

# Fire-Rated Penetrations : A CODE OFFICIALS GUIDELINES

Fire-rated Penetrations Must:

*Meet both the F-rating and T-rating of the floor/ceiling penetrated*  
*Be tested and listed*  
*Be inspected after installation*

## BUILDING CODE REQUIREMENTS FOR HORIZONTAL ASSEMBLIES WITH “F” AND “T” RATINGS

Section 712 of the 2006 International Building Code (IBC) addresses the issue of Fire-rated penetrations.

### Section 712.4.1.1.1 Installation

Through penetrations shall be installed as tested in the approved fire-resistance rated assembly.

### Section 712.4.1.1.2 Through-penetration Firestop System

Through penetrations shall be protected by an approved through-penetration firestop system installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F-rating and a T-rating of not less than 1 hour but not less than the required rating of the floor penetrated.

**CODE COMMENTARY:** The protection requirements for the through-penetration of fire-resistance rated horizontal assemblies are very similar to those required for vertical elements; however, it must have both an F-rating and a T-rating equivalent to the floor penetrated, but in no case less than 1 hour.

Fire-rated Penetrations must be tested by a third party independent testing facility and be tested in accordance with ASTM E 814 or UL 2079 test standards. These tests meet the requirements of the 2006 IBC.

### Recommended Correction Notice for Plans Examiners

Through-penetrations that penetrate a concrete barrier (floor) must have the annular space surrounding the through-penetration sealed with a tested firestop material per section 712 of the IBC. This firestop material must provide an F-rating and a T-rating equal to or greater than the hourly rating of the concrete barrier.

Please clarify on the plans and specifications the hourly rating of the concrete barrier and identify listed assemblies for the penetrant passing through the concrete barrier. These penetrations must include assembly with an F-rating and a T-rating.

### Recommended Field Inspection

Vertical steel and iron conduits that penetrate a concrete barrier must have the annular space surrounding the penetrant sealed with an appropriate firestop material. To verify this, you will need to:

Be provided with the tested and listed assembly as approved on the plans. Clarify if the through penetration firestop system requires an “F” and/or “T” rating.

Determine all steel and iron conduits that require a firestop system and inspect after installation.

Observe the firestop materials selected for the appropriate fire-resistance rated horizontal assemblies.

Sample U.L. Mark:



Firestop Device for use in  
through-penetration firestop systems.  
See UL directory of products certified for  
Canada and UL Fire Resistive Directory  
3LJL

### Technical Information

Please contact us at the numbers listed below to learn more about Fire-rated penetrations, to receive additional information or to schedule a presentation with a Fire Trak Corp. technical code specialist.

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