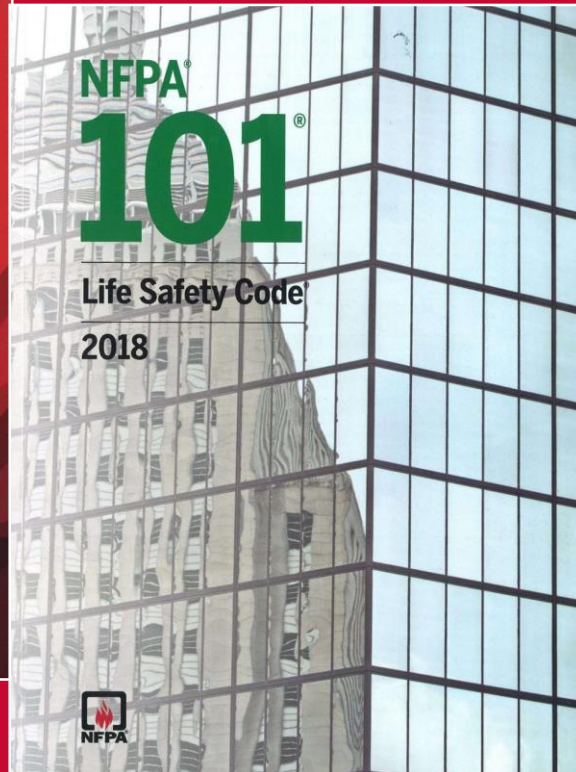
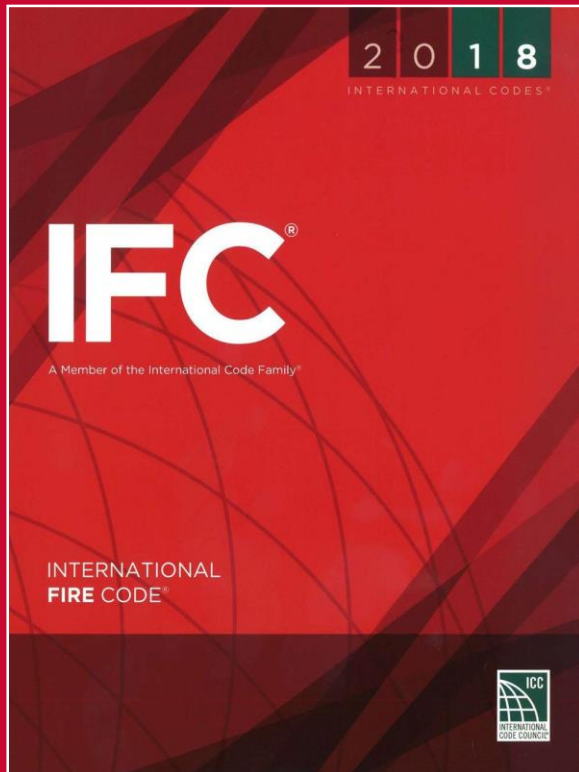


Fire Code Requirements for Fire Resistance



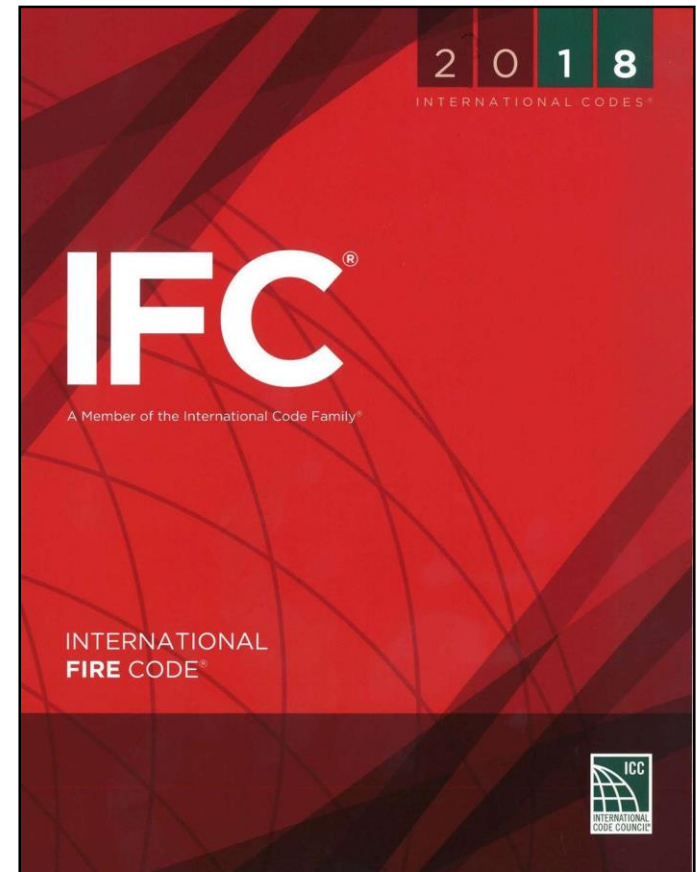
Rich Walke
UL Codes and Regulatory Services

Maintenance Requirements of the Codes



Fire-Resistance-Rated Construction

International Fire
Code Requirements
for Maintenance of
Fire-Resistance-
Rated Construction



IFC Requirements

- **701.1 Scope.** The provisions of this chapter shall govern the inspection and maintenance of the materials, systems and assemblies used for structural *fire resistance*, *fire-resistance-rated* construction separation of adjacent spaces and construction installed to resist the passage of smoke to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. New buildings shall comply with the IBC.

IFC Requirements Cont.

- **701.2 Fire-resistance-rated construction.**
The *fire-resistance rating* of the following *fire-resistance-rated* construction shall be maintained:
 1. Structural members.
 2. *Exterior walls.*
 3. *Fire walls, fire barriers, fire partitions.*
 4. *Horizontal assemblies.*
 5. Shaft enclosures.

IFC Requirements Cont.

- **701.3 Smoke barriers.** The *fire-resistance rating* and smoke-resistant characteristics of smoke barriers shall be maintained.
- **701.4 Smoke partitions.** The smoke-resistant characteristics of smoke partitions shall be maintained.

IFC Requirements Cont.

- **701.6 Owner's responsibility.** The **owner shall maintain an inventory** of all required fire-resistance-rated construction, construction installed to resist the passage of smoke and the construction included in Sections 703 through 707.

IFC Requirements Cont.

- **701.6 Owner's responsibility Cont.** Such construction shall be visually inspected by the *owner* annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained.

IFC Requirements Cont.

- **701.6 Owner's responsibility Cont.** Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space.

IFC Requirements Cont.

- **701.7 Unsafe Conditions.** Where **any** components in this chapter are not maintained and do not function as intended or do not have the *fire resistance* or the resistance to the passage of smoke required by the code under which building was constructed, remodeled or altered, **such component(s) or portions thereof shall be deemed an unsafe condition in accordance with Section 111.1.1.**

IFC Requirements Cont.

- **701.7 Unsafe Conditions Cont.** Components or portions thereof determined to be unsafe shall be repaired or replaced to conform to the code under which building was constructed, remodeled or altered, as deemed appropriate by the *fire code official*.

IFC Requirements Cont.

- **701.7 Unsafe Conditions Cont.** Where the condition of components is such that any building, structure or portion thereof presents an imminent danger to the occupants of the building, structure or portion thereof, the *fire code official* shall act in accordance with Section 111.2.

Fire-Resistance-Rated Construction

NFPA 1 Fire Code
Requirements for
Maintenance of
Fire-Resistance-
Rated Construction



NFPA 1 Fire Code Requirements

- **10.2.1** The owner, operator or occupant shall be responsible for compliance with this code.
- **10.2.3** The AHJ shall be permitted to require the owner, operator, or occupant to provide tests or test reports, without expense to the AHJ, **as proof of compliance with the intent of this code.**



NFPA 1 Fire Code Requirements Cont.

- **10.2.4** The owner, operator, or occupant of a building that is deemed unsafe shall abate, through corrective action approved by the AHJ the condition causing the building to be unsafe either by repair, rehabilitation, demolition, or other corrective action approved by the AHJ.

NFPA 1 Fire Code Requirements Cont.

- **12.3.3.1** Required fire-resistive construction, ... shall be maintained and shall be properly repaired, restored or replaced where damaged, altered, breached, penetrated, removed or improperly installed.

NFPA 1 Fire Code Requirements Cont.

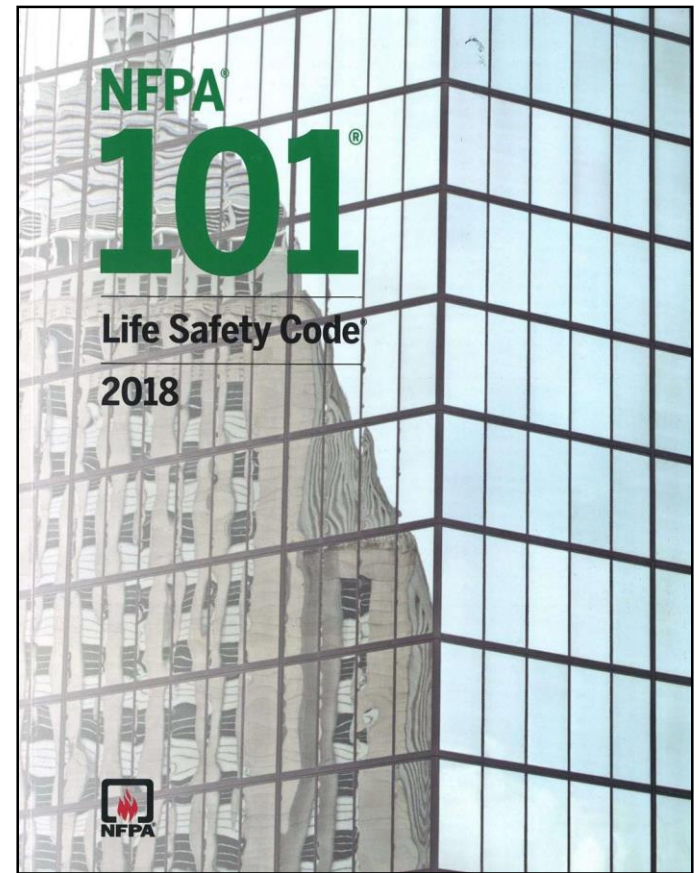
- **12.3.3.3** Where readily accessible, required fire-resistance-rated assemblies in high-rise buildings shall be visually inspected for integrity at least once every 3 years.
- **12.3.3.3.1** The person responsible for conducting visual inspections shall demonstrate appropriate technical knowledge and experience in fire-resistance-rated design and construction acceptable to the AHJ.

NFPA 1 Fire Code Requirements Cont.

- **12.3.3.3.2** A written report prepared by the person responsible for conducting the visual inspection shall be submitted to the AHJ documenting the results of the visual inspections.

Fire-Resistance-Rated Construction

NFPA 101 Life
Safety Code
Requirements for
Maintenance of
Fire-Resistance-
Rated Construction



NFPA 101 Life Safety Code Requirements

- **4.6.12 Maintenance, Inspection, and Testing.**
 - 4.6.12.1** Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained... in accordance with *applicable NFPA requirements*



NFPA 101 Life Safety Code Requirements Cont.

- **4.6.12.2** No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction.
- **4.6.12.3*** Existing life safety features obvious to the public, if not required by the Code, shall be either maintained or removed.

NFPA 101 Life Safety Code Requirements Cont.

- **4.6.12.4** Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this Code or as directed by the AHJ.

NFPA 101 Life Safety Code Requirements Cont.

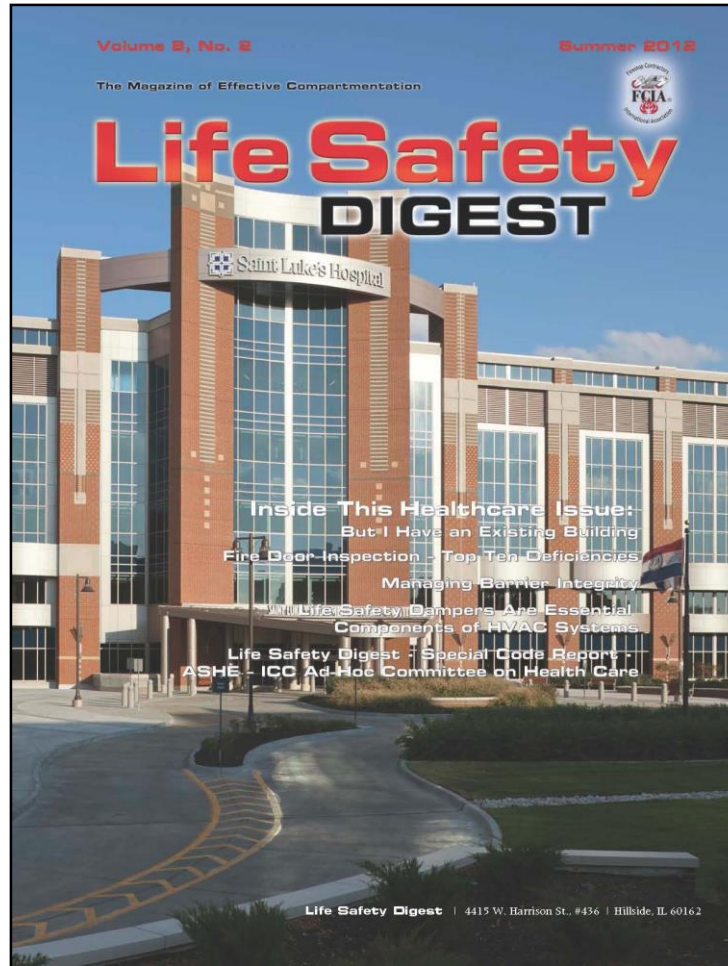
- **4.6.12.5** Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ.

Fire Code Maintenance Requirements

What's this
mean to me?



Barrier Management Systems Start when Construction Ends



Barrier Management Systems

Start when Construction Ends Cont.

- 01 78 00 References Closeout Submittals
 - 01 78 13 Completion and Correction List
 - 01 78 19 Maintenance Contracts
 - 01 78 23 Operation and Maintenance Data
 - 01 78 23.13 Operation Data
 - 01 78 23.16 Maintenance Data
 - 01 78 23.19 Preventative Maintenance Instructions

Barrier Management Systems

Start when Construction Ends Cont.

- 01 78 00 References Closeout Submittals
 - 01 78 29 Final Site Survey
 - 01 78 33 Bonds
 - 01 78 36 Warranties
 - 01 78 39 Project Record Documents
 - 01 78 43 Spare Parts
 - 01 78 46 Extra Stock Materials
 - 01 78 53 Sustainable Design Closeout Documentation

Built Right = Maintained Right

It All Starts with SPECS

- Why Specifications Division 01 78 00?
 - **Fire Resistance Inventory STARTS HERE**
 - Structural Elements
 - Fire Rated Walls & Floors
 - Firestop Systems
 - Fire-Resistant Joint Systems
 - Fire Rated Doors
 - Fire Rated Glazing
 - Fire, Smoke, Combination, Ceiling Radiation & Corridor Dampers

What's the Fire Resistance Inventory Look Like?

- Life Safety Drawings
- Designs, Systems and Assemblies
- Manufacturers Installation and Maintenance Instructions
- Paper & Files
- Spreadsheets
- Software

What's this Mean to Me?

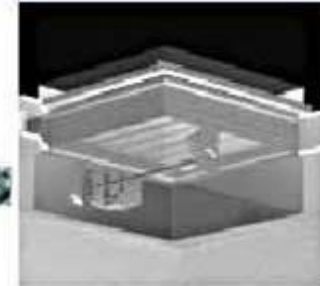
- To facilitate the Barrier Management System, the building owner will need to know what material and UL design was utilized for the protection of each building element. Who provides this information?
 - Architect?
 - General Contractor?
 - Fireproofing Contractor?
 - Any of the above?



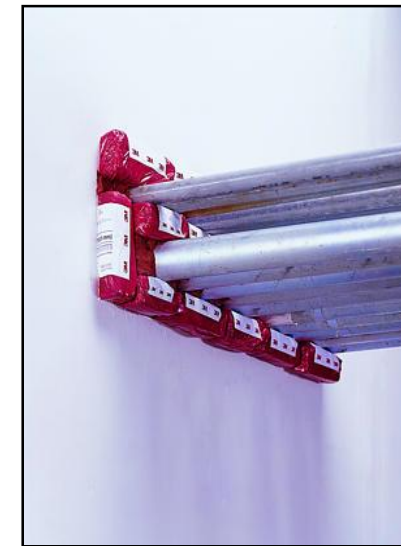
Barrier Management System Repairs

- Assemblies shall be repaired or replaced to conform with the requirements of the code under which the building was constructed, remodeled or altered
 - If based on a design, repair based on that designs
 - If based on materials, repair based on original materials

Effective Compartmentation is a SYSTEM



New UL test standards for Life Safety Dampers will take effect in July 2002



Barrier Management System = Tool



Questions / Comments



Thank You for Attending!!!

Rich Walke

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