FCIA Educational Seminar @ QATAR

Maintenance of Firestop Systems
If a building has sprinklers, is compartmentation still needed?

YES!
PASSIVE & ACTIVE MEASURES HAVE DIFFERENT FUNCTIONS, THEY COMPLEMENT EACH-OTHER
Fire Protection

Detection

Control/Suppression

Containment

www.hilti-me.com
Active Protection Measures shall be Tested and Maintained frequently

also

Passive Protection Measures shall be inspected and Maintained frequently
Passive Protection Measures shall also be inspected and Maintained frequently

Why:

During the usage of buildings, Installed Firestoppers can be altered or damaged due to:

- Mechanical or Electrical commissioning defects may be still there
- Wrong or inappropriate usage of different services
- Maintenance of different services in the buildings (repairs, pulling cables,…)
- Shocks can occur at anytime to pipes, busways, ducts,…
- ………..etc….

→ Damage of installed firestop systems, can happen at any time & due to different reasons..
Firestop damaged due to pulling new cables in the electrical room
Firestop damaged around plumbing due to excess water leakage
Firestop damaged around plumbing due to excess water leakage
The Codes Approach
National Fire Protection Association - NFPA 101

- SECTION 4.5.8 Maintenance, Inspection, and Testing.
- 4.5.8.1 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 or requirements developed as part of a performance-based design, or as directed by the AHJ.

[101:4.6.12.1]
• 4.5.8.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [101:4.6.12.2]

• 4.5.8.3* Existing life safety features obvious to the public, if not required by the Code, shall be either maintained or removed. [101:4.6.12.3]

• 4.5.8.4 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. [101:4.6.12.4]

• 4.5.8.5 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. [101:4.6.12.5]
SECTION 703 FIRE-RESISTANCE-RATED CONSTRUCTION

703.1 Maintenance. The required fire resistance rating of fire-resistance rated construction (including walls, fire stops, shaft enclosures, partitions, smoke barriers, floors, fire resistive coatings and sprayed fire resistant materials applied to structural members and fire resistive joint systems) shall be maintained. Such elements shall be visually inspected by the owner annually and properly repaired, restored or replaced when damaged, altered, breached or penetrated.

Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings, and holes made for any reason shall be protected with approved methods capable of resisting the passage of smoke and fire.
Focus Points:

- Firestop Maintenance is as much as important as Firestop installation. (ref. all codes)
- No existing life safety feature shall be removed or reduced
- Installed Firestops can be altered or damaged at any time during the life cycle of a building & due to different reasons
- Installed Firestop systems, shall be properly inspected & maintained annually
- Inspection shall be seriously considered & handled by the building owner
- Any new openings found, shall be protected with the appropriate Firestop system
- Old buildings, without Firestopping, need to be strongly considered
Example of Good Firestop Applications:
Example of Good Firestop Applications:
Tips For Successful Survey

1. Ask for The Fire plan of the building that shows the fire zones

2. Ask to walk with someone who knows the building

3. Check electrical / mechanical rooms

4. Check openings above fall ceiling in the corridors (Through Penetrations & Joints)

5. Check Perimeter Fire Barriers

6. Look for & around rated doors

7. Report / discuss the problems you saw

8. Refer to ASTM E 2174 & ASTM E 2393 for guidance
When Surveying

The way you think it is

The way you might find it
Hint

To Facilitate the inspection

• All systems should be labeled
• Labels should include the Listing Number or the EJ Number
What About Existing Old Buildings

OR

Firestop Technologies, Inc. FCIA Photo
9 Steps To Follow

- Conduct premises' Survey (if Fire plan is not available)
- Identify the level of PFP required based on building type (Code)
- Coordinate (Owner, Facility Manager & Tenants)
- Design
- Install
- Label
- Inspect
- Hand Over
- Maintain
Case Study Qatar

Assume that:

- Firestop regulations started being properly enforced in Qatar since early 2005’s.

- All Firestop systems installed in the buildings since 2005 till to date are properly & accurately installed.
Completed Residential Buildings By Type And Municipality
2004

Table No (6)

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<th>عصري</th>
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Ref. The Planning Council – Statistics Department – Qatar 2013
Case Study Qatar

Best Case Scenario

→ A minimum of 5,600 buildings still need firestopping

→ How Many Lives are still in Danger…?
Question...???