



**UL Listed - Multi-Story (combined) & Single Story (compression only)**  
Deflection Design & Fire Protection Considerations

**Definitions:**

- 1) **Nominal Gap** – Distance between installed “starting” position of wall sheathing and lowest point of overhead substrate
- 2) **Extension** – Wall sheathing being pulled away from “starting” position and overhead substrate increasing overall width of installed joint
- 3) **Compression** – Overhead substrate pushed toward wall sheathing decreasing overall width of installed joint
- 4) **Encumbered Joint** – Materials located in “deflection gap” between wall sheathing and overhead or movement capability limited by elasticity, compressibility, or adhesive characteristics of coating materials overlapping joint onto both overhead and wall sheathing
- 5) **Unencumbered Joint** – “Deflection gap” between wall sheathing and overhead is free of any material inside joint area with no overlapping materials connected to both overhead and wall sheathing
- 6) **Movement Capability (MC)** – UL Certified/Listed overall deflection distance joint assembly materials can **accommodate without failure of assembly joint materials**
- 7) **Single Story (Compression Only)** – Deflection in “one way” to accommodate compression of overhead roof structure downward with possible return to no more than “starting” position
- 8) **Multi-Story (Compression & Extension)** – Deflection considers both compression and extension from nominal “installed” gaps on different floor levels at same time

-Typical design would be multi-level structure experiencing load or deflecting forces on one individual level affecting both compression and extension on surrounding levels at same time

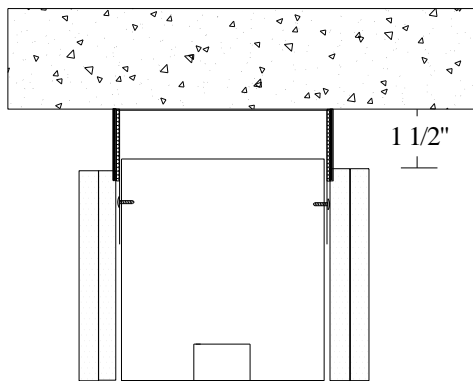


Single Story "Roof Compression Only" - Unencumbered - Safti-Seal (100% MC)

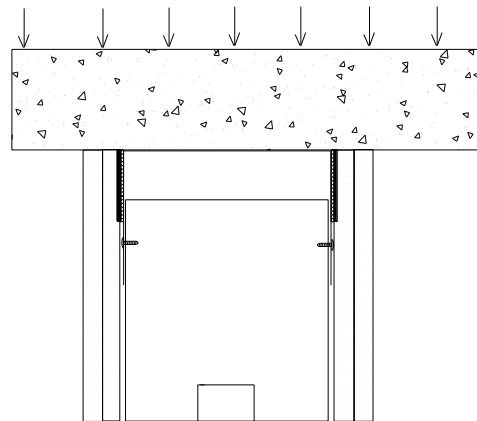
1 1/2" Overall Deflection Engineered/Specified

Required Installed Gap = 1.50"

Nominal "installed" Gap = MC of Joint Materials



Load Applied Compressing Joint

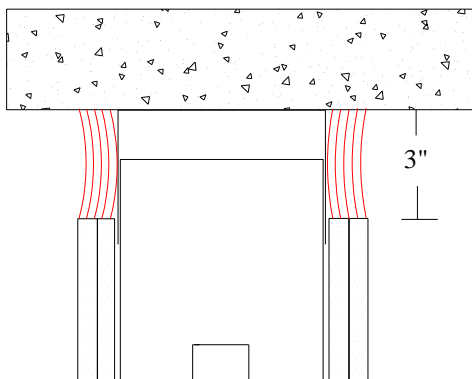


Single Story "Roof Compression Only" - Encumbered - Caulk/Joint Filled (50% MC)

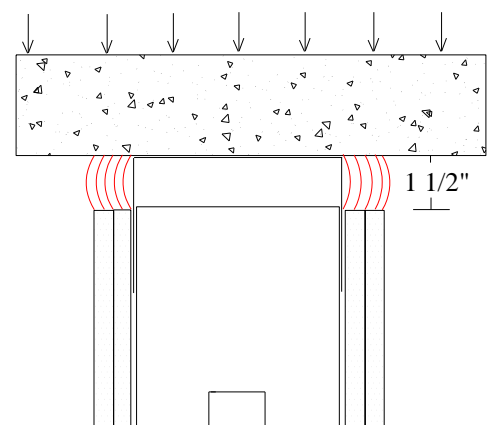
1 1/2" Overall Deflection Engineered/Specified

Required Installed Gap = 3.00" - (MC divide by 50%)

Nominal "installed" Gap = 2 x MC of Joint Materials



Load Applied Compressing Max. Joint MC

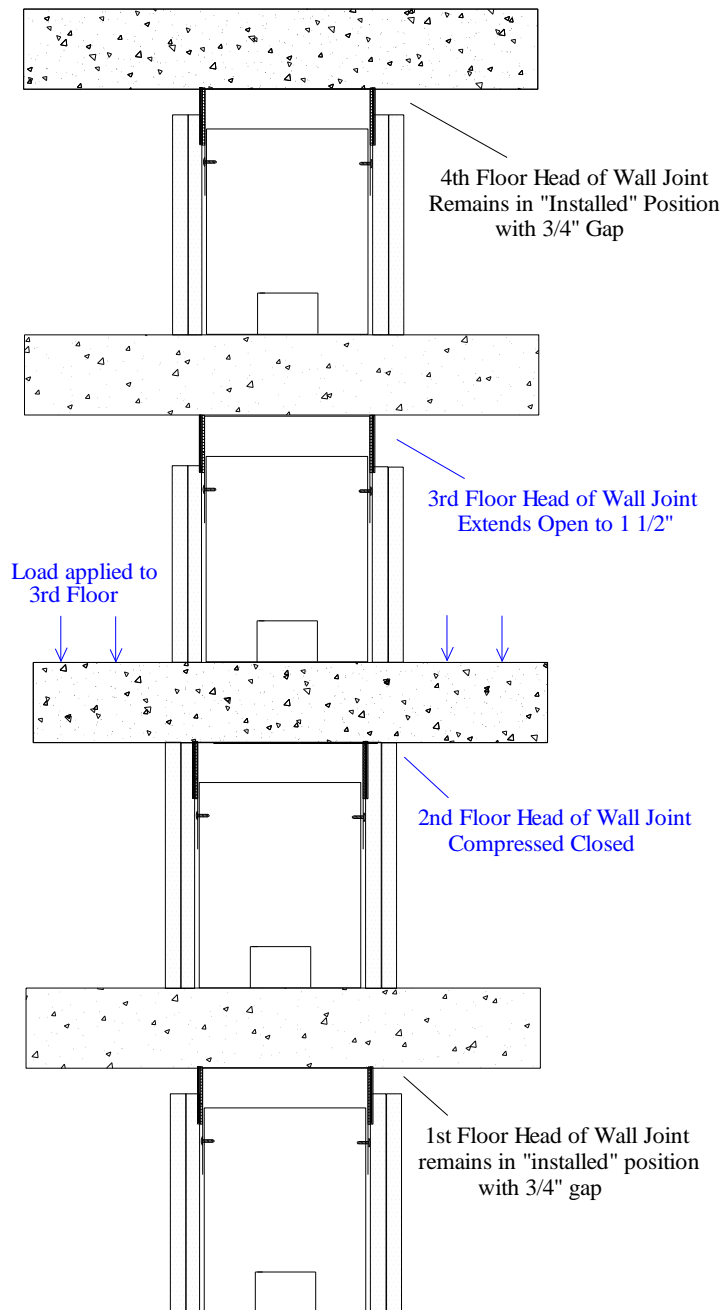




Multi-Story (Compression + Extension) - Unencumbered - Safti-Seal (100% MC)

1 1/2" Overall Deflection Engineered/Specified - (+/- 3/4" per floor)

Required Installed Gap = 3/4" - (1/2 of MC)





Multi-Story (Compression + Extension) - **Encumbered** - **Caulk/Joint Fill (50% MC)**

1 1/2" Overall Deflection Engineered/Specified - (+/- 3/4" per floor)

Required Installed Gap = **1 1/2"** - (Accommodate 50% Encumbrance)

