Remediation Interpretation Bulletin – Fire-resistive Joint Systems (4.7)

Scope
This interpretation expands the application of section 4.7 in the Alliance Fire Safety and Structural Integrity Standard (version 1.1) to control and expansion joints in factories inspected by the Alliance for Bangladesh Worker Safety, its staff, and designated Qualified Assessment Firms and their employees.

Purpose
This interpretation addresses requirements for the protection of control and expansion joints to prevent the spread of fire between floors or compartments that require separation by fire resistance rated construction.

Alliance Requirements
The fire resistance ratings of structural elements, building components or assemblies shall be determined in accordance with the test procedures outlined in ASTM E 119 or UL 263. (Section 4.3)

Penetrations of fire resistive rated assemblies shall be protected with a listed through-penetration firestop system tested in accordance with ASTM E814. (Section 4.7)

Background
Control and expansion joints are provided between structural elements, typically slabs or walls, to prevent damage caused by differential movement where elements meet.

Discussion
Ensuring the structural integrity of a building under fire conditions and the safe escape of building occupants requires the separation or compartmentation of building areas. Occasionally, fire resistance rated assemblies provided for this purpose require structural protection to prevent damage from differential movement where elements meet.

Left unprotected, the void space created to facilitate independent movement of these elements may also permit the free passage of smoke or heated gases from one part of a building to another. In many cases, these avenues of fire spread are concealed by other construction features, which renders the occupants particularly vulnerable to undetected fire spread.

Examples of such circumstances include the points where adjacent floor slabs meet at a column line, the space between a curtain wall and a floor slab, and certain vertical joints between adjacent wall assemblies. (In most cases, these joints will be formed where perpendicular or in-line walls meet at a structural boundary such as a column line. It does not include the space between parallel wall assemblies such as fire walls separated by a small gap where the resulting void space does not provide an avenue of fire spread to another space.)

Recognition of the hazards posed by undetected and unrestricted fire spread in structural voids created by control and expansion joints has been addressed by the created of fire resistive joint systems tested in accordance with ASTM E814 (UL 1479). These systems maintain the structural independence of the structural components while providing a flexible fire resistant seal at the joint.
Instructions
1. Identify all control and expansion joints that provide an unrestricted path for the spread of fire between fire-separated compartments.
2. Require the installation of a listed or labeled fire resistive joint system tested in accordance with ASTM E814 (UL 1479) in all such instances.
3. Verify the selection and use of materials and components of the selected system conform to the listing or certification provided by the accredited testing laboratory.
4. Verify the installed system conforms to requirements and specifications of the listed or labeled system specified.

Changes
1. Corrected reference to “Quality Assurance Firms” in Scope to read “Qualified Assessment Firms.”

Authority

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