

**Fire-Rated Infinity Door**

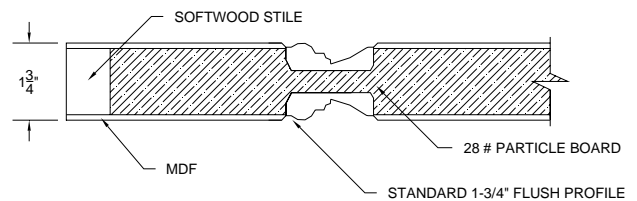
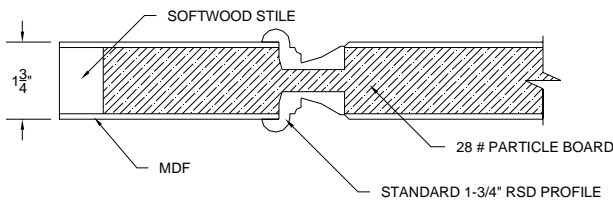
**20 Minute (Positive Pressure) Category A & B  
Manufacturing Specifications  
As of May 2006**

<b>MAXIMUM SIZES</b>	<i>All doors shall have a minimum thickness of 1-3/4" ± 1/16"</i>
Single Swing:	<b>4/0 x 9/0</b>
Standard Pair:	<b>8/0 x 9/0 2, 3 and 4 point latch</b>
Double Egress Pair:	<b>8/0 x 9/0 2, 3 and 4 point latch</b>
Standard CVR Pair:	<b>8/0 x 9/0 *5" composition stile with 5" metal channel*</b>
Double Egress CVR Pair:	<b>8/0 x 9/0 *5" composition stile with 5" metal channel*</b>
Door & Transom Single Swing:	<b>4/0 x 9/0 Max Transom size = 4/0 x 3/4 transom bar between door &amp; transom</b>
Door & Transom Pair:	<b>N/A</b>
Dutch Door Single & Pair:	<b>N/A</b>

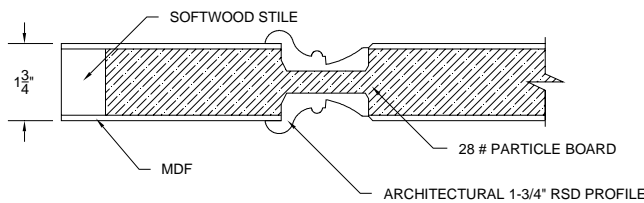
01

**Note:** *Hardware machining must be done by the factory or authorized dealer/distributor in order for the door to receive an attached metal label. See Prefit and Machining section.*

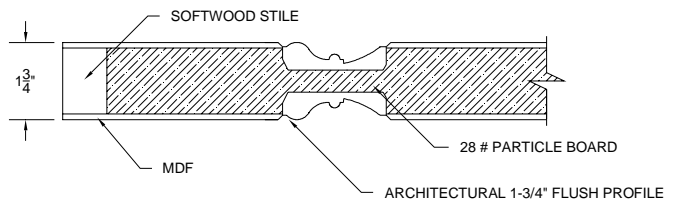
**INFINITY - STANDARD RAISED - 20 MIN. RATING      INFINITY - STANDARD FLUSH - 20 MIN. RATING**



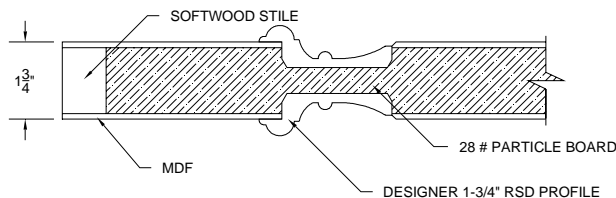
**INFINITY - ARCHITECTURAL RAISED  
20 MIN. RATING**



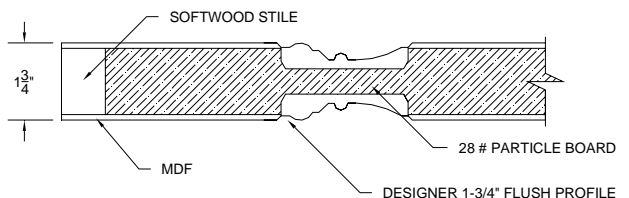
**INFINITY - ARCHITECTURAL FLUSH  
20 MIN. RATING**



**INFINITY - DESIGNER RAISED - 20 MIN. RATING**



**INFINITY - DESIGNER FLUSH - 20 MIN. RATING**



**Fire-Rated Infinity Door**

**20 Minute (Positive Pressure) Category A & B  
Machining Specifications  
As of May 2006**

Hardware Preparation:	All hardware to be prepared for must be labeled and listed
Hinges:	Per NFPA 80, Table 2-8.1.1, continuous hinges, spring hinges
Latch Sets:	Positive latching is required on all fire doors. Roller latches are not allowed
Cylindrical:	Maximum 2-1/8 dia. hole with maximum 5" backset, minimum 2-3/8" backset
Mortise:	Maximum 1-1/16" wide x 4-1/2" deep x 6-1/2" high
Fire Exit Devices:	Rim, surface vertical rod, concealed vertical rod (CVR), CVR top only
Closing Devices:	Floor closers, surface mounted closers (must be mounted with through bolts) An exception to this would be when the doors have been ordered with interior blocking that would permit the closures to be attached with screws. Spring hinges (2 per leaf)
Overhead Stops:	Only with approved 20 minute rated hardware
Concealed Closer Arms:	Only with approved 20 minute rated hardware
Louvers:	Only with approved 20 minute rated louver kit
Dust Boxes for Strike:	Allowed (must be steel)
Dead Bolts:	Mortised minimum 5" from latch cutout, cylindrical minimum 5" CL to CL
Interconnected Dead Bolts:	Allowed
Flush Bolts:	Mortised automatic, mortised semi-automatic, surface mounted, extension to 24"
Viewers:	Maximum 1" dia.
Metal Edges & Astragals:	N/A *metal edges not allowed with intumescent* Supplied with all CVR construction: when metal edge is used, cat A is satisfied
Protection Plates:	Allowed up to 48" from bottom of door
Automatic Door Bottoms:	Surface, semi-mortised and fully-mortised allowed: Maximum cutout is 1" x 1-3/4"
Von Duprin EPT Device:	N/A
Raceways:	Maximum 3/8" x 3/8" channel, minimum 1-1/8" from molding cutout
Plant-Ons:	One or both faces, maximum width = 2-3/8". Maximum thickness 3/4" Not closer than 3-1/2" from edge or hardware cutout, not more than 20% of door
Vision Panels:	1296 sq. in. glass, maximum width 36", maximum length 54". Minimum of 5-3/8" from edge of molding, door or hardware cutout. Larger vision panels are available when using listed approved vision lite frames and glass from specific manufacturers.
Dutch Doors:	N/A
Door & Transom:	Must be same construction as door. Transom may not be rabbetted. Install with a metal edge and astragal or with a transom bar between the door and transom Spring bolts must be applied as follows: 2" from each corner up to 18" tall require 2 per side; 18" to 36" tall require 3 per side; 36" to 40" require 4 per side
Installation Instructions:	Installation instructions must be supplied with all orders which are machined The instruction sheet must be securely attached to each pallet of doors
Labeling:	Warnock Hersey "ONLY" may be used. The labels must be applied 60" from the bottom of the door on the hinge side the only exception is when a "continuous hinge" is used then the label shall be applied to the top rail
Secondary Labels:	These are to be overlapped with the main label to indicate the following Fire exit hardware, surface mounted hardware, fire retardent edges, listed side panel, "S" label for positive pressure. (Continual improvements in fire testing)

**Fire-Rated Infinity Door**

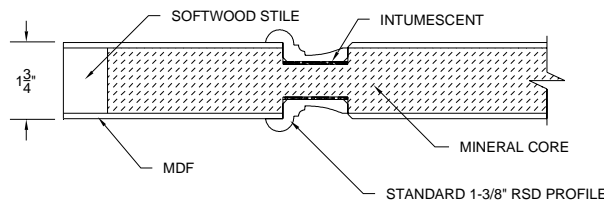
**45 & 60 Minute (Positive Pressure) Category A & B  
MINERAL CORE - Manufacturing Specifications  
As of May 2006**

<b>MAXIMUM SIZES</b>	<i>All doors shall have a minimum thickness of 1-3/4" ± 1/16"</i>
Single Swing:	<b>4/0 x 9/0</b>
Standard Pair:**	<b>8/0 x 9/0 2, 3 and 4 point latch</b>
Double Egress Pair:**	<b>8/0 x 9/0 2, 3 and 4 point latch</b>
Standard CVR Pair:	<b>8/0 X 9/0 (5" stiles with 5" metal channel)</b>
Door & Transom single swing:	<b>4/0 x 9/0 maximum transom 4/0 x 3/4</b>
Dutch Door:	<b>N/A</b>

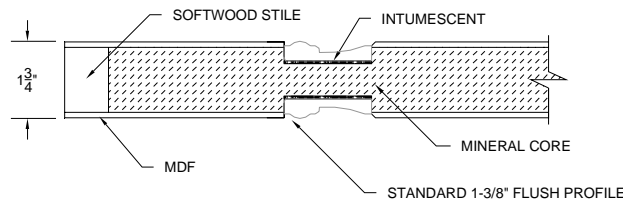
03

**Note:** *Hardware machining must be done by the factory or authorized dealer/distributor in order for the door to receive an attached metal label. See Prefit and Machining section.*

**INFINITY - STANDARD RAISED - 45/60 MIN. RATING**



**INFINITY - STANDARD FLUSH - 45/60 MIN. RATING**



**Fire-Rated Infinity Door****45 & 60 Minute (Positive Pressure) Category A & B****Machining Specifications****As of May 2006**

Hardware Preparation:	<b>All hardware to be prepared for must be labeled and listed</b>
Hinges:	<b>Per NFPA 80, Table 2-4.3.1, mortise ball-bearing hinges</b>
Latch Sets:	<b>Positive latching is required on all fire doors. Roller latches are not allowed</b>
Cylindrical:	<b>Maximum 2-1/8 Dia. Hole with maximum 5" backset, minimum 2-3/8" backset</b>
Mortise:	<b>Maximum 1-1/16" wide x 4-1/2" deep x 6-1/2" high</b>
Fire Exit Devices:	<b>Rim, surface vertical rod, concealed vertical rod</b>
Closing Devices:	<b>Floor closers, surface mounted closers (must be mounted with through bolts) An exception to this would be when the doors have been ordered with interior blocking that would permit the closures to be attached with screws Spring hinges (2 per leaf) closing devices must be per UBC 7-2 1997</b>
Overhead Stops:	<b>N/A</b>
Concealed Closer Arms:	<b>N/A</b>
Louvers:	<b>N/A</b>
Dust Boxes for Strike:	<b>Required on pairs, must be metal construction - plastic not allowed</b>
Dead Bolts:	<b>Mortise minimum 5" from latch cutout, cylindrical minimum 5" from CL to CL</b>
Interconnected Dead Bolts:	<b>Allowed</b>
Flush Bolts:	<b>Surface, mortised, automatic and manual</b>
Viewers:	<b>Maximum 1" dia.</b>
Von Duprin EPT Device:	<b>3" composite stile or 2" composite stile with lock block</b>
Protection Plates:	<b>Allowed up to 16" from bottom of door</b>
Automatic Door Bottoms:	<b>Surface, semi-mortised and mortised allowed: Maximum cutout 1" x 1-3/4"</b>
Metal Edges & Astragals:	<b>N/A *metal edges not allowed with intumescent* Supplied with all CVR construction: when metal edge is used, cat A is satisfied</b>
Raceways:	<b>Maximum 3/8" x 3/8" channel, lower 40" of door, no closer than 1-1/8" to molding</b>
Plant-Ons:	<b>One or both faces, maximum width = 2-3/8". Maximum thickness 3/4" Not closer than 3-1/2" from edge or hardware cutout, not more than 20% of door</b>
Vision Panels:	<b>1296 sq. in. glass 45 min. - 100 sq. in. glass 60 min. Minimum of 5-3/8" from edge of molding, door or hardware cutout. Larger vision panels are available when using listed approved vision lite frames and glass from specific manufacturers.</b>
Dutch Doors:	<b>N/A</b>
Door & Transom:	<b>Must be the same construction as the door. Transom bar must be used. Spring bolts must be applied as follows: 2" from each corner up to 18" tall require 2 per side; 18" to 36" tall require 3 per side; 36" to 40" tall require 4 per side</b>
Installation Instructions:	<b>Installation instructions must be supplied with all orders which are machined The instruction sheet must be securely attached to each pallet of doors</b>
Labeling:	<b>Warnock Hersey "ONLY" may be used. The labels must be applied 60" from the bottom of the door on the hinge side, the only exception is when a "continuous hinge" is used then the label shall be applied to the top rail; "S" label must accompany the label</b>
Secondary Labels:	<b>These are to be overlapped with the main label to indicate the following Fire exit hardware, surface mounted hardware, fire retardent edges, listed side panel, "S" label for positive pressure</b>

**Fire-Rated Infinity Door**

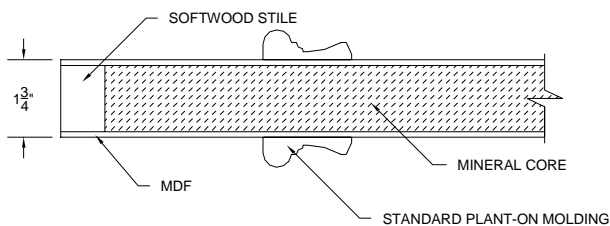
**90 Minute (Positive Pressure) Plant-on Moldings - Category A & B  
MINERAL CORE - Manufacturing Specifications  
As of April 2006**

MAXIMUM SIZES	<i>All doors shall have a minimum thickness of 1-3/4" ± 1/16"</i>
Single Swing:	4/0 x 9/0
Standard Pair:**	8/0 x 9/0 2, 3, and 4 point latch
Double Egress Pair:**	8/0 x 9/0 2, 3, and 4 point latch
Standard CVR Pair:	8/0 X 9/0 (5" stiles with 5" metal channel)
Door & Transom single swing:	4/0 x 9/0 maximum transom 4/0 x 3/4
Dutch Door:	N/A

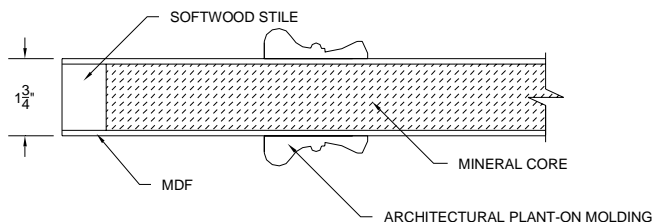
05

**Note:** *Hardware machining must be done by the factory or authorized dealer/distributor in order for the door to receive an attached metal label. See Prefit and Machining section.*

**INFINITY - STANDARD PLANT-ON - 90 MIN. RATING**



**INFINITY - ARCHITECTURAL PLANT-ON - 90 MIN. RATING**



**Fire-Rated Infinity Door**

**90 Minute (Positive Pressure) Plant-on Moldings - Category A & B  
Machining Specifications  
As of April 2006**

Hardware Preparation:	All hardware to be prepared for must be labeled and listed
Hinges:	Per NFPA 80, Table 2-4.3.1, mortise ball-bearing hinges
Latch Sets:	Positive latching is required on all fire doors. Roller latches are not allowed
Cylindrical:	Maximum 2-1/8 Dia. Hole with maximum 5" backset, minimum 2-3/8" backset
Mortise:	Maximum 1-1/16" wide x 4-1/2" deep x 6-1/2" high
Fire Exit Devices:	Rim, surface vertical rod, CVR
Closing Devices:	Floor closers, surface mounted closers (must be mounted with through bolts) An exception to this would be when the doors have been ordered with interior blocking that would permit the closures to be attached with screws Spring hinges (2 per leaf) closing devices must be per UBC 7-2 1997
Overhead Stops:	N/A
Concealed Closer Arms:	N/A
Louvers:	N/A
Dust Boxes for Strike:	Required on pairs, must be metal construction - plastic not allowed
Dead Bolts:	Mortise minimum 5" from latch cutout, cylindrical minimum 5" from CL to CL
Interconnected Dead Bolts:	Allowed
Flush Bolts:	Surface, mortised, automatic and manual
Viewers:	Maximum 1" dia.
Von Duprin EPT Device:	3" composite stile or 2" composite stile with lock block
Protection Plates:	Allowed up to 16" from bottom of door
Automatic Door Bottoms:	Surface, semi-mortised and mortised allowed. Maximum cutout 1" x 1-3/4"
Metal Edges & Astragals:	N/A *metal edges not allowed with intumescent* Supplied with all CVR construction: when metal edge is used, cat A is satisfied
Raceways:	Maximum 3/8" x 3/8" channel, lower 40" of door, no closere than 1-1/8" to molding
Plant-Ons:	One or both faces, maximum width = 2-3/8". Maximum thickness 3/4" Not closer than 3-1/2" from edge or hardware cutout, not more than 20% of door
Vision Panels:	100 sq. in. glass 90 min. Minimum of 5-3/8" from edge of molding, door or hardware cutout. Larger vision panels are available when using listed approved vision lite frames and glass from specific manufacturers.
Dutch Doors:	N/A
Door & Transom:	Must be the same construction as the door. Transom bar must be used. Spring bolts must be applied as follows: 2" from each corner up to 18" tall require 2 per side; 18" to 36" tall require 3 per side; 36" to 40" tall require 4 per side
Installation Instructions:	Installation instructions must be supplied with all orders which are machined The instruction sheet must be securely attached to each pallet of doors
Labeling:	Warnock Hersey "ONLY" may be used. The labels must be applied 60" from the bottom of the door on the hinge side, the only exception is when a "continuous hinge" is used then the label shall be applied to the top rail; "S" label must accompany the label
Secondary Labels:	These are to be overlapped with the main label to indicate the following Fire exit hardware, surface mounted hardware, fire retardent edges, listed side panel, "S" label for positive pressure

**Fire-Rated Infinity Door**

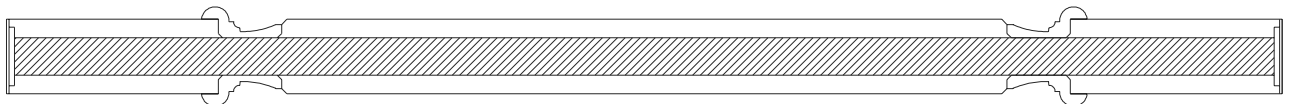
**90 Minute (Positive Pressure) - Category A  
INTUMESCENT LAYERED CORE - Manufacturing Specifications  
As of May 2006**

<b>MAXIMUM SIZES</b>	All doors shall have a minimum thickness of 1-3/4" $\pm$ 1/16"
Single Swing:	3/6 x 8/0
Standard Pair:	7/0 x 8/0
Double Egress Pair:	7/0 x 8/0
Standard CVR Pair:	N/A
Double Egress CVR Pair:	N/A
Door & Transom Single Swing:	N/A
Door & Transom Pair:	N/A
Dutch Door Single Swing:	N/A
Dutch Door Pair:	N/A

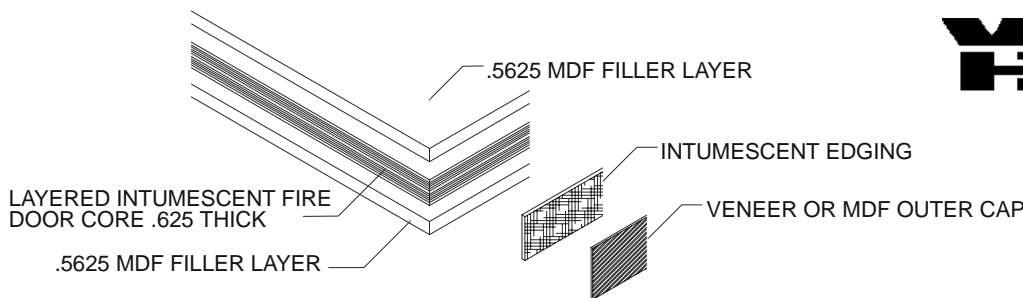
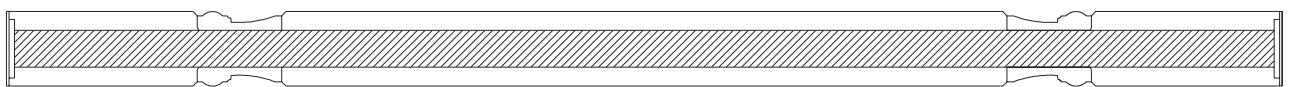
07

**Note:** *Hardware machining must be done by the factory or authorized dealer/distributor in order for the door to receive an attached metal label. Intumescent layered core must be pre-sized in width by the factory. See Prefit and Machining section.*

90 MIN. 1-3/4 W/1-3/8" STANDARD RAISED MLDG.



90 MIN. 1-3/4 W/ 1-3/8" STANDARD FLUSH MLDG.



*.875 thick core in double doors*

**Fire-Rated Infinity Door****90 Minute (Positive Pressure) - Category A****INTUMESCENT LAYERED CORE - Machining Specifications****As of May 2006**

Hardware Preparation:	All hardware to be prepared for must be labeled and listed
Hinges:	Per NFPA 80, table 2-8.1.1, continuous hinges, mortised heavy duty ball bearing
Latch Sets:	Positive latching is required on all fire doors. Roller latches are not allowed
Cylindrical:	Maximum 2-1/8" dia. Hole with maximum backset of 5" minimum backset of 2-3/8"
Mortise:	Maximum 1-1/16" x 4-1/2" x 6-1/2" (W x D x H) Minimum 1/2" throw on single swing minimum 3/4" on pairs
Fire Exit Devices:	Surface mounted vertical top and bottom rods
Closing Devices:	Floor closers, surface mounted closers must be mounted with through bolts or screws Spring hinges (2 per leaf)
Overhead Stops:	N/A
Concealed Closer Arms:	N/A
Louvers:	N/A
Dust Boxes for Strike:	Allowed - must be steel
Dead Bolts:	Mortise minimum 5" from latch cutout, cylindrical minimum 5" from CL to CL
Interconnected Dead Bolts:	Allowed
Flush Bolts:	Mortised automatic, mortised semi-automatic, surface mounted
Viewers:	Maximum 1" dia.
Metal Edges & Astragals:	N/A
Edge Guards:	N/A
Protection Plates:	Allowed up to 12" from bottom of door
Automatic Door Bottoms:	Surface
Von Duprin EPT Device:	N/A
Raceways:	N/A
Plant-Ons:	One or both faces, maximum width = 2-3/8" maximum thickness 3/4" Not closer than 3-1/2" from edge or hardware cutout, less than 30% of door
Vision Panels:	N/A
Dutch Doors:	N/A
Door & Transom:	N/A
Installation Instructions:	Installation instructions must be supplied with all orders which are machined The instruction sheet must be securely attached to each pallet
Labeling:	Warnock Hersey "ONLY" may be used. The labels must be applied 60" from the bottom of the door on the hinge side, the only exception is when a "continuous hinge" is used then the label shall be applied to the top rail
Secondary Labels:	These are to be overlapped with the main label to indicate the following: Fire exit hardware, surface mounted hardware, fire retardant edges, listed side panel, "S" label for possitive pressure

08

## FIRE DOOR INSTALLATION REQUIREMENTS

### PBC 20 MINUTE & MINERAL CORE 45, 60 & 90 MINUTE RATED

NFPA 80, Fire doors and Windows, 1995 Edition, requires that all fire doors and frames be prepared under an inspection service.

1. All components of an opening must have a certification label or certification mark to identify as a fire rated component. This identification **MUST** be applied at the point of manufacture or at an authorized machining distributor. **FIELD LABELING OF ANY COMPONENT BY ANYONE OTHER THAN THE INSPECTION AGENCY SHALL VOID THE LABEL.**
2. The lowest rating of any component determines the rating for the total assembly. (I.e. if a 1-hour door is installed in a 20-minute frame, the maximum rating for the total assembly would be 20 minutes.)
3. The clearance between the door and the frame and between meeting edges of doors swinging in pairs shall not exceed 1/8 inch. The clearance under the bottom of the door shall be as follows. Any trimming for height may be done on the bottom rail only (per NFPA 80, maximum trim of 3/4" - 19.0mm allowed on site.
  - 3.1 The clearance between the bottom of the door and a raised noncombustible sill shall not exceed 3/8".
  - 3.2 Where there is no sill, the clearance between the bottom of the door and the floor shall not exceed 3/4".
  - 3.3 The clearance between the bottom of the door and the rigid floor tile shall not exceed 5/8".
  - 3.4 The clearance between the bottom of the door and the nominal surface of floor covering shall not exceed 1/2".
4. Job site modification is restricted to the following.
  - 4.1 Function holes for mortise locks, and mounting holes for hardware not to exceed 1" in diameter.
  - 4.2 Holes for labeled viewers.
  - 4.3 Protection plates and preparation of surface mounted hardware.
  - 4.4 A maximum of 3/4" undercutting of **BOOK HEIGHT** doors.
  - 4.5 Pilot holes **MUST** be drilled for all screw applications.
5. Fire doors, with wood, particleboard, or mineral core are manufactured with the same size top and bottom rails, so that either end of the door can be the top. If there is an exception, the rails will be identified, and the top of the door must not be trimmed.
6. Positive pressure assemblies require the following.
  - 6.1 To qualify for smoke and draft assemblies (PER UBC STD 7-2 1997) the doors must have the secondary "S" label and be installed with listed gasketing that meets (UBC STD 7-2 1997 Part 2) for 20 Minute only.
  - 6.2 Approved intumescent smoke seals must be applied to the sides and top of the frame, and to the meeting edge of the inactive leaf of doors hung in pairs.
  - 6.3 See installation instructions provided with the approved intumescent smoke seals which are used.
7. Latch sets must have a minimum throw of 1/2" NFPA 80 Table 2-8.2.3 states that the latch throw for pairs must be 3/4". The minimum latch throw is stated on the certification label.
8. Hinges to be installed per NFPA 80 Table 2-8.1.1. Two hinges are required for a 60" high door and one additional hinge is required for each additional 30" or fraction thereof. The size and thickness of the hinges are covered in the table.
9. Closers attached to mineral composite or particle board core doors usually must be through bolted. An exception to this would be when the doors have been ordered with interior blocking that would permit the closures to be attached with screws.
10. When vision lights are installed in a fire door, the cutout must be done at the manufacturing facility or machining facility. Cutting the door for lights in the field is not allowed unless the preparation is performed under an inspection and labeling program. Only certified fire rated glass which is installed in approved frame shall be used. Only glazing labeled for fire may be used, and must be installed in accordance with their individual listing.
11. Fire doors equipped with automatic louvers shall be used only for protecting openings in required enclosures when the opening is not in a means of egress or otherwise located so that products of combustion flowing through the opening could jeopardize the use of exits prior to the operation of the louver. 20-minute fire rated doors are not permitted to have louvers.
12. Wrap around steel edges with an astragal must be applied to meeting edges of pairs, unless the certification label specifically states that they are not needed. 20-minute doors can usually be installed in pairs with metal steel meeting edges without an astragal. Steel meeting edges should be 18 or 20 gauge, with a minimum lap of 1". Attachment should be with 3/4" No. 8 screws, 12" on center. Mortise edge guards are not allowed unless included in the individual listing.
13. Certification labels are attached at the point of manufacturer or under an inspection service and **MUST NOT** be removed or replaced except by authorized representatives of the inspection agency. Labels will be applied on the hinge stile at eye level.

## FIRE DOOR INSTALLATION REQUIREMENTS

### INTUMESCENT LAYERED CORE 45, 60 & 90 MINUTE RATED

NFPA 80, Fire and Windows, 1999 Edition, requires that all fire doors and frames be prepared under an inspection service.

1. All components of an opening must have a certification label or certification mark to identify as a fire rated component. This identification **MUST** be applied at the point of manufacture or at an authorized machining distributor. **FIELD LABELING OF ANY COMPONENT BY ANYONE OTHER THAN THE INSPECTION AGENCY SHALL VOID THE LABEL.**
2. The lowest rating of any component determines the rating for the total assembly. (I.e. if a 1-hour door is installed in a 20-minute frame, the maximum rating for the total assembly would be 20 minutes.)
3. The clearance between the door and the frame and between meeting edges of doors swinging in pairs shall not exceed 1/8 inch. The clearance under the bottom of the door shall be as follows.
  - 3.1 The clearance between the bottom of the door and a raised noncombustible sill shall not exceed 3/8".
  - 3.2 Where there is no sill, the clearance between the bottom of the door and the floor shall not exceed 3/4".
  - 3.3 The clearance between the bottom of the door and the rigid floor tile shall not exceed 5/8".
  - 3.4 The clearance between the bottom of the door and the nominal surface of floor covering shall not exceed 1/2".
4. Job site modification is restricted to the following.
  - 4.1 Function holes for mortise locks, and mounting holes for hardware not to exceed 1" in diameter.
  - 4.2 Holes for labeled viewers.
  - 4.3 Protection plates and preparation of surface mounted hardware.
  - 4.4 Pilot holes **MUST** be drilled for all screw applications.
5. Positive pressure assemblies require the following.
  - 5.1 To qualify for smoke and draft assemblies (PER UBC STD 7-2 1997) the doors must have the secondary "S" label and be installed with listed gasketing that meets (UBC STD 7-2 1997 Part 2) for 45, 60 & 90 Minute only.
  - 5.2 Approved intumescent smoke seals must be applied to the sides and top of the frame, and to the meeting edge of the inactive leaf of doors hung in pairs.
  - 5.3 See installation instructions provided with the approved intumescent smoke seals which are used.
6. Latch sets must have a minimum throw of 1/2" NFPA 80 Table 2-8.2.3 states that the latch throw for pairs must be 3/4". The minimum latch throw is stated on the certification label.
7. **It is mandatory that hinges be installed per these instructions. 6/8 and 7/0 in height must be installed with three minimum and doors over 7/0 in height must have four minimum. Hinges must be 4-1/2" x 4-1/2" heavy weight, .180 depth, and 2" x #12 wood screws used. All 90 minute Intumescent layered core doors will have hinge screw pilot holes drilled at the factory.**
8. Certification labels are attached at the point of manufacturer and **MUST NOT** be removed or replaced except by authorized representatives of the inspection agency. Labels will be applied on the hinge stile at eye level.
9. **Millennium 90 minute (Intumescent layered core Core) doors are heavy. Please take the proper precautions when installing these doors. Extra help and care should be given do to the weight of the door.**