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Author: Alan Manche
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Panelboards and Load Centers in Fire-Rated Walls

Can panelboards and load centers be installed in firewalls?

Square D™ panelboards and load centers by Schneider Electric™ are not third-party certified for firewall installations. As of the publication of this article, we are not aware of any other manufacturer of panels that have successfully evaluated the use of panelboards within a fire wall.

Square D has investigated fire ratings for panels in the past with unsuccessful results. The temperature on the “unexposed” side of the wall must remain below a certain value over a specified period of time. The problem with panelboards (or any other device with a metal enclosure) is that the heat transfer is very rapid and the temperature on the unexposed sides quickly exceeds the allowable limits.

If a wall is required to have a particular hourly fire rating, then the entire wall assembly, which includes all its individual components, is expected to maintain that rating. When you place a panelboard or load center in the wall, you introduce a foreign component that has not been evaluated to insure the integrity of the wall is maintained. The same is true for doors. For example, UL tests door assemblies for fire ratings to make sure the entire wall will be resistant to fire for the required duration of time.

Square D manufactures equipment that may be used through fire walls. Take for instance busway passing through many floors in a high rise building. The UL® Fire Directories (see reference below) provide materials and assemblies that ensure the fire would not spread up a high rise through those penetrations. Although there are methods to “Fire Stop” busway for two hours, there have not been any panelboards successfully evaluated for such purpose. Keep in mind that even if you were able to get the panelboard to pass, you then also add other materials (wire conduit, penetrations to exit the panel and fire rated wall) that would have to be considered in order to maintain the integrity of the fire rated wall assembly.

What codes and standards govern fire wall installations?

The requirements are driven by the building code. The International Building Code (IBC) is the primary resource to understand the installation requirements.

As mentioned above, busway can pass through firewalls as long as they are protected at the point of entry by fire-stops. Third party certification can be obtained for fire-stops per ANSI/UL 1479 (ASTM E814-02), “Fire Tests of Through-Penetration Firestops” (UL Category XHEZ). A firestop system is a specific construction consisting of a wall or floor assembly, a penetrating item passing through an opening in the wall or floor assembly, and the materials designed to prevent the spread of fire through the openings.

Also, UL 263 is used. It is the Standard for Fire Tests of Building Construction and Materials.

For More Information

Visit the Schneider Electric North America Codes and Standards Electrical Shortz website at:

<http://www.schneider-electric.us/sites/us/en/support/codes-and-standards/technical-library/product-documentation/product-documentation.page>

Schneider Electric USA, Inc.
800 Federal Street
Andover, MA 01810 USA
888-778-2733
www.schneider-electric.us

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