuation plan is important for both emergency responders and building or facility occupants. It focuses the occupants' activities on facilitating a smoother evacuation or relocation process and provides the fire department with critical information on the building and the location of the occupants. See 2021 Portland Fire Code Section 404 2.1 for specific requirements. This document may be deferred to TI permits if the main building permit is for an unoccupied building shell only. The building owner and users of the building need to create a plan that works for their specific businesses and occupancies.

### **IV. FIRE SAFETY PLAN**

The requirements of the Fire Safety Plan provide the building owner and occupants a better understanding of how to react in an emergency and how to decrease the likelihood of an emergency occurring. It includes some of the same information about evacuation from the Fire Evacuation Plan but expands to identify emergency systems maintenance. Additionally, this report assists emergency responders during periodic inspections and evaluations of the plans and, more importantly, when responding to an emergency. See 2021 Portland Fire Code Section 404 2.2 for specific requirements.

## **V. APPEALS**

- A. List each Appeal that has been granted by Appeal date, Appeal ID number, Appeal Item number, and a one- or two-sentence description with the code requirement and the alternative proposed, including any conditions in the appeal decision. For example:

### Index of Appeals

10/13/21 ID# 26215

Item #1: Determination of 40 p.s.f. live load for dry boat storage: Granted provided...

- B. Include a copy of each granted appeal following the Index of Appeals.

## **VI. SMOKE CONTROL**

Identify the smoke control systems, sequencing, design, and maintenance.

a. **Rational Analysis**

A copy of the Rational Analysis (RA) that was approved during plan review of the building permit (2019 OSSC 909.4) should be included in the FLSS binder. The RA is an overview of the factors that could alter the effectiveness of a smoke control system, including stack effect, temperature effect of fire, wind effect, heating, ventilating and air-conditioning (HVAC) system interaction and climate, as well as the placement, quantity of inlets/outlets and velocity of supply and exhaust air.

b. **Special Inspections for Smoke Control – Final Report**

The smoke control system must be tested by a special inspector (2019 OSSC 1705.18). Once the testing by the special inspector is complete, documentation of the activity is required (2019 OSSC 909.18.8.3). This documentation is to be prepared in the form of a report that identifies all devices by manufacturer, nameplate data, design values, measured values and identification or mark. When the final version of the FLSS binder is submitted prior to occupancy, it must include the complete report of testing by the special inspector, with this report sealed, signed, and dated by the responsible registered design professional. Adding a copy of this report to the FLSS binder satisfies the requirement in 2019 OSSC 909.18.8.3.1.

c. **Smoke Control Written Maintenance Program** (2021 PFC 909.18.9 / OSSC 909.18.9)

The long-term success of the smoke control system depends heavily on proper maintenance in addition to rigorous acceptance testing. The maintenance program, sealed by the engineer of record, includes charts, drawings and other related documentation that assists in the identification of each aspect of the smoke control system. Although a record copy must be provided at the time of the building's occupancy, this portion of the FLSS binder is intended to be a living document, regularly updated with current information. This documentation is where information, such as the last time a device or component was successfully tested and by whom, is recorded. This will serve as the main documentation for the system.

d. **Mechanical documents referenced in the RA or Smoke Control Final Report documents**

Mechanical diagrams or drawings should be included in the FLSS binder if referenced in the RA or Smoke Control Final Report. This may include air flow diagrams or floor plan(s) as needed to locate and identify major mechanical equipment and any special circumstances (atriums, smoke compartments, etc.).

## **VII. BUILDING INFORMATION CARD (BIC)**

The BIC is divided into multiple information areas and should be formatted as a 11x17" laminated card printed on 2 sides to provide a quick, concise source of information about the building. 2021 PFC 508.1.6 #13 / 2019 OSSC 911.1.6 #13 provides a list of the information required. It is intended to provide an easily understood and consistent tool to emergency responders who are taking control of systems in high-rise and smoke-protected assembly buildings.