

What is the difference between a smoke barrier and a smoke partition?

SMOKE BARRIERS (Section 710 in the 2009 IBC) are fire-resistant rated construction features intended for the division of a building area into separate smoke compartments. The continuity of the smoke barrier must be from exterior wall to exterior wall and from floor to slab or deck above. The IBC requires smoke and draft control assemblies to have an identification mark of "S" which appears on the label following the hourly rating. The frame doesn't require the "S" mark but may be required by some jurisdictions. The "S" mark requirement comes from the 2006 and 2009 IBC, Section 715, Fire Doors and Frames.

Gaskets are required for doors to pass a smoke and draft control test. The requirement for a gasket also includes the meeting edges of a pair of doors. The gaskets used in a smoke and draft control assembly must be fire rated and be listed for use in a smoke and draft control assembly. A bottom seal is not required for smoke and draft control assemblies.

The assembly is tested to determine how much air leaks around the door. The assembly is tested for air leakage with air that is at room temperature and air that has been heated to 400°F. The amount of air leakage must be below the standards that are set forth in the building code and/or NFPA 105. An identical assembly is also subjected to a fire test. The unit must pass a 20-minute-without-hose-stream fire test to be qualified as a smoke and draft control assembly.

The IBC includes an exception for cross corridor double egress doors in smoke barriers. These doors should have the same characteristics of a fire door. The fire resistant rating cannot be provided because the doors are not required to have any self latching hardware. Double egress doors used in a smoke barrier are for use in cross corridor applications. This application is used for hospitals, nursing homes, and convalescent care facilities. CURRIES offers a specific label for this application. This Intertek only label does not carry a fire rating.

SMOKE PARTITIONS (Section 711 in the 2009 IBC) are much less restrictive and are not required to be a fire-resistant rated wall, unless specifically called for by the architect. These partitions are intended only to resist the passage of smoke. Smoke partitions may be terminated to the underside of a ceiling membrane designed to prevent the passage of smoke.

There is no code requirement for labeling of doors and frames used in smoke partitions, but some local officials have been requiring a label. CURRIES offers a specific label from Intertek for smoke and draft control without a fire rating.

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