

**MINNEAPOLIS FIRE DEPARTMENT
FIRE PREVENTION BUREAU POLICY #7-1
FIRE DOORS**

Original Issue 1-03-05

Last Revision 8-7-09

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ISSUE:

Acceptable existing fire doors and upgrading doors.

CODE REQUIREMENTS:

A fire door assembly consists of a frame, door, hinges and a latch. Newer fire doors and frames have labels that identify the fire resistance rating (FRR) of the door and frame. The labels are generally located on the hinge side (or on the top) of the door and are legible only when the door is open. Fire rated doors are to be self-closing or automatic-closing on activation of a smoke detector. Closing devices may be hydraulic, pneumatic or spring hinges. Spring type hinges are to be listed and at least 50% of the door hinges are to be spring type with not less than two (2) spring hinges per door. Fire doors are to latch in the closed position. No more than 15 pounds of effort is to be needed to unlatch the door and no more than 30 pounds of force to open the door. The door is to fit tightly within its frame and have no gaps at the top or sides. A maximum of a 3/4 inch gap is allowed at the bottom of the door.

Opening protection is required for penetrations of fire rated walls. Note: Generally corridor walls are required to be of 1 hour FRR when serving an occupant load of 10 or more in groups R and I occupancies or 30 or more in other occupancy groups (there are exceptions to this rule in the fire code, such as non-rated corridors are allowed in buildings protected by fire sprinklers).

Required opening protection:

- 1. Doors that open into fire rated corridors:
 - a. 20 minute FRR listed fire door.*
 - b. Existing 1 3/4 inch solid wood door.*
 - c. A 1 3/8 inch solid bonded wood core door or equivalent insulated steel door are acceptable where an existing frame will not accommodate a 1 3/4 inch door.*
*(MSFC)**
- 2. Opening protection for occupancy separations, furnace rooms and storage rooms:
 - a. One (1) hour FRR listed fire door.*
 - b. 1 3/8 inch insulated steel door.*
 - c. 1 3/4 inch solid wood door.*
 - d. 1/4 thick wired glass fixed in steel frame.*
*(MSFC)**
- 3. Opening protection for shaftways and stair enclosures:
 - a. One (1) hour FRR listed fire door.**

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PROBLEM:

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Many existing doors in fire walls are not labeled fire doors or may be missing required hardware. Some of these doors are inherently fire resistive or may be able to continue to be used if modified.

MFD ACCEPTABLE COMPLIANCE:

1. The fire code allows fire doors to be penetrated only by required hardware, deadbolt locks and a maximum of two (2) labeled security viewing ports. Generally damaged labeled fire doors can not be repaired or upgraded in the field and are required to be replaced with new doors.

This policy allows fire doors that lack necessary hardware to be upgraded with appropriate hardware, provided the modifications are in accordance with NFPA #80 and the hardware manufacturer's instructions. (MFD Policy)

2. Refer to other MFD policies and the fire code for determination of when fire doors are required and their required fire resistance ratings.
3. Existing 1 3/8" or thicker solid core or hollow core wood doors may be upgraded to the equivalent of a 20 minute fire rating by the following method:

The installation of a "Retrofit Fire Door Kit" which is U.L. listed under "Type Fire Door Retrofit Parts" (U.L. category GSZG) installed per the manufacturers instructions.

These kits are available from Ever Ready Closures Inc. or approved equal.

4. A fire retardant coating may be applied to existing doors to provide up to a 2 hour fire rating. The coating is to be approved by the MFD and be applied according to the manufacturer's instructions to achieve the desired rating as tested to ASTM E-119 test.
5. Existing solid core wood doors may be upgraded to the equivalent of a 20 minute fire rating by one of the following methods:
 - a. Installation of 1/2 inch gypsum board sheeting on the occupied (dwelling side) of the door.
 - b. Installation of 3/4 inch plywood sheeting on the occupied (dwelling side) of the door.

The sheeting is to cover the entire exposed surface of the closed door. The sheeting may be painted, and have trim or veneer applied to it's surface.

The sheeting is to be attached as follows:

*Nails or screws are to be located within 3/4 inch of the perimeter of the door spaced a maximum of 7 inches on center. An additional line of nails or screws is to be located vertically at not more than 2 feet from the perimeter attachments or additional horizontal lines of attachment at no more than 2 feet from the perimeter attachments and at 2 foot intervals. Nails or screws are to be spaced at a maximum of 7 inches on center.

*Gypsum board is to be attached to the door by either 5d x 1-5/8 inch long nails or #8 x 1-1/4 inch long wood screws.

*Plywood is to be attached by minimum #8 x 1-1/2 inch wood screws.

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MFD ACCEPTABLE COMPLIANCE: (Continued)

5. Existing solid core doors ... (continued)
 - c. Existing dwelling unit doors which are solid core wood with panel that are at least 3/8 inches may be upgraded as outlined in 5a. & 5b above or by applying 2 coats of an approved intumescent coating.

6. Proposed door upgrades in accordance with Appendix B of the "HUD Fire Ratings of Archaic Materials and Assemblies" will be considered.

Detailed drawings are to be submitted to us for approval before upgrading the doors. The doors are not to be upgraded until the design has been formally approved.