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Construction Joints

A History: materials and methods:
The Goal: To improve Life-Safety

1917—ASTM E119 (UL 263, CAN/ULC-S101) walls, floors, beams, columns
1981—UL 1479 (ASTM E814, CAN/ULC S-115) penetration seal
1981—Intermediate-Scale Multi-Story Test (SwRI)
c1993—UL 2079 (ASTM E1966, CAN/ULC S-115) construction joints
2004—ASTM E2307 (Perimeter Joints)
Definition:

- A Construction Joint is that area of construction where two or more building elements (assemblies) meet and continue or in some way interface with another building element such as a wall, floor, beam or column.
Purpose: continuity of the integrity of the assembly

- The purpose of the joint can be for the smooth transition from one element to the other; while allowing for the intended and anticipated movements of those elements without damage or loss of performance, either of the structural integrity or of the fire integrity.
Basic Types of Construction Joints:

- Head of Wall (Top of Wall)
- Wall to Wall
- Floor to Floor
- Floor to Wall
- Perimeter or Curtain Wall
The Design:
Basic Considerations:

- Materials of Construction: gypsum, concrete, steel, aluminum, stone, glass and other composites.
- The use of backing materials or other insulation barriers.
- Compatibility and adhesive properties of materials used (installation and long term performance)
- Movement: potential, anticipated, intended: cyclic (ASTM E1399)
  - temperature
  - wind
  - seismic
- The degree of movement (anticipated or intended) influence: width, thickness, composition of material or combination of materials utilized
The Testing:

- Unique and specific challenges and the limitations of existing Fire Tests
