

International Building Code / International Fire Code
Chapter 7 Code Requirements
Membrane Penetration

INSPECTION CHECKLIST

Building and Fire Code states: All materials, systems or devices must be tested as part of a **FIRE RATED ASSEMBLY** and incorporated into the building element component or assembly to be in compliance as determined by the test procedure set forth in the ASTM E-119 or UL 263. Test approval is verified by a **DESIGN LISTING NUMBER** issued by a certified independent testing agency.

Explanation: Any product that is installed in a fire rated floor/ceiling, ceiling, or wall assembly that penetrates the finished surface of a ceiling, floor, or wall and creates an air gap between the penetrating product and the finished surface material where air could draft from the finished space into the concealed space of the fire rated assembly must have an approved fire stopping system; i.e. caulk compound or fire rated enclosure installed to be in compliance with the Code requirements as stated in Chapter 7 of the Building and Fire Code.

- 1) During building **Site Rough-In Inspection** the Code Official will request all manufacturers' installation instructions for all materials or devices where the finished surface penetrations will occur (wall, floor/ceiling and ceiling assemblies).
- 2) Code Official is required to review the fire stopping product cut sheets to verify that the fire stopping product listing numbers match the Designed Assembly as tested and approved by an independent testing agency, such as UL or Intertek/Warnock Hersey in accordance with the appropriate test; i.e. ASTM E-119 or UL 263.
- 3) Code Official will verify the size of all openings and the distance between penetrating items to ensure spacing requirements are compliant with the design listing per the testing agency certification.
- 4) Code official may request all manufacturer-generated drawings to be included in the Code Official's final inspection report.
- 5) Building Official has the authority to grant modification where the Code Official finds that the proposed design is satisfactory and complies with the intent of the provision of the code and the material method of work offered is, for the purpose intended, at least the equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability, and safety.

GLOSSARY of TERMS

- 1) **ANNULAR SPACE:** The opening around the penetrating item.
- 2) **BUILDING ELEMENT:** A fundamental component of the building construction which may or may not be of fire-resistance construction and is constructed of material based on the type of construction.
- 3) **DRAFT STOP:** A material device or construction installed to restrict the movement of air within open spaces of concealed areas of the building components such as crawl spaces, floor/ceiling assemblies, roof/ceiling assemblies and attics.
- 4) **F-RATING:** The time period that the through-penetration fire-stop system limits the spread of fire through the penetration when tested in accordance with ASTM E 814 or UL 1479 test.
- 5) **FIRE BARRIER:** A fire-resistance wall assembly of materials designed to restrict the spread of fire in which continuity is maintained.
- 6) **FIRE PARTITION:** A vertical assembly of material designed to restrict the spread of fire in which openings are protected.
- 7) **FIRE RESISTANCE RATING:** The period of time a building element, component or assembly maintains the ability to confine a fire, continues to perform a given function, or both as determined by the test methods of ASTM E-119 or UL 263.
- 8) **HORIZONTAL ASSEMBLY:** A fire-resistance rated floor or roof assembly of materials designed to restrict the spread of fire in which continuity is maintained
- 9) **MEMBRANE PENETRATIONS:** An opening made through one side (wall, floor, or ceiling) of an assembly.
- 10) **PENETRATION FIRESTOP:** A through penetration fire stop or a membrane penetration fire stop.
- 11) **T-RATING:** The time period that the penetration fire stop system (including the penetrating item) limits the maximum temperature rise to 325 degrees Fahrenheit above its initial temperature on the non-fire side when tested in accordance with ASTM E-814 or UL 1479.