Quality Technical Bulletin

Head-of-Wall Fire Joint—Part IV

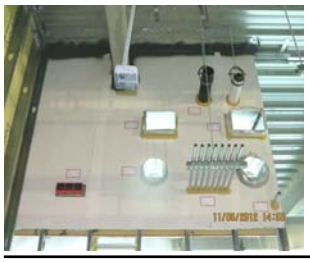
Issue 16 | 078000 | 12 March 2013

Pepper Construction

Building Quality at Every Level

Head of Wall Fire Joint Bulletins will address:

I - What is a "Head of Wall" fire joint & why do we need it.
II - Types of UL Assemblies.
III - How to read a Head of Wall & what to look for – Typical Wall & Shaft Wall.
IV - Engineering Judgments and 3rd Party Verification – How to read an EJ.
V - Deflection calculations & Compression limitations
VI - Mineral Wool Installation
VII - Concerns with the different types of fire stopping materials



The last bulletin discussed how to read a typical UL Assembly system, understanding the parts and pieces of the report. In some cases, there will not be a tested UL Assembly for the condition that our projects might have. When his happens, we need to obtain what is called an Engineering Judgment (EJ). An EJ is an alternative method of fire protection design that are based on actual tests while using sound fire engineering principals to anticipate the outcome of a particular fire joint condition that deviates from the original UL Assembly system.

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- The building code makes allowance for Engineering Judgments in Section 7.3.

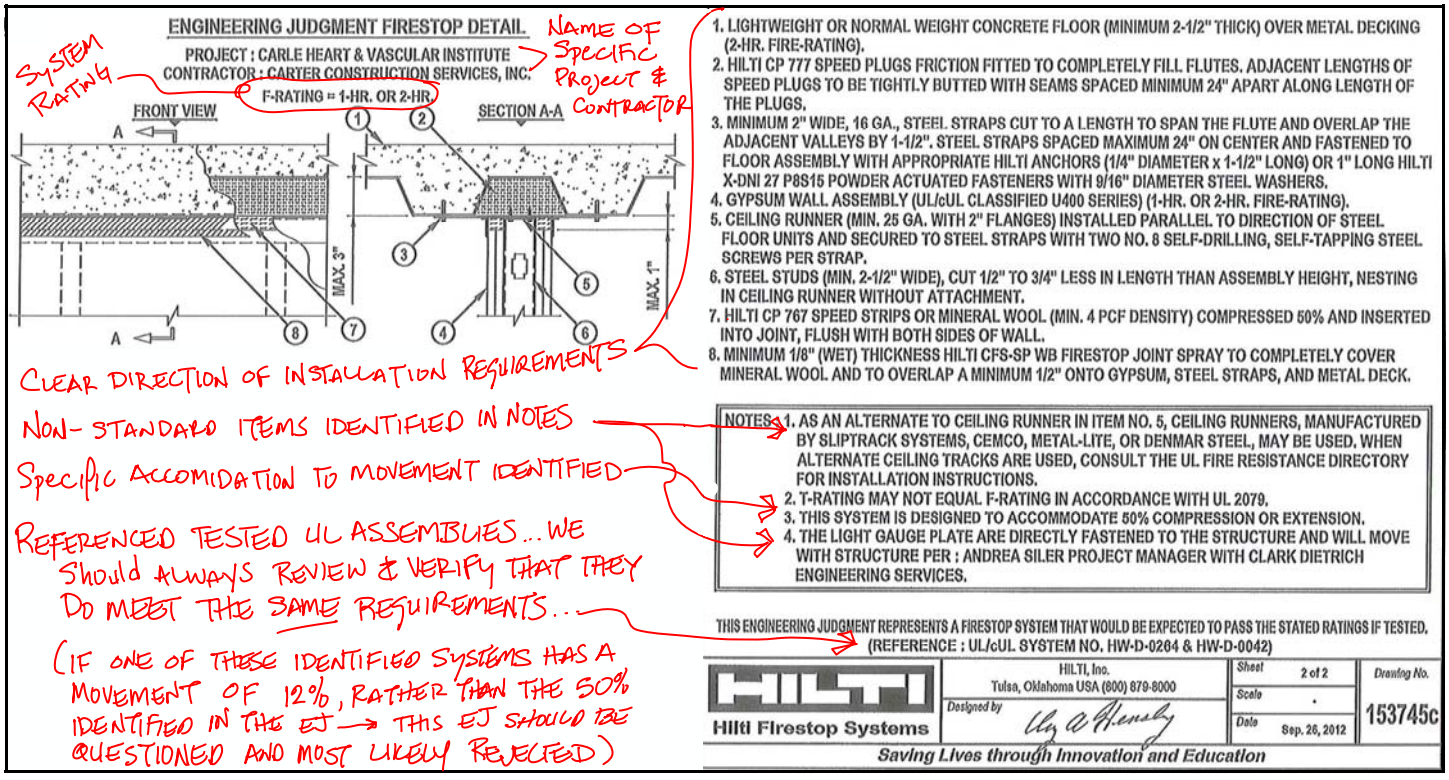
IBC – 2009—Section 703.3

Alternative methods for determining fire resistance. *The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in ASTM E 119 or UL 263.*

- If a tested UL Assembly does not accurately reflect the tested assembly, an EJ must be produced...if if one component of the system differs from the actual construction in-place.
- The EJ should be designed with the manufacturer and a registered engineer.
- Your EJ might need to be reviewed by an independent 3rd party...Typically, IDPH, Architect's & City's will require this evaluation. .
- The entity that produces or reviews the EJ, it should have the following information clearly identified in the report (based on the by the International Firestop Council's (IFC) Guidelines for evaluating EJ's):

1. Only accept an EJ when an Approved UL Tested Assembly is not available.
2. Based upon previously tested systems that are sufficiently similar in nature in which the judgment is being developed.
3. Based on similar rated tested systems...if your wall rating is 2-hours, the system(s) that are guiding this EJ also needs to be rated 2-hours.
4. Based on similar joint size and joint movement ability.
5. Only good for one specific project...a new EJ must be written for other projects, even if the EJ is the same.

The following example is one specific EJ for a partition. (your project will vary):



UL assigns the following ratings for firestop joint systems:

F-rating *for passage of flame* ***T-rating*** *for fire & temperature* ***L-rating*** *for amount of air/smoke leakage* ***W-rating*** *base on water resistance*

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