

Clothes Dryer Exhaust – Duct Protection Requirements

Presented here are excerpts from the 2009 International Mechanical Code (and ICC published commentary) and the International Building Code in specific reference to requirements for protection of clothes dryer exhaust when penetrating fire resistance rated floor/ceiling membranes.



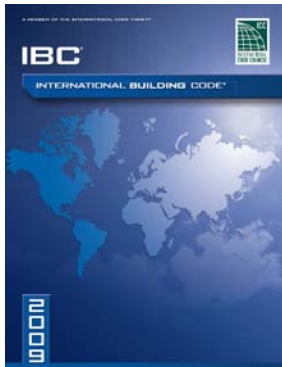
2009 International Mechanical Code:

504.2 Exhaust penetrations. Where a clothes dryer exhaust duct penetrates a wall or ceiling membrane, the annular space shall be sealed with noncombustible material, *approved* fire caulking or a noncombustible dryer exhaust duct wall receptacle. Ducts that exhaust clothes dryers shall not penetrate or be located within any fireblocking, draftstopping or any wall, floor/ceiling or other assembly required by the *International Building Code* to be fire-resistance rated, **unless such duct is constructed of galvanized steel or aluminum of the thickness specified in Section 603.4 and the fire-resistance rating is maintained in accordance with the *International Building Code*. Fire dampers, combination fire/smoke dampers and any similar devices that will obstruct the exhaust flow shall be prohibited in clothes dryer exhaust ducts.**

2009 IMC Official Commentary on Section 504.2:

It is important to note that a clothes dryer is exhausted through a duct and not a vent. As such, clothes dryer exhaust ducts must follow the same requirements as any other ducts with respect to where the ducts penetrate fire-resistance-rated assemblies. Therefore, where penetrating a fire-resistance-rated assembly, the penetration must be protected in accordance with Sections 302.2 and 607 that will, in most cases, require a fire damper and, in some cases, require a smoke damper. However, this section specifically prohibits the installation of fire and smoke dampers in a clothes dryer exhaust. The moisture, heat, lint and debris could damage, impair or obstruct fire and smoke dampers and, if the dampers were to close, a hazardous condition could result from the continued operation of the dryer. These facts certainly suggest that dryer exhaust ducts cannot penetrate any fire-resistance-rated assemblies unless the installation satisfies one of the limited fire and smoke damper exceptions in the IBC. Where penetrating fire-resistance-rated floor/ceiling or roof/ceiling assemblies, dryer exhaust duct penetrations are subject to more stringent penetration protection requirements that, in practically all cases, will necessitate a shaft enclosure for the dryer exhaust ducts.

2009 International Building Code:



716.6 Horizontal assemblies. Penetrations by ducts and air transfer openings of a floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly shall be protected by a shaft enclosure that complies with Section 708 or shall comply with Sections 716.6.1 through 716.6.3.

716.6.2 Membrane penetrations. Ducts and air transfer openings constructed of *approved* materials in accordance with the *International Mechanical Code* that penetrate the ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with one of the following:

- 1. A shaft enclosure in accordance with Section 708.**
2. A *listed ceiling radiation damper* installed at the ceiling line where a duct penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.
3. A *listed ceiling radiation damper* installed at the ceiling line where a diffuser with no duct attached penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.