

## MINERAL CORE

### Choosing the Right Fire-Rated Door

The rating of the fire door you need is determined by the local building code and the authority having jurisdiction. Marshfield DoorSystems fire-rated doors have successfully completed over 1,000,000 slams without failure (tested per WDMA, TM-7).

### Basic Requirements for Installing Fire-Rated Doors

1. Do not remove the classified label.
2. Install in accordance with Marshfield DoorSystems Care & Handling Instructions and NFPA 80.
3. Install listed glass in approved lite kits and carefully follow directions enclosed.
4. Install steel full-mortised butt hinges by drilling 9/64" pilot holes and use #12 x 1-1/4" threaded-to-the-head Type AB screws in accordance with ANSI B18.6.4-1981. Install steel half-surface hinges with fireplates, backerplates and through bolts.

### Hinges

The National Fire Protection Association Standard specifies that two hinges must be used for doors up to 60" in height. An additional hinge is required for each additional 30" in height or fraction thereof.

### Closers

The Underwriters Laboratories Building Materials Directory catalogs a number of surface-type closers that may be used with labeled fire-rated doors. A surface-type closer is one that does not require the removal of wood except for fasteners. Concealed closers may not be used.

- Surface-mounted hardware can be used on doors with inner blocking, without through bolts.

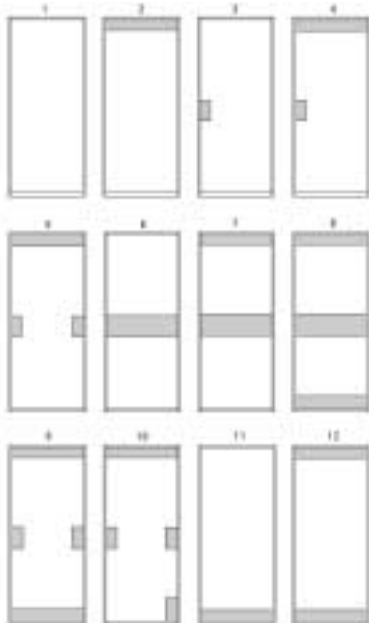
### Installation Note

Surface mounted hardware, on mineral core doors, must be anchored on an inner blocked door using a No. 12 screw which penetrates the door by a minimum of 1-1/4". 9/64" pilot holes must be drilled the depth of the screws. Do not use combination screws.

### No-Bolt Inner Blocking

The purpose of No-Bolt Inner Blocking is to attach surface hardware and exit devices with screws, thus eliminating through bolts on mineral core fire doors. It is not necessary to use No-Bolt inner blocking on Marshfield DoorSystems fire doors where doors are machined for standard locks.

- Screw Withdrawal Exceeds 700 lbs. (tested per WDMA, TM-10)
- Options for No-Bolt Blocking\*:



Note: The blocking in the door is gray in color to distinguish it from the white mineral core.

- Top blocking is 5" high and the full width of the door core.
- Center blocking is 10" high and the full width of the door core.
- Bottom blocking is 5" high and the full width of the door core.
- Exit device blocks may be 5" x 10" or 5" x 18", please specify size required, and corner blocks are 5" x 10".

\*This blocking is not required for use with mortise hardware.

Note: Center blocking and exit device blocks can not be in the same door.

### AT Rails on Mineral Core Doors

"AT" stands for "Advanced Technology". The AT rail is a white, non-combustible material. There is no lumber or wood in an AT rail. Marshfield DoorSystems uses AT rails for mineral core doors with the following approvals:

#### Agency Approvals:

Intertek Testing Services – Warnock Hersey and Underwriters Laboratories have authorized usage of:

- Magnetic switches listed for use on wood or composite 45-90-minute fire doors with 2-1/16" AT top rail.
- Bottom seals listed for use on wood or composite 45-90-minute fire doors that are no larger than 1-15/16" deep and 15/16" wide with 3-1/4" AT bottom rails. Bottom seal must be installed with screws and silicone caulk.

Note: AT rails may be used on mineral core doors for other instances by request. They are not necessarily limited to use with magnetic switches and bottom seals. The AT rails can also be combined with No-Bolt inner blocking for closers that require greater than 5" blocking.

Multiple AT rails available in the following sizes: 2-1/16", 3-1/4", 4-7/16", 5"

### Kickplates

Kickplates may be attached to the face of the door. The plate used must be an approved material (metal, high pressure laminate, PVC, or acrovyn). The surfaced applied kickplate may be applied with screws or suitable adhesive. The height is not to exceed:

- Up to 48" from the bottom of the door on 20-90 minute doors

Acrovyn Kickplates and PVC by Inpro can be the "full height" of the door for all ratings 20 thru 90-minute, UL label only.

### Fire-Rated Lite Systems

Underwriters Laboratories and Intertek Testing Services – Warnock Hersey procedures require that openings be cut at the factory or by a licensed machiner and that approved lite systems be used.

Marshfield DoorSystems will factory glaze upon request. More than one lite opening per door is permitted. For the allowable combined area of the lite opening and limitations, see Appendix G, H and I. There must be at least 5-1/2 inches from lite to any edge and adjacent openings on any fire-rated door in order to retain a classified fire rating.

### Independent Certification

The Marshfield DoorSystems fire-rated product line has been tested, and is listed and labeled by Intertek Testing Services – Warnock Hersey (ITS-WH) and Underwriters Laboratories (UL) in accordance with ASTM E-152-73, NFPA 252-73, UBC 43-2(73), UL 10B and CAN4-S104 with hose stream.

### For Additional Information on Installation of Fire-Rated Doors

For more information on how to install fire-rated doors, see NFPA 80. For application information, see NFPA 101:

National Fire Protection Association  
 P.O. Box 9101  
 1 Batterymarch Park  
 Quincy, MA 02269  
 or  
 Installation Guide for Doors and Hardware  
 Door and Hardware Institute  
 7711 Old Springhouse Road  
 McLean, VA 22102

### For More Information on Fire-Rated Doors

Underwriters Laboratories, Inc.  
 333 Pfingsten Road  
 Northbrook, IL 60062  
 708-272-8800  
 or  
 Intertek Testing Services – Warnock Hersey  
 8431 Murphy Drive  
 Middleton, WI 53562  
 608-836-4400

The mark of excellence™



Note: Marshfield DoorSystems doors are manufactured per the standards listed on this page. Specifications are subject to change without notice.