

TECHNICAL BULLETIN

POSITIVE PRESSURE FIRE DOORS

In 1997 the International Council of Building Officials (ICBO) approved a change to the Uniform Building Code (UBC) that requires fire doors to be tested under positive pressure instead of neutral pressure. Most recently many code groups across the U.S. have adopted the International Building Code (IBC) which also contains the requirement for positive pressure.

Many states already require positive pressure rated fire doors. By 2003, 35 states have plans to adopt positive pressure requirements.

It is very important that architects, contractors and distributors are aware of the requirements in their area so the appropriate type of door is supplied (neutral or positive pressure). Door manufacturers are not responsible for interpretations of local codes.

All fire doors must meet the requirements of recognized fire door tests and bear certifying labels of an independent testing agency approved by the building official.

Installation is required to be in accordance with the National Fire Protection Association's Publication NFPA 80, "Standard for Fire Doors and Fire Windows". Machined fire doors shall be provided with detailed installation instructions when doors bear a label indicating compliance to UBC 7-2-1997 or UL 10C.

IMPORTANT FACTS TO CONSIDER WHEN READING SPECIFICATIONS

1. KEY PHRASES INDICATING POSITIVE PRESSURE
 - A. UBC 7-2-1997 – UBC Fire Test
 - B. IBC 2000 – Code
 - C. UL 10-C – Fire Test
 - D. ASTM 2074-00 – Fire Test
 - E. After 5 minutes into the test the neutral pressure plane should be at 40"
 - F. Shall meet positive pressure requirements
 - G. Intumescent seals – not telling you it is positive pressure but implying that it is.
2. KEY PHRASES INDICATING NEGATIVE (NEUTRAL) PRESSURE
 - A. UL 10-B – Fire Test
 - B. UBC 7-2-1994 – UBC Fire Test
 - C. UBC 43-2 – UBC Fire Test
 - D. Tested at atmospheric pressure
 - E. Neutral pressure
 - F. Negative pressure
 - G. ASTM E-152 – Test Method
3. PHRASES THAT DON'T TELL YOU IF IT IS POSITIVE OR NEGATIVE
 - A. NFPA 101 – Life Safety Code
 - B. NFPA 105 – Smoke and Draft Control Document
 - C. NFPA 252 – Fire Test method which gives the option to be positive or negative
 - D. UBC – With no date given could be either positive or negative
 - E. UL 1784 – Air Leakage Test for Door Assemblies
 - F. NFPA 80 – Installation standard for fire doors and windows

POSITIVE PRESSURE DOOR INFORMATION

1 METHODS OF COMPLIANCE

Positive pressure openings can be accomplished in two basic ways:

The first is described as Category “A” doors:

DOORS – NO ADDITIONAL EDGE-SEALING SYSTEM REQUIRED

This category includes doors evaluated without any intumescent on either the frame or door. It also includes doors evaluated with intumescent incorporated into the edge of the door by the manufacture or licensed machiner.

The second method is called Category “B” doors.

DOORS – ADDITIONAL EDGE-SEALING SYSTEM REQUIRED

This category includes doors evaluated with an intumescent applied to the frame- either surface applied or “built-in”.

2 S LABEL SMOKE RATING

Many positive pressure openings will also require a smoke seal. An “S” label requirement indicates the opening needs to have Smoke and Draft Control Gasketing. This category “H” includes gasket systems that are surface-applied (such as kerf applied, adhesive backed or mechanically attached) to frames or doors. It includes gasketing for the meeting edges for use in pair and double egress assemblies. This category covers gasket systems that have been evaluated for use in positive pressure rated assemblies but do not provide an edgesealing system to the opening as described below.

3 EDGE-SEALING SYSTEMS

This category “G” includes intumescent-type systems that are surface applied (such as kerf applied, adhesive backed or mechanically attached) to frames or doors. It includes seals for meeting edges for use in pair and double egress assemblies.

4 DOOR SPECIFICATION DESCRIPTORS

Section G-1, of the WDMA I.S. 1-A lists the different types of flush door constructions available in the industry. Fire rated flush doors for positive pressure openings are designated with the “PP” suffix. Stile and Rail doors as described by WDMA I.S. 6A are also available for positive pressure openings based on specific manufacturer’s approvals.

The change to positive pressure requirements can be confusing as the new codes are implemented and various door, frame and hardware manufacturers develop new products to meet those requirements. For additional information contact your Architectural Wood Door Manufacturer or WDMA.

