

## *The most often heard contractor phrase:*

*No one else makes me do that, so why do I have to ...*

*... follow the certification limitations for Dryer Boxes used in rated wall assemblies?*

Violation : Dryer Box installed in rated wall assemblies without proper documentation  
 Code Section : 2010 FBC-B 713.3 Fire-resistance-rated walls and 2010 FBC-M 504.2 Exhaust Penetrations  
 Comments : Contractor shall provide certification listing information for Dryer Boxes installed in rated wall assemblies for verification of installation limitations and requirements.

Frequently, mechanical contractors install Dryer Boxes ( <http://www.dryerbox.com/> ) in rated wall assemblies without complying with the certification limitations of use instructions. Presumably, they look at the [label on the back of the Dryer Box](#) and see item 6 where it says “fire resistance rating (one-hour F & T)”, and, upon seeing that, assume the Dryer Box is suitable for installation in a rated wall assembly up to 1 hour without any limitations. Item 6 on the label states minimum instructions for a fire rating, and the instructions are not so simple.

The label on the back of the Dryer Box , at the end of item 6, states “Visit [www.dryerbox.com/firestop](http://www.dryerbox.com/firestop) for more detail.” The additional information is either not looked up by mechanical contractors or is ignored by mechanical contractors as mechanical contractors install Dryer Boxes in noncompliance with the limitations specified in the listing instructions.

The problem is not just with mechanical contractors either – architects and mechanical engineers specify Dryer Boxes in their construction documents in rated walls in locations which are not permitted by the listing information.

This is prevalent in residential projects such as apartment or condo buildings. These noncompliant installations are typically repeated throughout each building due to identical units being laid out back-to-back, and side-to-side on the construction drawings.

The limitations of use for Dryer Boxes in rated wall assemblies are applicable whether the project is a residential or a commercial project; whether wood frame or metal frame. Dryer Boxes are penetrations of the rated wall assembly. With their connecting dryer exhaust ducts, Dryer Boxes are through penetrations.

Dryer Boxes are permitted to be used in rated wall assemblies provided they are installed in accordance with their listing instructions.

Dryer Boxes installed in rated wall assemblies must meet the following code requirements:

- Florida Building Code – Building, *Section 713 Penetrations.*
  - *713.1 Scope.*
    - *The provisions of this section shall govern the materials and methods of construction used to protect through penetrations and membrane penetrations of horizontal assemblies and fire-resistance-rated wall assemblies.*
      - *713.1.1 Ducts and air transfer openings.*
        - *Penetrations of fire-resistance-rated walls by ducts that are not protected with dampers shall comply with Sections 713.2 through 713.3.3. Penetrations of horizontal assemblies not protected with a shaft as permitted by Exception 4 of Section 708.2, and not required to be protected with fire dampers by other sections of this code, shall comply with Sections 713.4 through 713.4.2.2. Ducts and air transfer openings that are protected with dampers shall comply with Section 716.*
  - *713.3 Fire-resistance-rated walls.*
    - *Penetrations into or through fire walls, fire barriers, smoke barrier walls and fire partitions shall comply with Sections 713.3.1 through 713.3.3. Penetrations in smoke barrier walls shall also comply with Section 713.5.*
      - *713.3.1 Through penetrations.*
        - *Through penetrations of fire-resistance-rated walls shall comply with Section 713.3.1.1 or 713.3.1.2.*
          - *Exception: Where the penetrating items are steel, ferrous or copper pipes, tubes or conduits, the annular space between the penetrating item and the fire-resistance-rated wall is permitted to be protected as follows:*

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- 1. In concrete or masonry walls where the penetrating item is a maximum 6-inch (152 mm) nominal diameter and the area of the opening through the wall does not exceed 144 square inches (0.0929 m<sup>2</sup>), concrete, grout or mortar is permitted where it is installed the full thickness of the wall or the thickness required to maintain the fire-resistance rating; or
  - 2. The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated.
  - 713.3.1.1 Fire-resistance-rated assemblies.
    - Penetrations shall be installed as tested in an approved fire-resistance-rated assembly.
  - 713.3.1.2 Through-penetration firestop system.
    - Through penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water and shall have an F rating of not less than the required fire-resistance rating of the wall penetrated.
  - Florida Building Code – Mechanical, Section 504 Clothes Dryer Exhaust
    - 504.1 Installation.
      - Clothes dryers shall be exhausted in accordance with the manufacturer's instructions. Dryer exhaust systems shall be independent of all other systems and shall convey the moisture and any products of combustion to the outside of the building.
        - Exception: This section shall not apply to listed and labeled condensing (ductless) clothes dryers.
    - 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 Florida Building Code, Building 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 Florida Building Code, Building. Fire dampers, combination fire/smoke dampers and any similar devices that will obstruct the exhaust flow shall be prohibited in clothes dryer exhaust ducts.
- (Note: This newsletter is not addressing clothes dryer ducts and their installation.)

The most common code violation to date has been installing Dryer Boxes back-to-back in the same stud cavity:

- Dryer Box [UL Firestop Specifications](#) (←link to document):
  - On the last page of that document there are links to two documents for “Back to Back Installation”:
    - The left document is for the [2006 IBC](#) (←link to document).
    - The right document is for the [2009 IBC](#) (←link to document).
    - Note that neither of the above documents allows for true “back-to-back” installation – Dryer Boxes are not permitted “back-to-back” in the same stud cavity.
    - Single Stud Walls – Dryer Boxes are permitted to be back-to-back if they are not in the same stud cavity. Dryer Boxes may be side-by-side in adjacent stud cavities with at least one stud separating those stud cavities. The stud cavities are to be fully insulated with fiberglass batt insulation.
    - Staggered Stud Walls - Dryer Boxes are permitted to be back-to-back if separated by at least one stud cavity between side-by-side Dryer Boxes. The stud cavities are to be fully insulated with fiberglass batt insulation.
    - Parallel Stud Walls – Similar to Single Stud Walls.

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Links to useful UL information regarding Dryer Boxes for installation and use in rated wall assemblies:

- (click links below to go to the documents)
  - [UL Certifications](#)
  - [Through Penetration Firestop System](#)
  - [Dryer Box Cabinet Rating](#)

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The intent of this newsletter is to help level the playing field between inspectors/plan reviewers and contractors, possibly even tilting the playing field in favor of the inspectors/plan reviewers by keeping inspectors/plan reviewers abreast of what other inspectors/plan reviewers encounter.

Many contractors say “No one else makes me do that ... ” as though that is reason enough not to have to meet code.

The reality is that many inspectors/plan reviewers are making contractors “do that” ... you are not alone on your inspections/plan reviews as other inspectors/plan reviewers are making those same calls.

Please, if you have any items, issues or tips you would like to share with other inspectors/plan reviewers, send them to the following email address for inclusion in future newsletters: [jerry@jerrypeck.com](mailto:jerry@jerrypeck.com) Editor/Publisher, *Inspectors' Field Comments Newsletter*©.

All contributors will be acknowledged and given credit for their contributions ... please help others by sharing items/issues you have found in the field or during plan reviews.

I look forward to all contributions.

Respectfully submitted,



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