



Trademark
SOUNDPROOFING

STC Box Seal

Information Sheet

Why the Box Seal is Necessary for Fire Resistance:

- Partitions are tested for fire resistance under ideal laboratory conditions and standards. They are then rated for the number of hours they provide resistance to fire spread.
- The partitions submitted for testing are uniform constructions without any penetrations by such common items as pipes and recessed electrical outlets.
- Openings in partitions are sometimes separately tested for fire resistance. Large items such as doors and windows are defined as “opening protectives” in the building codes, indicating their purpose from the fire-resistance point-of-view.
- Smaller items such as pipes and outlets are tested within wall constructions of a particular fire rating. Gypsum board partitions consist of a panel board on each side of metal studs creating a “stud cavity” such that each board is considered a “membrane” in the construction system. The International Building Code (IBC), used as a standard for most state codes in the USA, includes Section 714.3.2 titled “Membrane Penetrations” which states: “Where walls or partitions are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required fire-resistance will not be reduced.”
- Section 714.3.2 has a few exceptions or clarifications of this rule for recessed electrical outlets:

Exception 1: Membrane penetrations of maximum 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches in area, provided the aggregate area of the openings through the membrane does not exceed 100 square inches in any 100 square feet of wall area. The annular space between the wall membrane and the box shall not exceed 1/8 inch. Such boxes on opposite sides of the wall or partition shall be separated by one of the following:

- 1.1. By a horizontal distance of not less than 24 inches where the wall or partition is constructed with individual non-communicating stud cavities;
 - 1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation;
 - 1.3. By solid fireblocking in accordance with Section 718.2.1;
 - 1.4. By protecting both outlet boxes with listed putty pads; or
 - 1.5. By other listed materials and methods.
- Exception 1.1 above has resulted in this being commonly referred to as the “24-inch rule.”
 - The STC Box Seal™ is certified by Underwriters Laboratories for passing “Fire Tests of Building Construction and Materials” (UL 263) and “listed” as a “wall opening protective material” in the UL Fire Resistance Directory. It complies with Exception 1.5 for one-hour fire-rated partitions.