



# METAL DOOR LTD.

Manufacturers of Steel Doors and Frames

## Metal Door Ltd. 90 Minute Steel Fire Transom, Side Light Frames and Borrowed Lights

Pressed Steel Transom and/or Side Light Door Frame Assembly (12, 14, 16 gauge) for installation in and up to 90-minute locations in listed Steel/Wood Stud Drywall or Masonry wall openings.

Glazing Types: Listed 3/16” ceramic, Schott Pyran F, or FireLite®

Maximum Size of Assembly: 12’10” (3910 mm) wide x 10’8” (3250 mm) high.

### Maximum Allowed Door Sizes

*(Doors optional, assembly may be all individual glazing panes in sizes listed below – see ‘Maximum Glazing Sizes’)*

Single Swing Door with Side Light: 4’0” (1220 mm) x 9’0” (2743 mm)

Standard Pairs Door with Side Light: 8’0” (2440 mm) x 9’0” (2743 mm)

Double Egress Door with Side Light: Not Applicable

\*Doors over 8’0” (2440 mm) tall must use 2” (50 mm) face frame dimension.

### Maximum Glazing Sizes (Clear View)

|                           | <b>Max. Area</b> | <b>Max. Width</b> | <b>Max. Height</b> |
|---------------------------|------------------|-------------------|--------------------|
| 90 Minute Sidelight Frame | 2116 sq. in.     | 48” (1220 mm)     | 92” (2340 mm)      |
| 90 Minute Transom         | 2116 sq. in.     | 48” (1220 mm)     | 48” (1220 mm)      |

\*6” (152 mm) space between screws

\*18-gauge Glass Stops

### Borrowed Light

Maximum width clear view: 48” (1220 mm)

Maximum height clear view: 92” (2340 mm)

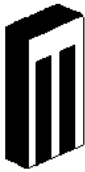
Must use framing limitations listed above.



Canadian Steel Door  
Manufacturers Association  
L'Association Canadienne  
Des Fabricants de Portes D'Acier


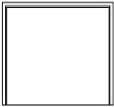
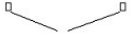
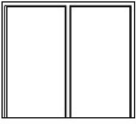
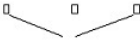

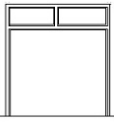
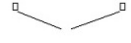
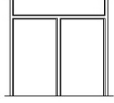
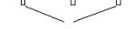


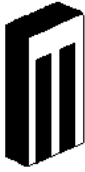
Toronto  
Construction  
Association  
Since 1867  
Proudly Supporting Member



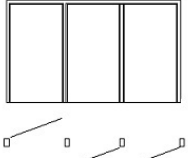
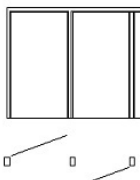
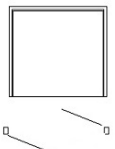
**METAL DOOR LTD.**  
 Manufacturers of Steel Doors and  
 Frames

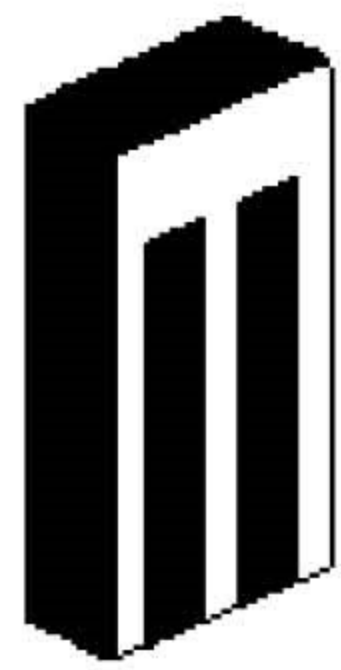
**Metal Door LTD. Fire Rated Frame Labelling Guide**

| ELEVATIONS  | MAX REBATE SIZE          |   | NOTES  | CONST.                        | RATING  |
|---|--------------------------|---|--|-------------------------------|---|
|   | SINGLE                   | DOUBLE  |  |                               |   |
|    | 42 X 86<br>(1067 X 2184) | 84 X 86<br>(2134 X 2184)  | THROAT SIZE 3 1/2" - 12"<br>(305MM)<br>FACE WIDTH 2"<br>DOUBLE REBATE  | DWKD                          | 1/3<br>3/4<br>1 1/2   |
| <br><br><br>   | 1220 X 3048              | 96 X 120<br>(2440 X 3048)<br><br>2 x 48 x 96<br>(2 x 1220 x 2440) | THROAT SIZE 3 1/2" - 12"<br>(305MM)<br>FACE WIDTH 1 1/4" - 4"<br>DOUBLE REBATE<br><br>THROAT SIZE 2 1/2" - 3 1/2"<br>FACE WIDTH 2 - 4"<br>SINGLE REBATE  | KD OR<br>WELDED<br><br>WELDED | 1/3 1 1/2<br>3/4 3<br><br>1/3 3<br>3/4 1 1/2                            |
| <br><br><br><br> | 48 x 96<br>(1220 x 2440) | 96 x 96<br>(2440 x 2440)<br><br>2 x 48 x 96<br>(2 x 1220 x 2440)  | MAX HEIGHT 120" (3050 mm)<br>PROFILE AS FRAMES<br><br>PANEL (IF REQUIRED)<br>TO BE MIN. 20 GA<br>STEEL<br>LAMINATED BOTH<br>SIDES OF 3/8 MARONITE<br>OR 5/8 DRYWALL OR 1<br>3/4 18 GA HOLLOW<br>STEEL<br><br>PROFILE AS ABOVE. | WELDED                        | WITH<br>GLASS<br>1/3<br>3/4<br><br>WITH<br>PANEL<br>1/3<br>3/4<br>1 1/2 |



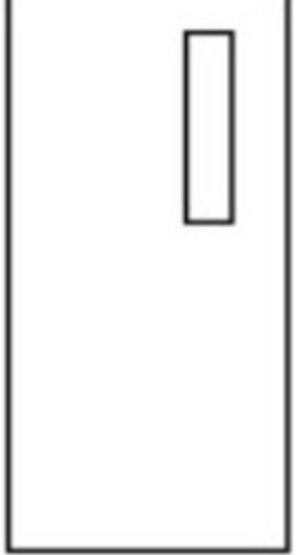
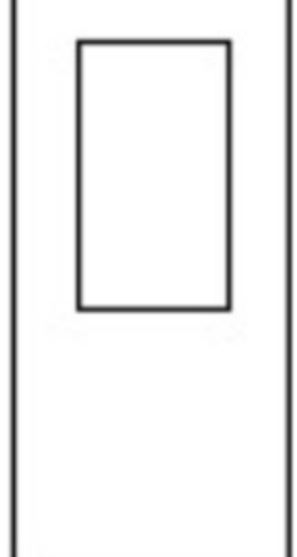


**METAL DOOR LTD.**  
 Manufacturers of Steel Doors and  
 Frames

|   |  |  |  |               |   |
|---|--|--|--|---------------|---|
|  <p>MULTI SWING</p>                  |  | <p>SEE SIZE<br/>         LIMITATIONS IN<br/>         NEXT COLUMN</p> | <p>MAX 4 DRS IN MULTI<br/>         OPENING FRAME</p> <p>MAX 2 DRS HINGED<br/>         FROM MULLION</p> <p>MAX OVERALL WIDTH<br/>         12'10" (3915 mm)</p> <p>MAX OVERALL HEIGHT<br/>         7'2" (2184mm)</p> <p>MAX DOOR SIZE 48 X 84<br/>         (1220 x 1220)</p> | <p>WELDED</p> | <p>1/3<br/>         3/4<br/>         1 1/2<br/>         3</p> |
|  <p>CONTRA SWING</p>                 |  | <p>96 X 96<br/>         (2438 X 2438)</p>                            | <p>THROAT SIZE 5" – 12"</p>  | <p>WELDED</p> | <p>1/3<br/>         3/4<br/>         1 1/2</p>                |
|  <p>DOUBLE<br/>         EGRESS</p> |  | <p>96 X 86<br/>         (2438 X 2184)</p>                            | <p>THROAT SIZE 4 3/4" – 12"</p>  | <p>WELDED</p> | <p>1 1/2<br/>         3/4</p>                                 |



**METAL DOOR LTD.**  
Manufacturers of Steel Doors and  
Frames

**Metal Door LTD. Fire Rated Door Labelling Guide**

| Door Gauge   | Door Const.   | Max. Size |                                 | Notes                          | Rating           |                   |
|--|---|-----------|---------------------------------|--------------------------------|------------------|-------------------|
|  |   | Single    | Pair                            |                                |                  |                   |
| <br>NL    | 18. 16.<br>14.  | H. S.     | 42 x 96<br>(1067 mm x 2438mm)   | 84 x 96<br>(2134 mm x 2438 mm) |                  | 3/4<br>1 1/2      |
|  | 20.   | H.C.      | 42 x 96<br>(1067 mm x 2438mm)   | 84 x 96<br>(2134 mm x 2438 mm) |                  | 3/4<br>1 1/2      |
| <br>G    | 18. 16.   | H.C.      | 48 x 96<br>(1219 mm x 2438mm)   | 96 x 96<br>(2438 mm x 2438 mm) |                  | 3/4<br>1 1/2<br>3 |
|  | 18.   | H.C.      | 48 x 106<br>(1219 mm x 2692 mm) | ---                            |                  | 3/4<br>1 1/2      |
| <br>LNL | 18.   | H.C.      | ---                             | 96 x 96<br>(2438 mm x 2438 mm) | Double<br>Egress | 3/4<br>1 1/2      |
|  | 20. 18.   | H.C.      | 48 x 96<br>(1219 mm x 2438 mm)  | 96 x 96<br>(2438 mm x 2438 mm) | Temp<br>Rise     | 1 1/2<br>3        |
| <br>FG  | *6" minimum stiles/ 8" minimum centre rail for 2G doors<br>*Smaller Stiles or Rails ULC label only<br>*For Temperature Rise please see Temperature Rise Labelling Limitations |           |                                 |                                |                  |                   |

**General Notes:**

Glazing

- 3 HR - No Glazing Permitted
- 1 1/2 - 100 sq. in. per door leaf  
Max height of exposed glass 33" (840mm); Max Width of Exposed Glass 10" (254mm)  
*\*Please see Pemko Door for more options*
- 3/4 - 1296 sq. in. per individual light  
Max Height or Width of Exposed Glass 54" (1370 mm)  
*\*Please see Pemko Door for more options*

Rebated Top Edge

Only on Single Doors  
Max Size 42" x 84" (1067mm x 2134mm)

Single doors over 106" (2692 mm) and pairs over 96" (2438mm) require 2- or 3-Point locks respectively for 1 1/2 HR rating.

Single doors and pairs over 96" (2438mm) 2- & 3-point locks respectively for 3 HR rating.



**METAL DOOR LTD.**  
Manufacturers of Steel Doors and  
Frames

**Metal Door LTD Pemko Door**

This Engineering Evaluation is to determine if additional vision kit qualifications are possible for the Metal LTD. 20 minute – 3-hour Intertek Fire Rated Hollow Metal Type Doors through utilizing both Pemko FG3000 and Listed Fire Rated Pilkington Glass, and which will also maintain compliance with UL 10b (2009), NFPA 252 (2008), and CAN4 S104 (1985).

Based on Intertek Fire Testing knowledge, in addition to Test Report 96NK21587 (November 1996), the following table was developed for steel door vision panels which incorporate Pemko Listed FG3000 FireGlaze Compound as well as Pilkington ¼” thick fire rated WireLite Polished Wired Glass, in Georgian or Diamond Patterns:

| APPLICATIONS             | FIRE RATING | MAXIMUM CLEARVIEW SIZES       |             |              | STOP HEIGHT (in) |
|--------------------------|-------------|-------------------------------|-------------|--------------|------------------|
|                          |             | TOTAL AREA (in <sup>2</sup> ) | WIDTH (in)  | HEIGHT (in)  |                  |
| Steel Door Vision Panels | 20 min.     | 2856                          | 34 (864 mm) | 84 (2134 mm) | 0.625 (16 mm)    |
|                          | 45 min.     | 2856                          | 34 (864 mm) | 84 (2134 mm) | 0.625 (16 mm)    |
|                          | 60 min.     | 552*                          | 12 (305 mm) | 46 (1168 mm) | 0.625 (16 mm)    |
|                          | 90 min.     | 552*                          | 12 (305 mm) | 46 (1168 mm) | 0.625 (16 mm)    |

\*552 sq. in. maximum lite size; 902 sq. in. maximum 2 lite size.

The limitations noted in the table above are not valid for fire ratings exceeding 90 minutes; therefore, these glazing limitations shall be restricted to the Metal Door LTD. designs up to a 90-minute fire rating. Additionally, the limitations noted in the table above are meant for fire rated swinging flush doors only and therefore the Metal Door LTD. Dutch Door design does not apply.

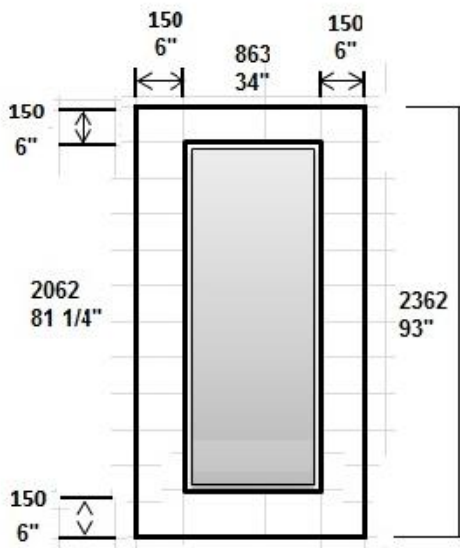
Therefore, extending the vision kit limitations for the Metal Door LTD. Intertek Fire Rated Designs will not have a negative affect on fire resistance (not exceeding 90-minute fire rating) provided the notes below:

- This evaluation pertains to fire resistance only
- Pemko Listed FG3000 FireGlaze Compound must be used with the size limitations noted in the table above.

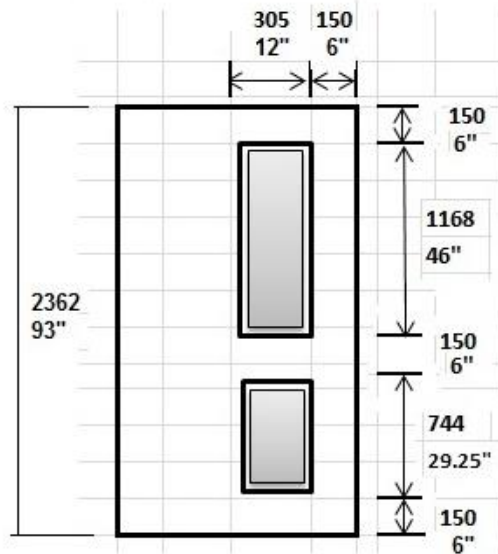


**METAL DOOR LTD.**  
Manufacturers of Steel Doors and  
Frames

- Pilkington ¼” thick listed fire rated WireLite Polished Wired Glass with Georgian or Diamond Patterns or listed fire rated ¼” thick FireLite ceramic glazing must be used with the size limitations noted in the table above.
- A listed and labelled fire rated metal vision kit must be used with the size limitations noted in the table above.



Maximum Dimensions allowable at 3/4 Hour Full Lite Door.



Maximum Dimensions allowable at 3/4 Hour 2 lite door.  
Windows can not exceed 902 sq"

Maximum Dimensions allowable at  
1 1/2 Fire rated Door 305mm(12") x 1168mm (46")  
or 552 sq inches



# METAL DOOR LTD.

Manufacturers of Steel Doors and Frames

## Adding PEMKO FireGlaze FG3000S45 Listing to your Fire Door/Frame/Sidelite/Screen/Fire Window Listing for Increased glazing Sizes

The PEMKO Listing requires a pressed steel frame, 16-gauge, minimum overall depth of 5-3/4 in. with 5/8 in. minimum stop depth. The removable stop shall be 16-gauge inverted U-channel, 5/8 in. width by 5/8 in. in depth, fastened using screws. The maximum screen size shall equal the individual manufacturers Listing.

The Listed wire glass (Pilkington, Asahi, and Central Glass) or Firelite™ shall be 1/4 in. thickness. The maximum lite sizes are 4,704 square inches per lite, with a maximum dimension (horizontal or vertical) of 106 in.

The Metal Door LTD. Fully welded 16-gauge Fire Door Frame with Sidelite or Transom or Screen is constructed as described above, with minimum 16-gauge 5/8 in. stop, maximum assembly width 12' (3660 mm), and maximum assembly height 10' (3050 mm) and is consequently eligible for the increases glazing sizes as per the PEMKO FireGlaze FG3000S45 Listing.

Your Listing shall be revised to add the following information:

|  |   |
|--|---|
| Maximum Glass Area   | 4,704 sq. in. per lite*                   |
| Maximum Dimension  | 106 in. (2692 mm) horizontal or vertical* |
| Requires PEMKO FireGlaze FG3000S45 glazing tape with 1/4 in. Listed Wired Glass or Firelite™ |   |



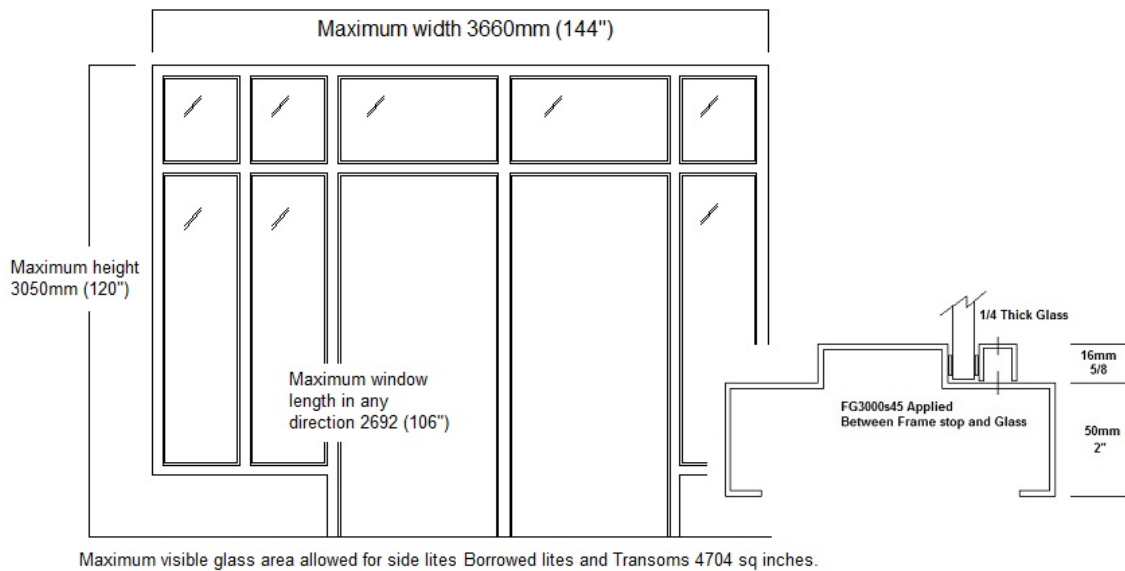
**METAL DOOR LTD.**  
Manufacturers of Steel Doors and  
Frames

**METAL DOOR PEMKO SCREEN**

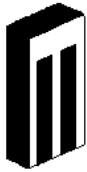
Technical Data for 20 Minute and 45 Minute Hollow Metal Screens with FG3000S45

- Must be manufactured by companies which are classified by Underwriters Laboratories Inc.® for the manufacturing and labeling of hollow metal fire doors and frames. Warnock Hersey (I.T.S.) listings are also available through participating hollow metal manufacturers.
- Frames are restricted to a minimum of 16 gauge with 5/8" high stops and 18-gauge glazing beads with #8 fasteners at 9" maximum centers.
- Listed glazing products include: **(Wire Glazing)** Pilkington, Asahi, and Central Glass. **(Non-Wire Glazing)** FireLite™.

**Note #1:** All vision lite kits must be listed fire door glass frames, packaged with FG3000S45 or FG3000S90.

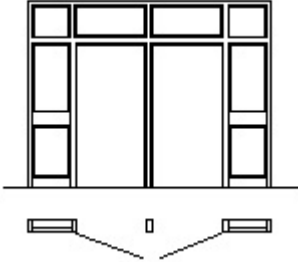
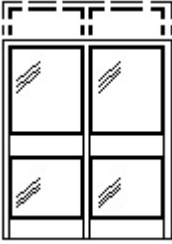






**METAL DOOR LTD.**  
 Manufacturers of Steel Doors and  
 Frames

**Metal Door LTD. Fire Rated Screen Labelling Guide**

| ELEVATIONS  | WITHOUT DOOR  | WITH DOOR   | CONST. | RATING |
|---|---|---|--------|--------|
|    |   | <p>MASONRY MAX<br/>           SCREEN OVERALL<br/>           120" x 144" (3050 x 3660)<br/>           MASONRY MAX<br/>           WINDOW DIMENSION<br/>           40" x 32" (1016 x 813 OR<br/>           1280 sq. in.)</p> <p>DRYWALL MAX<br/>           SCREEN OVERALL<br/>           120" x 96" (3050 x 2440)<br/>           DRYWALL MAX<br/>           WINDOW DIMENSIONS<br/>           30" x 32" (785 x 813 OR<br/>           980 sq. in.)</p> | WELDED | 3/4    |
|  | <p>MASONRY MAX<br/>           SCREEN OVERALL<br/>           120" x 84" (3050 x 2135)<br/>           MASONRY MAX<br/>           WINDOW DIMENSION<br/>           40" x 32" (1016 x 813 OR<br/>           1280 sq. in.)</p> <p>DRYWALL MAX<br/>           SCREEN OVERALL<br/>           72" x 60" (1830 x 1525)<br/>           DRYWALL MAX<br/>           WINDOW DIMENSIONS<br/>           30" x 32" (785 x 813 OR<br/>           980 sq. in.)</p> |   | WELDED | 3/4    |

FOR LARGER OR 90 MINUTE SCREEN OPTIONS SEE THE  
 SCREEN LIMITATIONS ON THEIR SEPARATE INFORMATION PAGE.

[www.metaldoorltd.com](http://www.metaldoorltd.com)



## METAL DOOR LTD.

Manufacturers of Steel Doors and Frames

### Temperature Rise Door Core (Pyrophobic Systems)

#### **Core Specifications:**

Size: 80" (2032 mm) (H) x 33<sup>1/2</sup>" (850 mm) (W)

Density: 21 – 28 lbs per cubic foot. Average 25lb/ft<sup>3</sup>.

Weight: 54 – 72 lbs/core (pallet of 40 cores each). Average 64 lbs/core

Colour: Pink

Thickness: 1 – 21/32"

Tensile Strength: 150 psi

Characteristics:

- Inorganic based composite core
- Fibreglass sheeting on both sides
- Maximum 3 joined pieces per door
- Available in sheets of up to 80" in length.

#### **Labelling:**

Listed by Warnock Hersey for single (up to 4' (1220 mm) x 8' (2440 mm)), double (up to 8' (2440 mm) x 8' (2440 mm)) and double egress (up to 8' (2440 mm) x 8' (2440 mm)).

#### **Door Specifications:**

(The following specifications are required for Warnock Hersey (WH) listing.)

#### **Fire Door:**

- Hollow Metal Temperature Rise Doors for Installation at 1 – 1/2 hour locations.

#### **Temperature Rise:**

- 250 ° C @ 30 mins, 250 ° C @ 60 mins

#### **Size:**

- Single: up to 4' (1220 mm) x 8' (2440 mm) high  
Standard Pairs: up to 8' (2440 mm) x 8' (2440 mm) high; astragal required
- Double Egress Pairs: up to 8' (2440 mm) x 7'2" (2195 mm) high, vertical rods, fire exit hardware required
- Double Egress Pairs: up to 8' (2440 mm) x 8' (2440 mm) high, vertical rods, fire exit hardware and astragal required.

#### **Thickness:**

- 1-3/4"



Canadian Steel Door  
Manufacturers Association  
L'Association Canadienne  
Des Fabricants de Portes D'Acier



Toronto  
Construction  
Association  
Since 1987  
Proudly Supporting Member



## METAL DOOR LTD.

Manufacturers of Steel Doors and Frames

### Door Specifications Continued:

#### Skins:

- Flush, 20 gauge minimum to 16 gauge maximum

#### Core:

- Pyrophobic Pyrocore bearing a WH ink stamp on each core, maximum 3 pieces per core.  
(9" vertical joint, 7" horizontal joint)
- P250C-60 for Canada: 250 ° C @ 60 minutes.

#### Adhesive:

- Rubber contact adhesive solvent or water base or two-part epoxy.

#### Vision Panels:

- 100 sq. in. maximum, 5" x 20" or 10" x 10" listed glazing material.

#### Astragal:

- Blank, ASA or ASA/Flush Bolts or flat bar type 14 gauge

#### Hardware:

- Hinges: Ball bearing hinges per NFPA 80 or listed spring hinges, or continuous hinges.
- Latches: Listed cylindrical latch ½" throw, listed mortise latch ¾" throw.



Canadian Steel Door  
Manufacturers Association  
L'Association Canadienne  
Des Fabricants de Portes D'Acier



Toronto  
Construction  
Association  
Since 1987  
Proudly Supporting Member



**METAL DOOR LTD.**  
Manufacturers of Steel Doors and Frames

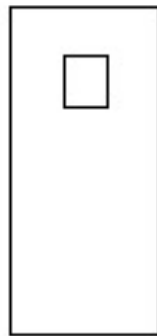
## Temperature Rise Doors

Buildings over three stories in height require temperature rise rated doors in the following applications:

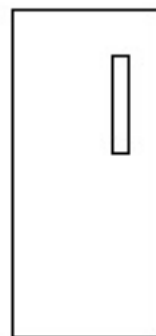
1. A fire exit enclosure without vestibule condition with a minimum required fire rating of 45 minutes must be provided with a temperature rise limit of **250 degrees Celsius at 30 minutes** (heat transfer to be limited to a maximum 250 degrees for a duration of 30 minutes).
2. A fire exit enclosure without vestibule condition with a minimum required fire rating of 90 minutes must be provided with a temperature rise limit of **250 degrees Celsius at 60 minutes** (heat transfer to be limited to a maximum 250 degrees for a duration of 60 minutes).

The Code specifies that door lites may not exceed 645 square centimeters (approx. 100 square inches).

At the 250 degrees Celsius at 60-minute limit, sizing is restricted to a maximum width of 1220 mm (approx. 48”) and a maximum height of 2440 mm (approx. 96”).



VL (TEMP RISE)



NL (TEMP RISE)



Canadian Steel Door  
Manufacturers Association  
L'Association Canadienne  
Des Fabricants de Portes D'Acier

