



**HOLLOW METAL FIRE DOORS
FIRE DOOR FRAMES AND TRANSOM FRAMES
FIRE WINDOWS AND SIDELIGHT FRAMES**

**UNDERWRITERS LABORATORIES INCORPORATED
UNDERWRITERS LABORATORIES OF CANADA
WARNOCK HERSEY PROFESSIONAL SERVICES LTD
FACTORY MUTUAL RESEARCH**

Fleming
Building on Quality / ■■■■■■■■■■

S.W. FLEMING LIMITED

FIRE LABELLING SPECIFICATIONS

INTRODUCTION

Fleming's Fire Labelling Specification is intended to assist design, specification and related professionals involved in commercial, industrial, institutional and detention security construction throughout North America by providing a definitive source of information regarding fire labelled steel door and frame products. The information contained in this publication has been compiled from Testing Authority Listings, Procedures and Policies, NFPA-80, NFPA-101, and Industry or National Standards.

This publication has been formatted by recognized product groups: hollow metal fire doors, frames, transom frames, sidelight and window assemblies. Each group is further detailed by hourly rating. From the applicable building code, determine the required rating, locate the appropriate category and select the gauge/series/construction best suited.

The determination, specification and scheduling of Fire Protection (including Temperature Rise Ratings where applicable) are the responsibility of the Architect/Designer. Interpretation and enforcement of Building Code and By-Law requirements are by the Authority Having Jurisdiction.

All sizes referenced in this document are nominal. Imperial (inch-pound) values are dominant, followed by the hard metric (millimeter-gram) counter-part in parenthesis. Imperial and metric sizes may not be equal.

Users are encouraged to direct any inquiries relating to the application or fire labelling of S. W. Fleming Limited's products to our Technical Services Department, Toronto, or your local authorized Fleming Labelling Distributor. Additional copies are available by completing and returning the Reader Response Card provided. Comments or suggestions regarding this publication are greatly appreciated.

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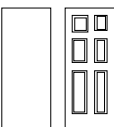
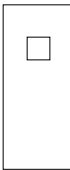
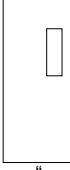
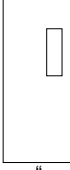


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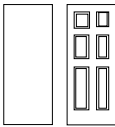
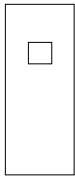
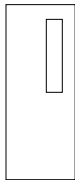
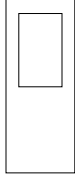
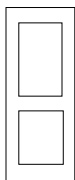
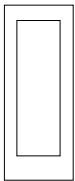
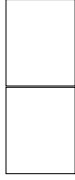
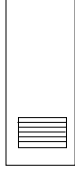
FLEMING DOOR SERIES DESCRIPTIONS

D-Series	Lock Seam, Honeycomb, Polystyrene or Polyisocyanurate Core Door
DSS-Series	Lock Seam, Honeycomb Core, Stainless Steel Door
E-Series	Lock Seam, Honeycomb or Polystyrene Core, Embossed Door
H-Series	Fully Welded, Welded Vertical Steel Stiffeners and Fiberglass Core Door
LD-Series	Lock Seam, Lead-Lined Composite Core Door
S-Series	Fully Welded, Welded Vertical Steel Stiffeners and Fiberglass Core, Detention Security Door
SD-Series	Lock Seam, Composite Sound Core, Acoustic Door
TRR-Series	Lock Seam, Temperature Rise Rated Core Door
Z-Series	Lock Seam, Laminated Vertical Steel Stiffeners and Fiberglass Core Door

ABBREVIATIONS

AHJ	Authority Having Jurisdiction	KD	Knocked-Down
C/S	Contra-Swing	LD	Lead-Lined Door
CSA	Combination Stud Anchor	O/A	Over All
D/E	Double Egress	PS	Polystyrene Core
DSS	Stainless Steel D-Series Door	SD	Acoustic Door
DW	Drywall	SF	Acoustic Frame
EWA	Existing Wall Anchor	SSA	Steel Stud Anchor
FED	Fire Exit Device	STC	Sound Transmission Class
FM	Factory Mutual Research	SUW	Set-Up and Welded
GPW [®]	Georgian Polished Wire Glass	SWF	S. W. Fleming Limited
GWB	Gypsum Wall Board	TRR	Temperature Rise Rated
GWG	Georgian Wired Glass	UL	Underwriters Laboratories (US)
HC	Honeycomb Core	ULC	Underwriters Laboratories (Canada)
IPLP	In-Plant Labelling Program	WH	Warnock Hersey
JD	Jamb Depth		

FIRE RATINGS	ELEVATION TYPE	SERIES GAUGE	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 4 and 5)	
3 Hour	 "M"	H14	48" x 120" (1250 x 3050) Singles	Standard	<p>THE FOLLOWING NOTES APPLY TO ALL 3 HOUR LABELLED DOORS REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - 3 point lock preparation required on all UL and ULC H-Series doors over 96" (2450mm) rabbet height and inactive leaf of pairs requiring 3 point lock must have 2 point lock prep - WH H-Series doors over 96" (2450mm) rabbet height are not available - 4-1/2" (114mm) heavy weight hinges required on all doors over 96" (2450mm) height - Astragal required on all pairs of 3 hour doors - Glazing is not permitted in 3 hour ULC or FM labelled doors. GWG is not permitted in 3 hour UL or WH labelled doors. See Page 4, items 23 to 37 for additional information - UL & WH 'Listed' non-wired glazing materials with SWF glazing trims are permitted in 3 hr doors when acceptable to the AHJ. Refer to Glazing Manufacturer's listings for limitations - All D and E-Series doors are available with honeycomb or polystyrene insulated cores - H, Z and S-Series doors not FM listed. D20 and E-Series drs avail with WH label only 	
		H16	96" x 120" (2450 x 3050) Pairs			
	 "V"	D16	48" x 96" (1250 x 2450) Singles	Standard (IPLP)		
		D18 D20 E18 E20 Z16 Z18	96" x 96" (2450 x 2450) Pairs			
	 "NL"	S12	42" x 86" (1100 x 2200) Singles	Detention Security	- For use with SWF SF-Series (detention security) frames only - Refer to Page 5, items 110 to 117 for additional information	
		S14				
1-1/2 Hour	 "M"	H14	48" x 120" (1250 x 3050) Singles	Standard	<p>THE FOLLOWING NOTES APPLY TO ALL 1-1/2 HOUR AND 1 HOUR LABELLED DOORS REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - 3 point lock preparation required on all UL and ULC H-Series doors over 96" (2450mm) rabbet height and inactive leaf of pairs requiring 3 point lock must have 2 point lock prep - D20 and E20 doors over 42" x 86" (1100mm x 2200mm) singles or 72" x 86" (1850mm x 2200mm) pairs are available with WH label only - UL, ULC and FM D16, D18, E18 and Z-Series; WH D, E and Z-Series 'Standard' doors with single point locks are permitted up to 48" x 120" (1250mm x 3050mm) singles and 96" x 96" (2450 x 2450mm) pairs when lock edge seams are tack welded - Open back strikes are permitted. See Page 4, item 12 for additional information - Astragals are required on all pairs but may be omitted when the requirements listed on Page 4, items 18 to 21 are met - Maximum area of exposed glass in 1-1/2 and 1 hour doors; 432 in² (.28m²) per leaf (qty of lights per leaf is not limited); 12" (305mm) exposed width; and 36" (915mm) exposed height with Pilkington 'Listed' 6mmGPW glass and Penko FG-3000 glazing compound. Unless 'Listed' otherwise, all other GWG is restricted to; 100 in² (.06m²) exposed area (qty of lights per leaf is not limited); 12" (305mm) exposed width; or 33" (840mm) exposed height. See Page 4, items 23 to 37 for additional information - All D and E-Series doors are available with honeycomb or polystyrene insulated cores - Louvres are permitted in; all ULC doors; UL and WH D18, D20 and Z18 Series non-lited doors. See Page 4, items 59 to 67 for additional information - All 'Standard' D, E and Z-Series are permitted in 'Multi-Opening' and 'Contra-Swing' units 	
		H16	96" x 120" (2450 x 3050) Pairs			
		D16	48" x 120" (1250 x 3050) Singles	Standard (IPLP)		
		D18				
	 "V"	D20	96" x 96" (2450 x 2450) Pairs			- Top leaf may latch into either the strike jamb or the bottom leaf. Bottom leaf must latch into strike jamb. See Page 5, items 79 to 84 for additional information - D20 dutch doors are available with WH label only. E-Series dutch doors are not available
		E18				
		E20				
		 "NL"	Z16	42" x 86" (1100 x 2200) Singles		Dutch Doors (IPLP)
			Z18	96" x 96" (2450 x 2450) Pairs		Double Egress (IPLP)
	1 Hour	 "NL"	H14 H16 D16 D18 D20 Z16 Z18	48" x 96" (1250 x 2450) Singles 96" x 96" (2450 x 2450) Pairs		Clad Doors
D18 E18 Z18			48" x 112" (1250 x 2850) Singles	Doors with Rabbetted Top Cap	- Minimum door top cap rabbet = 3/4" (19mm) - For use with SWF fixed or removable rabbetted hollow metal panel above door (no transom mullion) only - Maximum panel height = 32" (815mm) and area not to exceed 1344 in ² (.87m ²) - Minimum panel height = 6" (150mm) - Pairs not permitted - See Page 12, items 104 to 114 for additional information on panels	
D20 E20		42" x 86" (1100 x 2200) Singles				
 "DD"		DSS18	44" x 86" (1120 x 2200) Singles	Stainless Steel	- Stainless steel is available in all Types (except 302) and all Finishes (except 2B) with acid etched patterns, logo's, etc, permitted - Glass lights are not permitted. See Page 5, items 74 to 78 for additional information	
		SD16	48" x 86" (1250 x 2200) 36" x 96" (950 x 2450) Singles	Acoustic	- Maximum STC rating = 46 - Each leaf is supplied with SWF surface mounted automatic door bottom - Acoustic and steel flat bar astragals are required on all pairs - See Page 5, items 92 to 103 for additional information	
		LD16	72" x 96" (1850 x 2450) Pairs	Lead-Lined	- Composite lead/steel flat bar astragal required on all pairs - Fire exit hardware or glass lights are not permitted - See Page 5, items 104 to 109 for additional information	
	TRR16 TRR18	42" x 86" (1100 x 2200) 36" x 96" (950 x 2450) Singles 96" x 96" (2450 x 2450) Pairs	Temperature Rise Rated	- UL, ULC and WH Temperature Rise Ratings available include 250°F (120°C) at 1/2 hour, 450°F (250°C) at 1/2 hour or 1 hour, and 650°F (340°C) at 1/2 hour - 1 hour fire endurance rating TRR doors are not recognized by UL, ULC or WH - Solid asbestos free core system - Also available in 'Double Egress' and 'Clad' construction doors - For use in all SWF 'Standard', 'Double Egress', 'Contra-Swing' and 'Multi-Opening' construction frames - See Page 4, items 53 to 58 for additional information		
	 "L"	S12 S14	42" x 86" (1100 x 2200) Singles	Detention Security	- For use with SWF SF-Series (detention security) frames only - See Page 5, items 110 to 117 for additional information	

FIRE RATINGS	ELEVATION TYPE	SERIES GAUGE	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 4 and 5)	
3/4 Hour	 "M"	H14	48" x 120" (1250 x 3050) Singles	Standard	<p>THE FOLLOWING NOTES APPLY TO ALL 3/4, 1/2 and 1/3 HOUR LABELLED DOORS REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - 3 point lock preparation required on all UL and ULC H-Series doors over 96" (2450mm) rabbet height and inactive leaf of pairs requiring 3 point lock must have 2 point lock prep - WH H-Series doors over 96" (2450mm) rabbet height are not available - D20 and E20 doors over 42" x 86" (1100mm x 2200mm) singles or 72" x 86" (1850mm x 2200mm) pairs are available with WH label only - UL, ULC and FM D16, D18, E18 and Z-Series; WH D, E and Z-Series 'Standard' doors with single point locks are permitted up to; 48" x 120" (1250mm x 3050mm) singles; 96" x 108" (2450mm x 2750mm) pairs when lock edge seams are tack welded - Open back strikes are permitted. See Page 4, item 12 for additional information - 41/2" (114mm) heavy weight hinges required on all doors over 96" (2450mm) height - Astragals are required on all pairs but may be omitted when the requirements listed on Page 4, items 18 to 21 are met - Maximum area of exposed glass in all 3/4, 1/2 and 1/3 hour doors (except 'Double Egress' and 'Clad' construction) is 2856 in² (1.84m²) per light (qty of lights per leaf is not limited); width not exceeding 34" (835mm); and height not exceeding 84" (2135mm) with Pilkington 6mm GPW glass and Pemko FG-3000 glazing compound. Unless "Listed" otherwise, all other GWG is restricted to 1296 in² (.84m²) per light (qty of lights per leaf is not limited); with neither the exposed width nor height exceeding 54" (1370mm). See Page 4, items 23 to 37 for additional information. - All D and E-Series doors are available with honeycomb or polystyrene insulated cores - Louvres are permitted in; all ULC doors; UL and WH D18, D20 and Z18 non-lighted doors. See Page 4, items 59 to 67 for additional information - All 'Standard' construction D, E and Z-Series doors and ULC H-Series doors are permitted in 'Multi-Opening' and 'Contra-Swing' units. - H, Z and S-Series doors are not FM listed 	
		H16	96" x 120" (2450 x 3050) Pairs			
	 "V"	D16	48" x 120" (1250 x 3050) Singles	Standard (IPLP)		
		D18				
		D20	96" x 108" (2450 x 2750) Pairs			
		E18				
	 "NL"	E20	42" x 86" (1100 x 2200) Singles	Dutch Doors (IPLP)		
		Z16				
		Z18	96" x 96" (2450 x 2450) Pairs			
	1/2 Hour	 "G"	H14 H16 D16 D18 D20 Z16 Z18	48" x 96" (1250 x 2450) Singles 96" x 96" (2450 x 2450) Pairs		Clad Doors
D18 E18 Z18			48" x 112" (1250 x 2850) Singles	Doors with Rabbetted Top Cap		
D20 E20		42" x 86" (1100 x 2200) Singles				
1/3 Hour		 "2G"	DSS18	44" x 86" (1120 x 2200) Singles	Stainless Steel	
			SD16	48" x 86" (1250 x 2200) or 36" x 96" (950 x 2450) Singles		Acoustic Doors
		 "FG"	LD16	72" x 96" (1850 x 2450) Pairs	Lead-Lined	
			 "DD"	TRR16 TRR18		42" x 86" (1100 x 2200) or 36" x 96" (950 x 2450) Singles 96" x 96" (2450 x 2450) Pairs
		 "L"		S12 S14	42" x 86" (1100 x 2200) Singles	Detention Security

FIRE DOOR SPECIFICATIONS AND REQUIREMENTS *1 (Back Cover)

A) HARDWARE REQUIREMENTS

1. All labeled fire doors must be prepared for UL, ULC, WH or FM hardware 'Listed' or 'Classified' for Fire Protection. Refer to Testing Authority listings for limitations on individual Hardware Manufacturer's products.

Hinges

2. 1 pair of hinges required on all doors up to 60" (1525mm) rabbet height and 1 additional hinge for each additional 30" (760mm) or fraction of thereof. 4-1/2" (114mm) standard weight hinges minimum up to 96" (2450mm) rabbet height; 4-1/2" (114mm) heavy weight hinges (minimum) required over 96" (2450mm) rabbet height and for S, SD and LD-Series doors.
3. Also permitted are continuous, surface, olive knuckle, paumelle type, pivots and spring hinges.
4. Hinges or pivots, other than ball bearing type, are permitted if they meet the requirements of ANSI A156.1, Standard for Butts and Hinges.

Self-Latching Devices and Strikes

5. Includes; single; 2 and 3 point locks/latches; or fire exit devices (rim or mortised, surface or concealed vertical rod types).
6. Single point latches are permitted up to; 48" x 96" (1250 x 2450mm) singles; and 96" x 96" (2450 x 2450mm) pairs; up to and including 3 hour fire rating.
7. UL, ULC and FM D16, D18, E18 and Z-Series and WH D, E and Z-Series 'Standard' construction doors with single point latches are permitted up to; 48" x 120" (1250 x 3050mm) 1-1/2 hour singles; 96" x 96" (2450 x 2450mm) 1-1/2 hour pairs; and 96" x 108" (2450 x 2750mm) 3/4 hour pairs; when the lock edge seams are tack welded.
8. UL and ULC H-Series doors over 96" (2450mm) rabbet height require a 3 point lock preparation for single doors and the active leaf of pairs. The inactive leaf of pairs must be prepared for 2 point lock. Flush bolts are not permitted in lieu of the 2 point lock. WH H-Series doors over 96" (2450mm) height are not available.
9. Minimum latch throw for single point latches; 1/2" (12.7mm) for singles up to 96" (2450mm) height; 3/4" (19mm) for singles over 96" (2450mm); and for all pairs. Minimum latch throw for flush or surface bolts = 3/4" (19mm)
10. Inactive leaf of pairs must be prepared for a strike and either 'Listed/Classified' automatic/self-latching mortised top and bottom flush bolts or surface mounted top and bottom bolts. In lieu of strike and top and bottom bolts, doors may be prepared for vertical rod device (with or without bottom rod).
11. Rim type fire exit devices are restricted to 96" (2450mm) height
12. Open-back strikes are permitted on the inactive leaf of 'Standard' construction; UL and WH H and Z-Series doors; WH D and E-Series doors; UL and FM D16, D18 and E18 Series doors, all up to 96" x 96" (2450 x 2450mm) at 1-1/2 hour rating. Maximum height of edge cut-out for open back strike = 5-1/4" (133.4mm). Lock edge seam on both leaves of D and Z-Series doors with open-back strike must be tack welded
13. Electric strikes, 'Listed/Classified' for fire protection, are permitted in all SWF doors.
14. Dead bolts are permitted when; 'Listed/Classified'; interconnected with self-latching bolts; and retract when latch bolt is retracted. Dead bolts may also be provided in doors other than those in a means of egress when permitted by the AHJ

Self-Closing Devices

15. Includes; closers; combination closer/holders (surface or floor mounted, concealed or semi-concealed); and spring hinges.
16. Each leaf must have a self-closing device. Exceptions; dutch doors, where the closer is required on the top leaf only or; the inactive leaf of pairs in mechanical equipment rooms.
17. If floor closer (pivot), through bolt mounted closers or spring hinges are used, closer reinforcing in door is not mandatory. When spring hinges are used, minimum of 2 per leaf required.

Astragals

18. Astragals are required on; all pairs of 3 hour doors; all pairs over 96" (2450mm) rabbet height; pairs of D20 and E20 doors; all pairs of UL and WH H-Series doors; all dutch doors and; flush (non-rabbetted) panels above doors in frames without transom mullions.
19. Pairs of; D16, D18, E18 and Z-Series 'Standard' construction; UL and WH Clad or Stainless Steel doors; and ULC H-Series doors, are available (as an option when specified) without astragal. Pairs without astragal are restricted to 96" x 96" (2450 x 2450mm), 1-1/2 hour rating and lock edge seam of both leaves on D, E and Z-Series doors must be tack welded.
20. All astragals are shipped loose for installation by others. Standard flat bar type astragals on pairs are screw fixed to the front of the active leaf. Optional 'Z' astragals are screw fixed to the back of flush panels above doors. See item 81 below for requirements on dutch doors.
21. 'Listed/Classified' surface mounted neoprene/rubber type astragals are permitted in conjunction with steel astragals (where required) on all SWF doors up to 3 hour rating. Such astragals are supplied and installed by others.

Gaskets, Weather-Stripping and Door Seals

22. 'Listed/Classified' products are permitted on all SWF labeled doors up to; 48" x 120" (1250 x 3050mm) singles; and 96" x 120" (2450 x 3050mm) pairs; to 3 hour rating. Such products are supplied and installed by others.

B) GLAZING AND GLAZING TRIM SYSTEMS

23. Glazing materials are not supplied or installed by SWF
24. All UL and WH 'Listed/Classified' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications, are permitted in UL and WH labeled doors.
25. For UL, ULC and WH doors up to 3/4 hour rating, double glazed lights with 1 piece of 1/4" (6mm) GWG + 1 piece of 1/4" (6mm) tempered glazing are permitted.

26. FM doors require fixed single or multiple panes of 'Listed' 1/4" (6mm) thick GWG.
27. Where multiple panes of glazing material are used, they may not be laminated together nor be sealed (thermopane) type units. See item 114, below, for 'Detention Security' glazing options.
28. Only square or rectangular glass lights with SWF glazing trim systems are permitted in ULC or FM labeled doors.
29. Round, radiused, multi-sided, laminated or sealed assemblies are not permitted with SWF glazing trim systems.
30. All UL and WH 'Listed/Classified' glazing trim systems, approved for use in hollow metal fire doors, are permitted in UL and WH labeled doors.
31. Glazing is not permitted in; 3 hour ULC or FM doors; UL or WH dutch or louvered doors; or Stainless Steel doors.
32. In 3 hour doors, UL and WH 'Listed/Classified' non-wired glazing materials are permitted with SWF glazing trim systems, where acceptable to the AHJ. Maximum area of exposed glass in 3 hour doors; 100 in² (.06m²) per leaf with a maximum exposed width of 12" (305mm) or maximum exposed height of 33" (840mm)
33. For 1-1/2 hour and 1 hour doors maximum exposed glass sizes; 432 in² (.28m²) area per leaf (number of lights/leaf is not limited); maximum width of 12" (305mm) and maximum height of 36" (915mm) with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, exposed sizes for all other 1/4" GWG is limited to; 100 in² (.06m²) area per leaf (qty of lights per leaf is not limited); 12" (305m) width; or 33" (840mm) height
34. In 3/4, 1/2 and 1/3 hour doors maximum exposed glass sizes; 2856 in² (1.85m²) area per light (number of lights/leaf is not limited); width 34" (865mm); and height 84" (2135mm) with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, exposed sizes for all other 1/4" GWG is limited to; 1296 in² (.84m²) area per light (qty of lights/leaf is not limited); neither width nor height exceeding 54" (1370mm).
35. UL, WH and FM 'Double Egress' and 'Clad' construction 3/4, 1/2 and 1/3 hour doors are restricted to maximum exposed glass sizes of: 432 in² (.28m²) area per leaf (number of lights/leaf is not limited); width of 12" (305mm); and height of 36" (915mm) with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, exposed sizes for all other 1/4" GWG is limited to; 100 in² (.06m²) area per leaf (qty of lights per leaf is not limited); 12" (305m) width; or 33" (840mm) height
36. Glazing materials and glazing compounds used in 1-1/2 or 1 hour doors exceeding 100 in² (.06m²) exposed glass area or in 3/4, 1/2 or 1/3 hour doors exceeding 1296 in² (.84m²) exposed glass area must be expressly 'Listed/Classified' for the sizes indicated in items 33 to 35. Refer to Testing Authority listings for limitations on individual Glazing Material Manufacturers' products.
37. SWF snap-in steel glazing trim in lights exceeding exposed widths of 28-1/2" (725mm) or exposed heights of 34-1/2" (875mm) must have removable stops screw-fixed.

C) CORE MATERIALS

38. Kraft paper honeycomb or polystyrene are permitted as core materials for E and D-Series fire doors
39. Only kraft paper honeycomb is permitted in DSS-Series doors
40. Only fiberglass batt insulation with vertical stiffeners are permitted as core material for S, Z or H-Series fire doors
41. TRR, Lead-Lined and Acoustic construction doors utilize proprietary core materials to achieve their specific performance based requirements
42. Polyurethane, phenolic, polyisocyanurate or other insulative materials are not permitted in SWF labeled door constructions

D) MISCELLANEOUS RESTRICTIONS

43. Combustible facings or finishes other than paint, electroplating or SWF's UL/ULC/WH approved metal claddings are not permitted (ie : wood veneers, plastic, paper or fabric). Refer to items 82 to 88 below, for details of UL, ULC and WH approved claddings.
44. D, E and Z-Series doors are restricted to 1-3/4" (44.4mm) thickness. H-Series doors are available either 1-3/4" (44.4mm) or 2" (50.8mm) thick.
45. H-Series, Z-Series and S-Series doors are not FM 'Listed'
46. Standard hinge and lock edges are beveled 1/8" in 2" (3 in 50mm). Optional square hinge edge is permitted for surface mounted continuous hinges when required by hinge manufacturer's listings
47. Rabbetted or radiused/bullnosed lock or hinge edges are not permitted
48. Double acting doors are not permitted
49. Maximum undercut on all hollow metal fire doors is 3/4" (19mm) (see NFPA 80)
50. Minimum undercut on all hollow metal fire doors and recommended undercut on Acoustic doors is 1/4" (6mm)
51. Minimum recommended stile widths and center rail heights on lighted doors = 6" (150mm). Minimum recommended top rail height = 7" (180mm). Minimum recommended bottom rail height = 6-13/16" (175mm). No maximums are imposed for stile widths or rail heights
52. Top caps, when specified, must be fabricated from galvalneal steel. Vinyl top caps are not permitted in fire doors

E) OPTIONS AND CONSTRUCTIONS AVAILABLE

- Temperature Rise Rated (TRR) Doors**
53. Available in D16 and D18 Series, 'Standard', 'Double Egress' and 'Clad' construction doors, with a solid asbestos-free core system in lieu of kraft paper honeycomb or polystyrene
 54. Available with UL, ULC and WH labels
 55. Available ratings include; 1-1/2 hour fire endurance with TRR's of; 250°F (120°C) at 1/2 hour; 450°F (250°C) at 1/2 hour; 450°F (250°C) at 1 hour; and 650°F (340°C) at 1/2 hour; and 3/4 hour fire endurance with TRR's of; 250°F (120°C) at 1/2 hour; 450°F (250°C) at 1/2 hour; and 650°F (340°C) at 1/2 hour
 56. 1, 1/2 and 1/3 hour classifications are not recognized by UL, ULC or WH
 57. Maximum area of exposed glass; 100 in² (.06m²) per leaf
 58. TRR doors may be used in all 'Standard', 'Double Egress', 'Contra-Swing' and

FIRE DOOR SPECIFICATIONS AND REQUIREMENTS *1 (Back Cover)

'Multi-Opening' construction frames. TRR doors are not used in transom frames or sidelight assemblies

Louvers

- 59. Louvers must be UL, ULC or WH 'Listed' and must be installed as per the louver manufacturer's templates and/or installation instructions.
- 60. Louvers are permitted in; all ULC doors; and UL or WH D18, D20 and Z18 Series non-lighted doors. Louvers may be provided in; H14 and H16 doors up to 48" x 120" (1250 x 3050mm) singles, 96" x 120" (2450 x 3050mm) pairs to 1-1/2 hours; D16, D18 and Z-Series doors up to 48" x 120" (1250 x 3050mm) singles, 96" x 96" (2450 x 2450mm) pairs to 1-1/2 hours; 48" x 120" (1250 x 3050mm) singles. 96" x 108" (2450 x 2750mm) pairs to 3/4 hour; and D20 doors to 42" x 86" (1100 x 2200mm) singles, 72" x 86" (1850 x 2200mm) pairs up to 1-1/2 hours.
- 61. Louvers are not permitted in; Acoustic, Lead-Lined, Dutch, TRR or Stainless Steel doors; UL or WH doors with lights or fire exit devices; or FM doors
- 62. Louvers are permitted in ULC lighted doors
- 63. Louvers may be provided in only 1 leaf of UL and WH pairs
- 64. Louvers must be prepared for, supplied by and installed at the labeling factory
- 65. Maximum nominal louver size; 24" x 24" (610 x 610mm)
- 66. Minimum stile width; 5-27/32" (148mm), minimum bottom rail height; 8" (203mm) (actual front skin dimension)
- 67. No maximum stile widths or bottom rail heights are imposed

Double Egress (D/E) Doors

- 68. Restricted to vertical rod fire exit devices, surface or concealed types
- 69. Astragal not required but lock edge seam of both leafs must be tack welded and each leaf must be provided with internal lock edge channel
- 70. UL, WH and FM doors are restricted to maximum exposed glass sizes of; 432 in² (.28m²) area; width of 12" (305mm); and height of 36" (915mm) with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, exposed sizes for all other 1/4" GWG is limited to; 100 in² (.06m²) area; 12" (305mm) width; or 33" (840mm) height
- 71. D20 and E20 Double Egress doors are available with WH label only
- 72. UL, ULC and WH double egress doors are available with honeycomb, polystyrene or TRR cores
- 73. For use with SWF frames and UL, ULC or FM transom frames and sidelight assemblies

Stainless Steel (DSS-Series) Doors

- 74. Face sheets are fabricated from stainless steel in lieu of galvaneal
- 75. All Types (except 302) and all Finishes (except 2B), with acid etched patterns, logo's, etc., are permitted
- 76. Only honeycomb cores are permitted
- 77. Glass lights or louvers are not permitted
- 78. For use in 'Standard' or 'Stainless Steel' construction frames and transom frames

Dutch Doors

- 79. Top leaf may latch into either the strike jamb or the bottom leaf using a self-latching device. Bottom leaf must latch into strike jamb. Flush bolts are not permitted to latch top leaf into bottom leaf
- 80. Self closing device is required on top leaf only and spring hinges may be used as self closing device
- 81. Top leaf must be provided with steel astragal (supplied loose for site installation). Flat bar type required for dutch doors without shelf, special 'off-set' type required with shelf
- 82. Optional 8" (200mm) maximum deep shelf on 1 side of door only is permitted. Shelf and shelf support brackets are shipped loose for site installation by others
- 83. UL and WH dutch doors are restricted to non-lighted applications only
- 84. D20 dutch doors are available with WH label only

Clad Doors

- 85. Cladding is permitted on 1-3/4" (44.4mm) thick, 1-1/2 hour maximum; ULC D16, D18 and Z-Series singles; WH D, H and Z-Series singles; UL H, D and Z-Series singles and pairs
- 86. Cladding must be factory installed non-combustible material such as brass, bronze, aluminum or stainless steel (except Type 302), with a maximum thickness of 1/16" (1.6mm). Contact factory regarding eligibility of other materials.
- 87. Etched patterns, logo's, etc., are permitted
- 88. Cladding may be applied to the front and/or back of door
- 89. Maximum over-all door thickness (including cladding) is 1-7/8" (47.6mm)
- 90. Steel glazing trim is clad to match door (Exception; Stops and trim are fabricated from stainless steel for stainless steel clad doors)
- 91. Glass lights in all 'Clad' construction doors are restricted to maximum exposed glass sizes of; 432 in² (.28m²) area; width of 12" (305mm); and height of 36" (915mm) with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, exposed sizes for all other 1/4" GWG is limited to; 100 in² (.06m²) area; 12" (305mm) width; or 33" (840mm) height

Acoustic (SD-Series) Doors

- 92. Available in SD16 Series construction only utilizing SWF's proprietary sound attenuating core system
- 93. Maximum rating = STC 46 at 1-1/2, 3/4 or 1/3 hour fire rating
- 94. Each leaf supplied with SWF surface mounted, adjustable automatic door bottom.
- 95. Pairs of doors are supplied with SWF acoustic astragal surface mounted on the back of the inactive leaf and steel flat bar astragal for mounting on the front of the active leaf.
- 96. Automatic doors bottoms and astragals are shipped loose for installation on site by others.
- 97. Substitutions of other gasketing, door bottoms or astragals will void the STC rating as unit is tested as a complete assembly.
- 98. Each leaf must be prepared for 4-1/2" (114mm) heavy weight hinges (minimum)
- 99. Special back-set locks/latches are not required. Minimum back-set = 2-3/4" (69.9mm).
- 100. ASA/NL strike and flush bolts are required on the inactive leaf of all pairs
- 101. Minimum recommended undercut on Acoustic doors is 1/4" (6mm)
- 102. Fire exit devices or glass lights are not available in Acoustic doors
- 103. For use with SWF Acoustic Frames and gasketing system only.

Lead-Lined (LD-Series) Doors

- 104. Maximum fire rating = 1-1/2 hours
- 105. Lead lining is secured to the inside of the front (pull) face sheet and door edges. Available lead thickness range from 1/32" (0.8mm) minimum to 5/32" (4.0mm) maximum
- 106. Composite lead/steel flat bar astragal, shipped loose for installation on site by others, is required on all pairs
- 107. Each leaf must be prepared for 4-1/2" (114mm) heavy weight hinges (minimum)
- 108. Fire exit devices or glass lights are not available in lead-lined doors
- 109. For use with SUW 'Standard' construction frames only

Detention Security (S-Series) Doors

- 110. Maximum fire rating - 3 hours, negative or positive furnace pressure
- 111. Meets NAAMM HMMA 863-90 static load, impact load, rack and removable glazing stop test requirements
- 112. Doors may be prepared for all 'Listed/Classified' mortised, pocket or jamb mounted self latching devices
- 113. Detention Security doors are 2" (50.8mm) thick
- 114. UL and WH rated doors may utilize security glazing materials which have been 'Listed/Classified' for fire protection and for use in fire doors. Refer to Testing Authority listings for size and thickness limitations for individual glazing materials.
- 115. Unless stated otherwise in individual listings, exposed glass areas, widths and heights are as indicated in items 32 to 34, above.
- 116. Detention Security doors are not available with FM label
- 117. For use with SWF 'Detention Security' frames only

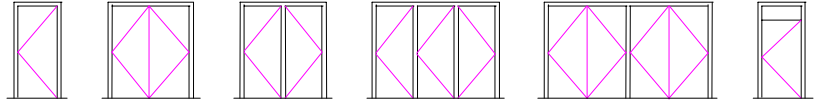
HANDING TERMINOLOGY

 Left Hand (L)	 Right Hand (R)	 Pair (PR)	 Right/Left (R/L)	 Contra-Swing - Right Hand (C/S R)
 Right Hand Reverse (RHR)	 Left Hand Reverse (LHR)	 Double Egress - Right Hand (D/E R)	 Right/Right (R/R)	 Contra-Swing - Left Hand (C/S L)
 Double Acting Single (D/A)	 Communicating Single (Com)	 Double Egress - Left Hand (D/E L)	 Left/Left (L/L)	 Double Acting Pair (D/A Pr)

FRAME PRODUCT DEFINITIONS (LABELLED AND NON-LABELLED)

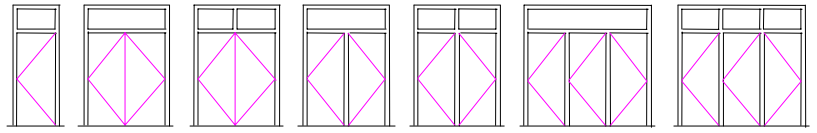
FRAMES

Grouped in this category are units which contain single or multiple door openings without horizontal transom mullions. Labels applied to these assemblies read: 'Fire Door Frame' and may optionally contain the wording 'With or Without Side and/or Transom Panels'. See Page 17 for applicable labels.



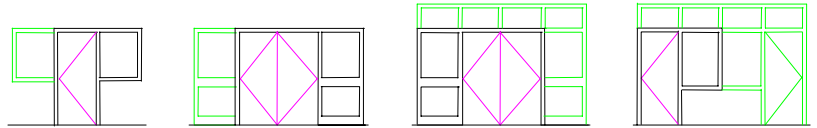
TRANSOM FRAMES

This category includes units which contain single or multiple doors with single or multiple openings above the doors and are separated from the doors by a horizontal mullion. The openings above the doors are called the 'transom'. Transoms may be filled with glazing, panels or louvers. Labels affixed to these assemblies indicate the filler material in the transom, such as 'Fire Door Frame for Transom Light' or 'Fire Door Frame with Transom Panel'. See Page 17 for applicable labels.



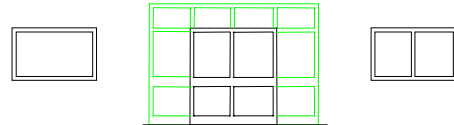
SIDELIGHT FRAMES

This category includes units which contain single or multiple doors with adjacent openings for glazing, panels or louvers, separated by vertical mullions. The openings for glazing, etc., are called 'sidelights'. These units may also incorporate single or multiple transoms. Labels applied to these assemblies read: 'Fire Door Frame for Lights' or 'Fire Door Frame With or Without Side and/or Transom Lights'. See Page 17 for applicable labels. A sidelight frame is considered as one unit regardless of the number of planes (sides) it contains, provided each corner is fabricated from pressed steel components.



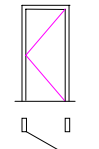
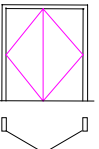
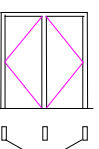
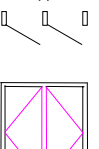
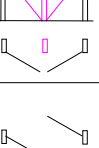
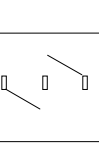
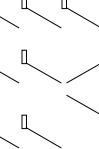
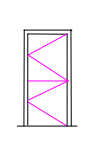
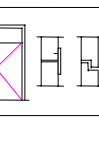
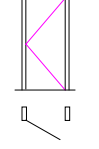
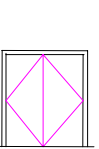
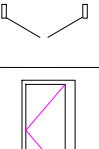

WINDOWS

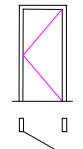
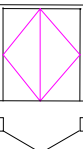
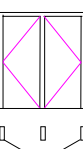
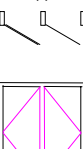
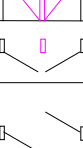
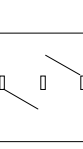
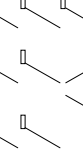
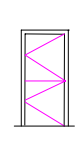
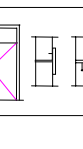
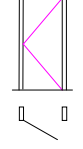
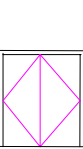
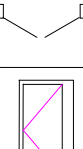

This group includes units which contain single or multiple openings for glazing and/or panels but not containing doors. Labels for these assemblies read: 'Fire Window Frame'. See Page 17 for applicable labels. A window assembly is considered as one unit regardless of the number of planes (sides) it contains, provided each corner is fabricated from pressed steel components. Windows which contain only one opening are also referred to as 'borrowed lights' or 'view windows'.



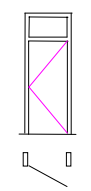
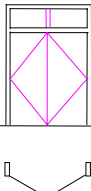
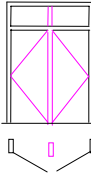
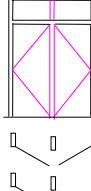
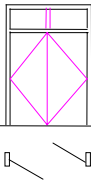
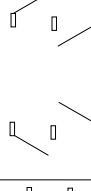
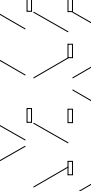
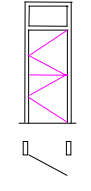
Some units described or illustrated above are not available as fire labelled product

FIRE RATING	ELEVATION PLAN	GAUGE SERIES	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (See Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 11 and 12)		
3 Hour		12 14 SUW 16	48" x 120" (1250 x 3050) Singles 96" x 120" (2450 x 3050) Pairs	Standard (IPLP)	THE FOLLOWING NOTES APPLY TO ALL 3 HOUR LABELLED FRAMES REGARDLESS OF CONSTRUCTION - For UL and ULC H-Series doors, 3 point lock preparation is required on frames over 96" (2450) rabbit height and the head of pairs must have 2 point lock prep - If doors are by others, hardware preparations in frame are as required by the door manufacturer's labeling procedures - Captive masonry fire anchors are required in all 3 hour labelled frames in masonry - See Page 11, items 11 to 16 for anchors in other partition types - Hollow metal removable mullions are not permitted in 3 hour frames - Doors may not be hinged off mullions in 3 hour frames - Combustible facings or finishes other than paint or electroplating are not permitted - Communicating, 4-sided and split (2 piece) frames are permitted. See Page 12, items 69 to 73 for additional information - 'Contra-Swing' and 'Clad' frame constructions are not eligible for 3 hour rating - All 'Standard' construction SUW frames are available with lead-lining from 1/32" (.8mm) to 5/32" (4.0mm) thickness		
		14 KD 16					
		18 SUW	42" x 86" (1100 x 2200) Singles 72" x 86" (1850 x 2200) Pairs				
		18 KD	36" x 86" (950 x 2200) Singles 72" x 86" (1850 x 2200) Pairs				
		12 14 SUW 16	48" x 120" (1250 x 3050) Singles 96" x 120" (2450 x 3050) Pairs			Stainless Steel (IPLP)	- Fabricated from stainless steel in lieu of galvalneal - Available in all Types (except 302) and all Finishes (except 2B)
		14 KD 16					
		12 14 SUW 16	48" x 120" (1250 x 3050) Singles	Dutch Door Frames (IPLP)	- Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for top leaf - Pairs of dutch doors are not permitted - See Page 11, items 11 to 16 and Page 12, items 100 to 103 for additional information		
		14 KD 16	48" x 96" (1250 x 2450) Singles				
		10 12 SUW 14	42" x 86" (1100 x 2200) Singles	Detention Security	- For use with SWF S-Series (Detention Security) doors only. - Refer to Page 11, items 11 to 16 and Page 12, items 122 to 126 for additional information		

FIRE RATINGS	ELEVATION PLAN	GAUGE SERIES	MAXIMUM RABBIT SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 11 and 12)		
1-1/2 Hour		12 SUW 14 SUW 16 SUW	48" x 120" (1250 x 3050) Singles	Standard (IPLP)	<p>THE FOLLOWING NOTES APPLY TO ALL 1-1/2 AND 1 HOUR LABELLED FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - 3 point lock preparation is required in frames for UL and ULC H-Series doors over 96" (2450mm) rabbet height and the head of pairs must have 2 point lock preparation - D16, D18, E18 and Z-Series 'Standard' construction doors up to 48" x 120" (1250 x 3050) singles, 96" x 96" (2450 x 2450mm) pairs may use single point latch. - Loose wall anchors are permitted in 'Standard' construction frames up to; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs in masonry - Captive masonry anchors are required in all 'Standard' frames over 96" (2450mm) height - See Page 11, items 11 to 18 for quantities and anchor types in other partition types - Hollow metal removable mullions between doors are permitted in all SUW 'Standard' and 'Contra-Swing' construction frames with all self-latching devices. Maximum individual rabbet opening on either side of removable mullion is 48" x 96" (1250 x 2450mm) - Hollow metal removable mullions behind doors are permitted in all UL, WH and FM 'Standard' construction SUW frames up to rabbet size of 96" x 96" (2450 x 2450mm) with all 'Listed' rim type fire exit devices only. Removable mullions behind doors at 1-1/2 or 1 hour ratings are not permitted in ULC frames. See Page 12, items 75 to 78 for info - Doors may be hinged off fixed mullions in UL and WH labelled frames only - Communicating, 4-sided and split frames are permitted. See Page 12, items 69 to 73 for additional information - All 'Standard' construction SUW frames are available with lead-lining from 1/32" (.8mm) to 5/32" (4.0mm) thickness - All 'Standard' construction SUW frames are available with non-combustible cladding (ie : stainless steel (except Type 302), brass, bronze, aluminum) with a maximum thickness of 1/16" (1.6mm). See Page 12, items 61 to 65 for additional information 		
		14 KD 16 KD	96" x 120" (2450 x 3050) Pairs				
		18 SUW	42" x 86" (1100 x 2200) 36" x 96" (950 x 2450) Singles				
			84" x 86" (2150 x 2200) Pairs				
		18 KD	36" x 86" (950 x 2200) Singles				
			72" x 86" (1850 x 2200) Pairs				
		12 SUW 14 SUW 16 SUW	48" x 120" (1250 x 3050) Singles			Stainless Steel (IPLP)	<ul style="list-style-type: none"> - Fabricated from stainless steel in lieu of paintable galvanneal steel - Available in all Types (except 302) and all Finishes (except 2B)
		14 KD 16 KD	96" x 120" (2450 x 3050) Pairs				
		14 SUW 16 KD	96" x 96" (2450 x 2450) Pairs			Double Egress (IPLP)	<ul style="list-style-type: none"> - Loose wall anchors are permitted in masonry partitions. Special 'Z' type stud anchors are required in jambs and head in drywall partitions. See Page 11, items 11 to 18 for info - For use with SWF 'Double Egress' doors and UL or WH 'Listed' D/E wood doors only - See Page 12, items 79 to 82 for additional information
		14 SUW 16 KD	2 x 48" x 96" (2 x 1250 x 2450)			Contra-Swing (IPLP)	<ul style="list-style-type: none"> - Loose wall anchors are permitted in masonry partitions. See Page 11, items 11 to 18 - SWF proprietary internal reinforcing required in all C/S mullions - Contra-Swing mullions may be removable - See Page 12, items 83 to 89 for additional information
	14 SUW 16 SUW	48" x 96" (1250 x 2450) Singles 96" x 96" (2450 x 2450) Pairs	Multi-Opening Frames (IPLP)	<ul style="list-style-type: none"> - UL and FM maximum O/A frame size; 152" width x 98" height (3860 x 2490mm). Quantity of door openings is unrestricted except by maximum rabbet sizes - Loose wall anchors are permitted in units up to 100" (2540mm) width in masonry. See Page 11, items 11 to 18 for additional information - Multi-Opening frames are not permitted in drywall partitions but may use combinations of; singles; pairs; D/E and C/S doors; in D, E or Z-Series UL and FM doors; and with removable mullions between or behind the doors. See Page 12, items 90 to 99 for info 			
	12 SUW 14 SUW 16 SUW	48" x 120" (1250 x 3050) Singles	Dutch Door Frames (IPLP)	<ul style="list-style-type: none"> - Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for self-latching device in top leaf - Pairs of dutch doors are not permitted - Standard closer reinforcements are not mandatory when top leaf uses 'Listed' spring hinges - Captive fire anchors are required in all partitions - See Page 11, items 11 to 18 and Page 12, items 100 to 103 for additional information 			
	14 KD 16 KD	48" x 96" (1250 x 2450) Singles					
	16 SUW 18 SUW	48" x 118" (1250 x 3000) Singles	Frame with Panel Above Door	<ul style="list-style-type: none"> - Panels may be fixed or removable; rabbetted, or flush with flat bar astragal - Maximum O/A frame height; 120" (3050mm) . Maximum nominal panel size; 32" (815mm) height with an area not exceeding 1344 in² (.87m²) - See Page 11, items 11 to 18 and Page 12, items 104 to 114 for additional information 			
	16 KD 18 KD	42" x 86" (1100 x 2200) 36" x 96" (950 x 2450) Singles 84" x 86" (2150 x 2200) Pairs	DW Series (IPLP)	<ul style="list-style-type: none"> - Loose Snap-In type drywall anchors permitted or base of each jamb face may be punched and dimpled for screw fixing to wall - Removable and Contra-Swing mullions are not permitted - DW Series frames must wrap the entire fire separation, butt frame applications in drywall partitions are not permitted - See Page 11, items 19 and 20 for additional information 			
	14 SUW	48" x 86" (1250 x 2200) 36" x 96" (950 x 2450) Singles 72" x 96" (1850 x 2450) Pairs	Acoustic	<ul style="list-style-type: none"> - Maximum STC rating; 46 - Frame supplied with plant installed SWF surface mounted acoustic gasket/stop system - For use with SWF SD16 (Acoustic) Series doors and gasketing system only. Substitutions of other gasketing systems or doors will void the STC rating as unit is tested as a complete assembly - Captive wall anchors are required in a types of partitions - See Page 11, items 11 to 18 and Page 12, items 115 to 121 for additional information 			
	10 SUW 12 SUW 14 SUW	42" x 86" (1100 x 2200) Singles	Detention Security	<ul style="list-style-type: none"> - For use with SWF S-Series (Detention Security) doors only - Detention Security frames may be prepared for all 'Listed' mortised, pocket or jamb mounted latching devices - Meets NAAAMM 863-90 Detention Security Test requirements - See Page 11, items 11 to 18 and Page 12, items 122 to 126 for additional information 			

FIRE RATINGS	ELEVATION PLAN	GAUGE SERIES	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 11 and 12)			
3/4 Hour		12 14 16 SUW	48" x 120" (1250 x 3050) Singles	Standard (IPLP)	<ul style="list-style-type: none"> THE FOLLOWING NOTES APPLY TO ALL 3/4, 1/2 AND 1/3 HOUR LABELLED FRAMES REGARDLESS OF CONSTRUCTION - 3 point lock preparation is required in frames for UL and ULC H-Series doors over 96" (2450mm) rabbet height and the head of pairs must have 2 point lock preparation - D16, D18, E18 and Z-Series 'Standard' construction doors up to; 48" x 120" (1250 x 3050) singles; and 96" x 108" (2450 x 2750mm) pairs may use single point latches - Loose wall anchors are permitted in 'Standard' construction frames up to; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs in masonry - Captive masonry anchors are required in all 'Standard' frames over 96" (2450mm) height - See Page 11, items 11 to 18 for quantities and anchor types in other partition types - Hollow metal removable mullions between doors are permitted in all SUW 'Standard', 'Multi Opening' and 'Contra-Swing' construction frames with all self-latching devices. Maximum individual opening on either side of removable mullion is 48" x 96" (1250 x 2450mm) - Hollow metal removable mullions behind doors are permitted in all 'Standard' construction SUW frames up to rabbet size of 96" x 96" (2450 x 2450mm) with all 'Listed' rim type fire exit devices only. - See Page 12, items 75 to 78 for additional information - Doors may be hinged off fixed mullions in UL and WH labelled frames only - Communicating, 4-sided and split frames are permitted. See Page 12, items 69 to 73 for additional information - All 'Standard' construction SUW frames are available with lead-lining from 1/32" (.8mm) to 5/32" (4.0mm) thickness - All 'Standard' construction SUW frames are available with non-combustible cladding (ie : stainless steel (except Type 302), brass, bronze, aluminum) with a maximum thickness of 1/16" (1.6mm). See Page 12, items 61 to 65 for additional information 			
		14 16 KD	96" x 120" (2450 x 3050) Pairs					
		18 SUW	42" x 86" (1100 x 2200) 36" x 96" (950 x 2450) Singles					
			84" x 86" (2150 x 2200) Pairs					
		18 KD	36" x 86" (950 x 2200) Singles					
			72" x 86" (1850 x 2200) Pairs					
		12 14 16 SUW	48" x 120" (1250 x 3050) Singles			Stainless Steel (IPLP)	<ul style="list-style-type: none"> - Fabricated from stainless steel in lieu of paintable galvanneal steel - Available in all Types (except 302) and all Finishes (except 2B) 	
		14 16 KD	96" x 120" (2450 x 3050) Pairs					
	1/2 Hour		14 16 SUW 16 16 KD			96" x 96" (2450 x 2450) Pairs	Double Egress (IPLP)	<ul style="list-style-type: none"> - Loose wall anchors are permitted in masonry partitions. Special 'Z' type stud anchors are required in jambs and head in drywall partitions. See Page 11, items 11 to 18 for info - For use with SWF 'Double Egress' doors and UL or WH 'Listed' D/E wood doors only - See Page 12, items 79 to 82 for additional information
			14 16 SUW 16 16 KD			2 x 48" x 96" (2 x 1250 x 2450)	Contra-Swing (IPLP)	<ul style="list-style-type: none"> - Loose wall anchors are permitted in masonry partitions. See Page 11, items 11 to 18 - SWF proprietary internal reinforcing required in all C/S mullions - Contra-Swing mullions may be removable - See Page 12, items 83 to 89 for additional information
		14 16 SUW	48" x 96" (1250 x 2450) Singles	Multi-Opening Frames (IPLP)	<ul style="list-style-type: none"> - Maximum O/A frame size; 152" width x 98" height (3860 x 2490mm). Quantity of door openings is unrestricted except by maximum rabbet sizes - Loose wall anchors are permitted in units up to 100" (2540mm) width in masonry. See Page 11, items 11 to 18 for additional information - Multi-Opening frames are not permitted in drywall partitions but may use combinations of; singles; pairs; D/E and C/S doors; in D, E or Z-Series; and with removable mullions between or behind the doors. See Page 12, items 90 to 99 for additional information 			
		14 16 SUW	96" x 96" (2450 x 2450) Pairs					
1/3 Hour		12 14 16 SUW	48" x 120" (1250 x 3050) Singles	Dutch Door Frames (IPLP)	<ul style="list-style-type: none"> - Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for self-latching device in top leaf - Pairs of dutch doors are not permitted - Standard closer reinforcements are not mandatory when top leaf uses 'Listed' spring hinges - Captive fire anchors are required in all partitions - See Page 11, items 11 to 18 and Page 12, items 100 to 103 for additional information 			
		14 16 KD	48" x 96" (1250 x 2450) Singles					
		16 18 SUW	48" x 118" (1250 x 3000) Singles	Frame with Panel Above Door	<ul style="list-style-type: none"> - Panels may be fixed or removable; rabbetted, or flush with flat bar astragal - Maximum O/A frame height; 120" (3050mm) . Maximum nominal panel size; 32" (815mm) height with an area not exceeding 1344 in² (.87m²) - See Page 11, items 11 to 18 and Page 12, items 104 to 114 for additional information 			
		16 18 KD	42" x 86" (1100 x 2200) 36" x 96" (950 x 2450) Singles	DW Series (IPLP)	<ul style="list-style-type: none"> - Loose Snap-In type drywall anchors permitted or base of each jamb face may be punched and dimpled for screw fixing to wall - Removable and Contra-Swing mullions are not permitted - DW Series frames must wrap the entire fire separation, butt frame applications in drywall partitions are not permitted - See Page 11, items 19 and 20 for additional information 			
		18 KD	84" x 86" (2150 x 2200) Pairs					
		14 SUW	48" x 86" (1250 x 2200) 36" x 96" (950 x 2450) Singles	Acoustic	<ul style="list-style-type: none"> - Maximum STC rating; 46 - Frame supplied with plant installed SWF surface mounted acoustic gasket/stop system - For use with SWF SD16 (Acoustic) Series doors and gasketing system only. Substitutions of other gasketing systems or doors will void the STC rating as unit is tested as a complete assembly - Captive wall anchors are required in a types of partitions. See Page 11, items 11 to 18 - See Page 12, items 115 to 121 for additional information 			
	14 SUW	72" x 96" (1850 x 2450) Pairs						
	10 12 14 SUW	42" x 86" (1100 x 2200) Singles	Detention Security	<ul style="list-style-type: none"> - For use with SWF S-Series (Detention Security) doors only - Detention Security frames may be prepared for all 'Listed' mortised, pocket or jamb mounted latching devices - Meets NAAMM 863-90 Detention Security Test requirements - See Page 11, items 11 to 18 and Page 12, items 122 to 126 for additional information 				

FIRE RATINGS	ELEVATION PLAN	GAUGE SERIES	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 11 and 12)	
3 Hour		12	48" x 120" (1250 x 3050) Singles	Standard Transom Frames (IPLP)	<p>THE FOLLOWING NOTES APPLY TO ALL 3 HOUR LABELLED TRANSOM FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - 3 hour transom frames are not eligible for FM labelling - Only factory installed paneled transom openings are permitted - Minimum panel construction; 1 sheet of 20 gage steel laminated to each face of 3/8" (9.5 mm) thick inorganic reinforced cement board, nominal density - 110 pcf (1760 kg/m³) - Maximum transom rabbet opening height; 32" (815mm) - Maximum combined door/transom rabbet height; 120" (3050mm) - 3 point lock preparation is required in transom frames for UL and ULC H-Series doors over 96" (2450mm) rabbet height and the transom mullion of pairs must have 2 point lock prep - If doors are by others, hardware preparations in transom frame are as required by the door manufacturer's procedures - Captive wall anchors are required in masonry partitions. See Page 11, items 11 to 18 for quantities and types of anchors permitted in other partitions - Communicating and 4-sided transoms are permitted. See Page 12, items 69 to 71 - Hollow metal removable mullions, contra-swing, clad or split (2 piece) 3 hour transom frames are not permitted - Square or rectangular transom openings only. Radiused or multi-sided transom openings are not permitted - Louvres or glazing materials are not permitted in 3 hour transom frames - Transom mullions may not be removable 	
		14 SUW				Stainless Steel Transom Frames (IPLP)
		16	96" x 120" (2450 x 3050) Pairs	Dutch Door Transom Frames (IPLP)	<ul style="list-style-type: none"> - Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for self-latching device in top leaf - Pairs of dutch door transom frames are not permitted - See Page 12, items 100 to 103 for additional information 	
		12 14 SUW 16	48" x 120" (1250 x 3050) Singles			<p>THE FOLLOWING NOTES APPLY TO ALL 1-1/2 HOUR AND 1 HOUR TRANSOM FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - Only factory installed paneled transom openings are permitted in 1-1/2 hour units - Minimum panel construction; 1 sheet of 20 gage steel laminated to each face of 3/8" (9.5 mm) thick inorganic reinforced cement board, nominal density - 110 pcf (1760 kg/m³) - Maximum transom rabbet opening height; 32" (815mm) - UL and WH transom frames with 1 hour 'Listed' glazing materials up to 1/4" (6mm) thick are permitted up to 1 hour rating. Refer to Testing Authority listings for limitations of specific glazing materials. Glazed 1 hour ULC or FM transoms are not available - Maximum combined door/transom rabbet height; 120" (3050mm) - 3 point lock preparation is required in transom frames for UL and ULC H-Series doors over 96" (2450mm) rabbet height and the transom mullion of pairs must have 2 point lock prep - D16, D18, E18 and Z-Series 'Standard' construction doors up to 48" x 120" (1250 x 3050) singles; 96" x 96" (2450 x 2450mm) pairs may use single point latches. See Page 11, items 5 to 7 for additional information - If doors are by others, hardware preparations in transom frame are as required by the door manufacturer's procedures - Captive wall anchors are required in masonry partitions. See Page 11, items 11 to 18 for quantities and types of anchors permitted in other partitions - Communicating and 4-sided transoms are permitted. See Page 12, items 69 to 71 - Hollow metal removable mullions between doors are permitted in all UL, ULC and FM 'Standard' and 'Contra-Swing' construction transom frames with all self-latching devices. - Maximum individual rabbet opening on either side of removable mullion is 48" x 96" (1250 x 2450mm). Doors may not be hinged off removable mullions. See Page 12, items 75 to 78 for additional information - Hollow metal removable mullions behind doors or split (2 piece) transom frames are not permitted - Square or rectangular transom openings only. Radiused or multi-sided transom openings are not permitted - Louvers are not permitted in transom openings - Transom mullions may not be removable - All 'Standard' construction transom frames are available with non-combustible, factory installed calddings. See Page 12, items 61 to 65 for additional information
1-1/2 Hour		12	48" x 120" (1250 x 3050) Singles	Standard Transom Frames (IPLP)	<ul style="list-style-type: none"> - Fabricated from stainless steel in lieu of paintable galvaneal steel - Stainless steel is available in all Types (except 302) and all Finishes (except 2B) 	
	14 SUW		Stainless Steel Transom Frames (IPLP)			
1 Hour		14 16	96" x 96" (2450 x 2450) Pairs	Double Egress Transom Frames (IPLP)	<ul style="list-style-type: none"> - SWF proprietary internal reinforcing required in all 'Contra-Swing' mullions - Contra-Swing mullion may be fixed or removable - See Page 12, items 83 to 89 for additional information 	
	14 SUW	2 x 48" x 96" (2 x 1250 x 2450)	Contra-Swing Transom Frames (IPLP)	<ul style="list-style-type: none"> - Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for top leaf - Pairs of dutch door transom frames are not permitted - See Page 11, items 11 to 18 and Page 12, items 100 to 103 for additional information 		
	12 14 SUW 16	48" x 120" (1250 x 3050) Singles	Dutch Door Transom Frames (IPLP)			

FIRE RATINGS	ELEVATION PLAN	GAUGE SERIES	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 11 and 12)
3/4 Hour		12	48" x 120" (1250 x 3050) Singles	Standard Transom Frames (IPLP)	<p>THE FOLLOWING NOTES APPLY TO ALL 3/4, 1/2 AND 1/3 HOUR LABELLED TRANSOM FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - Paneled or glazed transom openings are permitted. - Minimum panel construction; 1 sheet of 20 gage steel laminated to each face of 1/2" (12.7 mm) thick non-rated gypsum board. - Glazed transom openings; All UL and WH 'Listed' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications are permitted in UL and WH transom frames. - For UL, ULC and WH transom frames, double glazed lights with 1 piece of 1/4" (6mm) GWG + 1 piece of 1/4" (6mm) tempered glazing are permitted. FM transom frames require fixed single or multiple panes of 1/4" (6mm) thick GWG. Where multiple panes are used, they may not be laminated together nor be sealed (thermopane) type units. - Maximum individual exposed glass sizes; 98" (2500mm) width; 36" (915mm) height with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'listed' otherwise, all other 1/4" GWG is limited to exposed sizes of; 1296 in² (.84m²); 48" (1250mm) width; or 32" (815mm) height. See Page 11, items 35 to 41 for additional information. - Maximum combined door/transom rabbet height; 136" (3450mm) in drywall partitions, 144" (3660mm) in all other partition types - 3 point lock preparation is required in transom frames for UL and ULC H-Series doors over 96" (2450mm) rabbet height and the transom mullion of pairs must have 2 point lock prep - D16, D18, E18 and Z-Series 'Standard' construction doors up to; 48" x 120" (1250 x 3050) singles; and 96" x 108" (2450 x 2750mm) pairs may use single point latches - If doors are by others, hardware preparations in transom frame are as required by the door manufacturer's procedures - Captive wall anchors are required in masonry partitions. See Page 11, items 11 to 18 for quantities and types of anchors permitted in other partitions - Communicating and 4-sided transom frames are permitted. See Page 12, items 69 to 71 - Hollow metal removable mullions between doors are permitted in all UL, ULC and FM 'Standard', 'Contra-Swing' and 'Multi-Opening' construction transom frames with all self-latching devices - Maximum individual rabbet opening on either side of removable mullion is 48" x 96" (1250 x 2450mm). Doors may not be hinged off removable mullions - Hollow metal removable mullions behind doors or split (2 piece) transom frames are not permitted. See Page 12, items 75 to 78 for additional information - Square or rectangular transom openings only. Radiused or multi-sided transom openings are not permitted - Louvers are not permitted in transom openings - Transom mullions may not be removable - All 'Standard' construction transom frames are available with non-combustible, factory installed claddings. See Page 12, items 61 to 65 for additional information
		14 SUW			
		16			
	1/2 Hour				
1/3 Hour		14 SUW 16	96" x 96" (2450 x 2450) Pairs	Double Egress Transom Frames (IPLP)	<ul style="list-style-type: none"> - For use with SWF 'Double Egress' doors or UL 'Listed' D/E wood doors only - Available with UL, ULC and FM labels only - See Page 11, items 11 to 18 and Page 12, items 79 to 82 for additional information
		14 SUW 16	2 x 48" x 96" (2 x 1250 x 2450)	Contra-Swing Transom Frames (IPLP)	<ul style="list-style-type: none"> - SWF proprietary internal reinforcing required in all Contra-Swing mullions - Contra-Swing mullion may be fixed or removable in UL, ULC or FM transom frames - Fixed Contra-Swing mullions only in WH transom frames - See Page 12, items 83 to 89 for additional information
		14 SUW 16	48" x 96" (1250 x 2450) Singles 96" x 96" (2450 x 2450) Pairs	Multi-Opening Transom Frames (IPLP)	<ul style="list-style-type: none"> - Maximum O/A unit size; 152" width x 98" height (3860 x 2490mm) or 144" width x 144" height (3660 x 3660mm). Quantity of door openings is unrestricted except by maximum rabbet sizes - Multi-Opening transom frames are not permitted in drywall partitions - Multi-Opening transom frames may incorporate combinations of; singles; pairs; D/E and C/S doors; with D, E or Z-Series; and with removable mullions between the doors - Available with UL, ULC and FM labels only - See Page 11, items 11 to 18 and Page 12, items 90 to 99 for additional information
		14 SUW 16	48" x 120" (1250 x 3050) Singles	Dutch Door Transom Frames (IPLP)	<ul style="list-style-type: none"> - Strike jamb must be prepared for 1 strike for self-latching device in bottom leaf and may be prepared for a 2nd strike for self-latching device in top leaf - Pairs of dutch door transom frames are not permitted - See Page 11, items 11 to 18 and Page 12, items 100 to 103 for additional information

FIRE DOOR FRAME AND TRANSOM FRAME SPECIFICATIONS AND REQUIREMENTS *2 (Back Cover)

A) HARDWARE REQUIREMENTS

1. All labelled fire door frame products must be prepared for UL, ULC, WH or FM hardware, 'Listed' or 'Classified' for Fire Protection. Refer to Testing Authority listings for limitations on individual Hardware Manufacturer's products.

Hinges

2. 1 pair of hinges required on all doors up to 60" (1525mm) rabbet height and 1 additional hinge for each additional 30" (760mm) or fraction of thereof. 4-1/2" (114mm) standard weight hinges minimum up to 96" (2450mm) rabbet; 4-1/2" (114mm) heavy weight hinges (minimum) required over 96" (2450mm). See SWF Steel Door and Frame Catalogue for standard hinge locations.
3. Also permitted are continuous, surface, olive knuckle, paumelle type, pivots and spring hinges.
4. Hinges or pivots, other than ball bearing type, are permitted if they meet the requirements of ANSI A156.1, Standard for Butts and Hinges.

Strikes

5. 3 point lock preparation is required in frames or transom frames for all UL and ULC H-Series doors over 96" (2450mm) rabbet height. D16, D18, E18 and Z-Series 'Standard' construction doors up to; 48" x 96" (1250 x 2450mm) singles and 96" x 96" (2450 x 2450mm) pairs to 3 hour; 48" x 120" (1250 x 3050mm) singles to 1-1/2 hour; and 96" x 108" pairs to 3/4 hour may use single point latches.
6. If doors are by others, hardware preparations in frames and transom frames are as required by the door manufacturer's labeling procedures
7. 'Listed' or 'Classified' electric strikes are permitted

Self-Closing Devices

8. Includes; closers; combination closer/holders (surface or floor mounted, concealed or semi-concealed); and spring hinges
9. Each frame and transom frame must be reinforced for a separate self-closing device for each door leaf it contains. Exceptions; Reinforcing for self-closing device is not mandatory on; the inactive leaf of pairs in mechanical equipment rooms; or when floor closers (pivot) or spring hinges are used. When spring hinges are used, minimum of 2 per door leaf required.

Gaskets, Weather-Stripping and Door Seals

10. 'Listed/Classified' products are permitted on all SWF labeled frames and transom frames up to 3 hour rating. Such products are supplied and installed by others.

B) ANCHORAGE

11. Each jamb of frame or transom frame shall be provided with anchorage to suit the partition in which it will be installed
12. Anchors (except EWA type and 'DW-Series' frames) shall be positioned inside the jamb profile directly above or below each hinge on the hinge jamb and directly opposite on the strike jamb. Units up to 60" (1525mm) rabbet height shall receive 2 anchors per jamb; up to 92" (2340mm) O/A height - 3 per jamb; and over 92" (2340mm) O/A height - 4 per jamb

Unit Masonry Walls

13. Loose masonry wall anchors are permitted on the following units up to and including 1-1/2 hour rating;
 - 'Standard' and 'Stainless Steel' construction frames up to; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs
 - 'Double Egress' construction frames up to 96" x 96" (2450 x 2450mm)
 - 'Multi-Opening' construction frames up to 100" (2540mm) O/A unit width and 96" (2450mm) rabbet height
 - 'Contra-Swing' construction frames up to 2 x 48" x 96" (2 x 1250 x 2450mm) rabbet
 - Frame with rabbeted or flush hollow metal panels up to 120" (3050mm) O/A unit height
14. Captive (welded to frame) masonry fire anchors are required on all;
 - 3 hour frames
 - Frames over 96" (2450mm) rabbet height
 - Transom frames, 'Dutch Door Frames', 'Acoustic' and 'Detention' frames
 - 'Multi-Opening' frames over 100" (2540mm) O/A width

Cast-In Place Concrete, Structural Steel and Existing Unit Masonry Walls

15. Frames and transom frames have jambs pierced and dimpled for 3/8" (9.5mm) diameter machine bolts with Existing Wall Anchor (EWA) guides welded in place for all sizes, constructions and ratings. Bolts and shields for EWA guides are supplied by others
16. Units up to 64" (1625mm) O/A height shall receive 3 anchors per jamb; up to 90" (2280mm) O/A height - 4 per jamb; up to 116" (2950mm) O/A height - 5 per jamb; and up to 144" (3660mm) O/A height - 6 per jamb.

Drywall Partitions

17. All frames and transom frames in drywall partitions must wrap the entire fire separation by 3/4" (19mm) minimum. Butt applications are not permitted in drywall and steel or wood stud partitions
18. Steel Stud or 'Z' Anchors (SSA), Combination Stud Anchors (CSA) and Wood Stud Anchors (WSA) are permitted in all sizes, frame and transom frames constructions (except 'DW-Series'), for ratings up to and including 1-1/2 hour. SSA and WSA type anchors must be captive (welded in place). CSA type anchors may be shipped loose on frames, but must be captive on all transom frames.
19. Snap-In type drywall anchors are permitted on 'DW-Series' construction frames only. 1 anchor is required in each face of; hinge and strike jambs at their base; each strike jamb above the strike reinforcement; and in heads, centered on the opening for pairs only. In addition, each jamb is provided with a single, captive, adjustable tension anchor, located 5" (125mm) from top of jamb. Snap-In type drywall anchors are shipped loose. As an alternate to Snap-In type drywall anchors, the faces at the base of each jamb may be factory punched and dimpled

for screw fixing to the partition.

20. Rough stud opening size for 'DW-Series' frames; frame rabbet width + 1-1/2" (38mm); frame rabbet height + 3/4" (19mm)

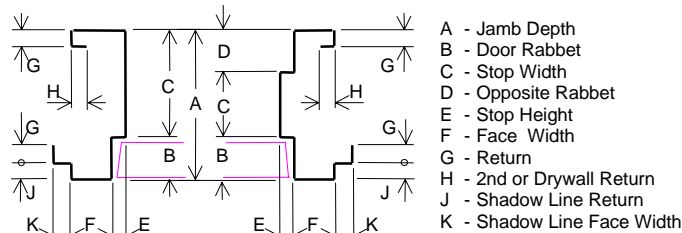
C) PROFILE RESTRICTIONS

Jambs, Heads and Sills

21. Jamb Depths (A)
 - ; minimum - single rabbet - ULC ; 2-5/8" (66mm)
 - UL, FM ; 2-1/2" (63mm)
 - WH ; 3" (76mm)
 - double rabbet - 4" (100mm)
- ; maximum - WH ; 12" (305mm)
- ULC ; 13-1/2" (343mm)
- UL, FM ; 14-1/2" (368mm)
- Note : Single rabbet profile less than 4" (100mm) JD are permitted in single frames only
22. Face Widths (F)
 - ; minimum - single rabbet - 2" (50mm) for JD less than 4" (100mm)
 - 1-1/4" (32mm) for JD 4" (100mm) and larger
 - double rabbet - 1-1/4" (32mm)
- ; maximum - 12" (305mm)
- ; Note - The face width appearance of a head may be increased by constructing a labelled paneled transom frame and adding 20 gage fascia panels tack welded into the transom opening, flush with the jamb, head and horizontal transom mullion faces. See items 44 to 48, below, for labelled panel construction. The exposed joints are body filled and ground smooth.
23. Shadow-Line Face Widths (K)
 - ; minimum - 1/4" (6mm)
 - ; maximum - 4" (102mm)
24. Stop Width (C); minimum - 1" (25mm) for all profiles, no maximum
25. Stop Heights (E); minimum - 5/8" (16mm) for all profiles
26. Returns (G), 2nd or Drywall Returns (H) and Shadow Line Returns (J)
 - ; minimum - 1/4" (6mm)
 - ; maximum - 3/4" (20mm)
27. Hospital profile sections are permitted
28. Sanitary bases, 6" (150mm) maximum off floor are permitted

Mullions

29. Jamb Depths (A)
 - ; minimum - ULC, WH; 4" (100mm)
 - UL, FM ; 4-1/2" (114mm)
- ; maximum - ULC ; 9" (229mm)
- UL, WH, FM ; 10-1/2" (267mm)
30. Face Widths (F)
 - ; minimum - 1-1/4" (32mm)
 - ; maximum - 12" (305mm)
31. Stop Widths (C); minimum - 1" (25mm), no maximum
32. Stop Heights (E); minimum - 5/8" (16mm)
33. Hospital profile mullions are permitted
34. Sanitary bases, 6" (150mm) maximum off floor are permitted



SINGLE RABBET PROFILE DOUBLE RABBET PROFILE

D) GLAZED TRANSOMS

35. Glazing materials are not supplied or installed by SWF
36. All UL and WH 'Listed/Classified' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications are permitted in UL and WH labeled transom frames up to 3/4 hour rating
37. For UL, ULC and WH transom frames, double glazed lights with 1 piece of 1/4" (6mm) GWG + 1 piece of 1/4" (6mm) tempered glazing are permitted.
38. FM transom frames require fixed single or multiple panels of 1/4" (6mm) thick GWG.
39. Where multiple panes of glazing materials are used, they may not be laminated together nor be sealed (thermopane) type units.
40. Transom frames with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound are restricted to maximum exposed sizes of; 98" (2500mm) width; 36" (915mm) height. Unless 'Listed' otherwise, all other 1/4" GWG is limited to exposed glass sizes of; 1296 in² (.84m²) area, 48" (1250mm) width; or 32" (815mm) height
41. For transom frames utilizing other than 1/4" (6mm) GWG, refer to Testing Authority listing for limitations on specific glazing materials
42. Maximum combined door/transom rabbet height; 136" (3450mm) in drywall partitions; 144" (3660mm) in all other partition types
43. Square or rectangular fixed transom openings only. Radiused, arched, multi-sided or operable transoms are not permitted

E) TRANSOM PANELS

44. Minimum panel construction for 3, 1-1/2 and 1 hour transom frames; 1 sheet of 20 gage steel laminated to each face of 3/8" (9.5mm) thick inorganic cement board, nominal density - 110 pcf (1760 kg/m³)

FIRE DOOR FRAME AND TRANSOM FRAME SPECIFICATIONS AND REQUIREMENTS *2 (Back Cover)

45. Minimum panel construction for 3/4, 1/2 and 1/3 hour transom frames; 1 sheet of 20 gage steel laminated to each face of 1/2" (12.7mm) thick non-rated GWB
46. Maximum transom rabbet opening height for all transom panels; 32" (815mm)
47. All transom panels must be factory installed
48. Panels are mounted in transom opening with 3/4" wide x 5/8" tall (19 x 16mm) removable glazing stops
49. FM transom frames are not eligible for 3 hour rating
50. Removable horizontal transom mullions are not permitted
51. Square or rectangular transom panels only. Radiused, arched or multi-sided transoms are not permitted

F) MISCELLANEOUS RESTRICTIONS

52. Combustible facings or finishes other than paint, electroplating or SWF's UL/ULC/WH approved metal claddings are not permitted (ie : wood veneers, plastic, paper or fabric). Refer to items 61 to 65 below, for details of approved claddings
53. Field or mechanical splicing are not permitted
54. SWF 'Therma-Frame' and 'Trimwall' Series units are not eligible for labelling
55. Removable horizontal transom mullions are not permitted
56. Louvers or dampers are not permitted in transom opening.
57. Doors may be hinged off mullions in; 1-1/2 and 1 hour UL and WH units; 3/4, 1/2 and 1/3 hour UL, ULC, WH and FM units
58. Cased open sections are not permitted
59. Double Acting swing units are not permitted
60. Angled or arched corners, heads or transoms are not permitted

G) OPTIONS AND CONSTRUCTIONS AVAILABLE**Frames and Transom Frames**

61. All SUW 'Standard' construction frames and transom frames up to 1-1/2 hour rating are available with factory installed, non-combustible cladding (ie; stainless steel (except Type 302), brass, bronze, aluminum) with a maximum thickness of 1/16" (1.6mm).
62. Cladding materials may be applied to the door side and/or opposite side of the frame profile
63. Removable glazing stops in transom frames are clad to match unit. Exception; Glazing stops for stainless steel clad units are fabricated from stainless steel
64. Acid etched patterns, logo's, etc., are permitted
65. Clad frames and transom frames are restricted to use with SWF 'Standard', 'Clad' or 'Stainless Steel' construction doors
66. All 'Standard' construction SUW frames are available with lead-lining from 1/32" (0.8mm) to 5/32" (4.0mm) thickness.
67. Lead-lining is secured to the inside of the frame profile from the stop height/stop width intersection to the end of the return, on the door side only.
68. Lead lined frames must be prepared for 4-1/2" (114mm) heavy weight hinges (minimum).
69. Communicating units are permitted up to the maximum rabbet sizes noted for each frame and transom frame construction
70. 4-sided units are permitted up to the maximum rabbet sizes noted for each frame and transom frame construction. Sills in 4-sided units may have an integral door stop or may be cased open type sections
71. 4-Sided units are restricted to use with SWF doors only and are not permitted in floors or ceilings
72. When installed off the floor in drywall partitions, 4-sided frames and transom frames must be supported on captive 12 gage channel extensions and angle brackets at 33" OC (840mm) maximum, 2 per unit minimum
73. Split (2 piece) frames for wrapping existing partitions are permitted in 12, 14 or 16 gage SUW 'Standard' construction up to; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs; up to and including 3 hour rating. Split transom frames are not eligible for labeling
74. Sanitary bases, 6" (150mm) off the floor, and hospital profile sections are permitted in all frame and transom frame constructions

Hollow Metal Removable Mullions

75. Hollow metal removable mullions between doors are permitted in; all 'Standard' and 'Contra-Swing' construction frames up to 1-1/2 hour rating; UL and FM 'Multi-Opening' frames up to 1-1/2 hour; ULC and WH 'Multi-Opening' frames to 3/4 hour; 'Standard' and 'Contra-Swing' construction UL, ULC and FM transom frames to 1-1/2 hour; and UL, ULC and FM 'Multi-Opening' transom frames to 3/4 hour. Maximum individual rabbet opening size on either side of removable mullion; 48" x 96" (1250 x 2450mm) with all self-latching devices
76. Hollow metal removable mullions behind doors are permitted in all ; UL, WH and FM 'Standard' construction SUW frames up to 1-1/2 hour rating; and ULC 'Standard' construction SUW frames up to 3/4 hour rating. Maximum rabbet size; 96" x 96" (2450 x 2450mm) with all 'Listed' rim type fire exit devices only
77. Hollow metal removable mullions are not permitted in UL, ULC and FM 3 hour frames or transom frames; or WH transom frames
78. Doors may not be hinged off removable mullions

Double Egress (D/E) Units

79. Maximum door rabbet opening; 96" x 96" (2450 x 2450mm) up to 1-1/2 hour rating
80. Loose wall anchors are permitted in masonry partitions. Special off-set 'Z' type stud anchors are required in jambs and heads of units in drywall partitions. Head to receive 6 stud anchors per head.
81. Heads are available in either single rabbet or 'double stopped' (like jambs) profiles. Face widths; ULC, WH - 2" (50mm) minimum; UL, FM - 1-1/4" (32mm) minimum; 4" (102mm) maximum. All other requirements under 'Profile Restrictions' above, apply
82. UL, ULC, WH and FM 'Double Egress' frames are restricted to use with SWF 'Double Egress' doors and UL or WH 'Listed' D/E wood doors. UL, ULC and FM transom frames are restricted to use with SWF 'Double Egress' doors or UL 'Listed' D/E wood doors only.

Contra-Swing (C/S) Units

83. Maximum rabbet opening; 2 x 48" x 96" (2 x 1250 x 2450mm) up to 1-1/2 hour rating
84. Loose wall anchors are permitted in frames in masonry.
85. C/S frames in drywall partitions and all C/S transom frames require captive wall anchors
86. SWF proprietary internal reinforcing required in all Contra-Swing mullions. Contra-Swing mullions may be fixed or removable.
87. Doors may not be hinged off removable Contra-Swing mullions
88. Contra-Swing units may have equal or unequal door and opposite rabbets. Single rabbet Contra-Swing mullions are permitted
89. Restricted to use with; D, Z or E-Series UL, WH or FM doors; and D, Z, E or H-Series ULC doors

Multi-Opening Units (Banks of Doors)

90. Available in SUW Series frames and transom frames only
91. Maximum O/A unit size; 152" width x 98" height (3860 x 2490mm) frames; 152" x 98" (3860 x 2490mm) or 144" x 144" (3660 x 3660mm) transom frames
92. Ratings available up to; 1-1/2 hour for UL and FM frames; 3/4 hour for ULC and WH frames, UL, ULC and FM transom frames
93. Maximum door rebate sizes; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs. Quantity of rabbet openings is unrestricted except by maximum door rabbet sizes
94. Maximum exposed transom opening; 98" (2500mm) width x 36" (915mm) height with Pilkington 'Listed' 6mm GPW glass and Pemko FG-3000 glazing compound. Unless 'Listed' otherwise, all other 1/4" GWG is limited to exposed glass sizes of; 1296 in² (.84m²) area; 48" (1250mm) width; or 32" (815mm) height.
95. Loose wall anchors are permitted in frames in masonry up to 100" (2540mm) O/A width. Frames over 100" (2540mm) O/A width, and all transom frame units require captive wall anchors.
96. Multi-Opening units may incorporate combinations of; singles; pairs; double egress or contra-swing doors; in D, E or Z-Series; and may incorporate fixed or removable mullions between or behind doors
97. Multi-Opening units are restricted to use with D, E or Z-Series doors
98. Multi-Opening units are not permitted in drywall partitions
99. Doors may not be hinged off removable mullions

Dutch Door Units

100. Captive wall anchors are required for all dutch door frames and transom frames
101. Strike jamb must be prepared for 1 strike from self-latching device in bottom leaf. Strike jamb may be prepared for 2 strikes when both leafs latch into frame
102. Closer reinforcing in head of frame may be omitted when top leaf utilizes 'Listed' spring hinges
103. Pairs of dutch door frames or transom frames are not eligible for fire labeling

Frame with Panel Above Door

104. Loose wall anchors are permitted in all partition types
105. Maximum O/A frame height; 120" (3050mm)
106. Nominal panel size; 1-3/4" (44.4mm) thick only; 32" (815mm) height maximum; 6" (150mm) height minimum; 1344 in² (.87m²) area maximum
107. Panel face sheets; 18 or 20 gage (to match door gage)
108. Core material; kraft honeycomb or polystyrene
109. Bottom of UL and WH panels may be rabbeted or flush. ULC and FM panels must be rabbeted
110. Flush and rabbeted panels may be fixed or removable
111. Flush type requires flat bar astragal affixed to back of panel. Astragals are shipped loose for installation on site by others
112. Rabbet stop height; 3/4" (19mm) minimum
113. With flush panels, only single D18, D20, Z18, E18 or E20 Series 'Standard' construction doors are permitted
114. With rabbeted panels, only D18, D20, Z18, E18 or E20 Series 'Rabbeted Top Cap' construction doors are permitted

Acoustic Frames

115. Maximum rating; STC 46 at 1-1/2, 3/4 or 1/3 hour fire rating
116. Available in SF-14 SUW Series frames only
117. Captive anchors are required in all types of partitions
118. Frame must be prepared for 4-1/2" (114mm) heavy weight hinges (minimum)
119. Frame supplied with plant installed SWF surface mounted gasket/stop system and stop protectors.
120. For use with SWF SD-16 Series Acoustic doors only
121. Substitutions of other doors or gasketing systems will void the STC rating as unit is tested as a complete assembly

Detention Security Frames

122. Maximum fire rating; 3 hours, negative or positive furance pressure
123. Assembly meets NAAMM HMMA 863-90 static load, impact load, rack, and removable glazing stop test requirements
124. For use with SWF S-Series (Detention Security) doors only
125. Frames may be prepared for all 'Listed/Classified' mortised, pocket or jamb mounted self-latching devices or strikes
126. Detention Security Frames are not available with FM label

FIRE RATINGS	ELEVATION OR PLAN	GAUGE SERIES	MAXIMUM RABBET SIZE	CONSTRUCTION *3 (Back Cover)	GENERAL NOTES (To be read in conjunction with Requirements on Pages 14 and 15)								
1-1/2 Hour		14	48" x 120" (1250 x 3050) Singles	Standard Sidelight Frames (IPLP)	<p>THE FOLLOWING NOTES APPLY TO ALL 1-1/2 HOUR AND 1 HOUR LABELLED SIDELIGHT FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - Only factory installed paneled side or transom openings are permitted in 1-1/2 hour units - Minimum panel construction; 1 sheet of 20 gage steel laminated to each face of 3/8" (9.5mm) thick inorganic reinforced cement board, nominal density - 110 pcf (1760kg/m³) - UL and WH sidelight frames with 1 hour 'Listed' glazing materials up to 1/4" (6mm) thick are permitted up to 1 hour rating. Refer to Testing Authority listings for limitations of specific glazing materials. Glazed 1 hour ULC or FM sidelight frames are not available - Maximum O/A unit size in drywall partitions; 80 ft² (7.4m²) area with neither the width nor height exceeding 120" (3050mm) - Maximum O/A unit size in all other partitions; 120 ft² (11.1m²) area with neither the width nor height exceeding 144" (3660mm) - Maximum individual transom panel opening; 48" width x 36" height (1250 x 915mm) - Maximum individual exposed side panel opening; 1296 in² (.84m²) area; with neither the exposed width nor height exceeding 54" (1370mm) - Minimum stop height in all 1 and 1-1/2 hour sidelight frames; 3/4" (19mm). See Page 14, items 26 to 41 for all other profile restrictions - Captive wall anchors are required in all partitions. See Page 14, items 11 to 25 for quantities and types of anchors permitted - 1 and 1-1/2 hour sidelight frames are not permitted on drywall kneewall partitions - The following sidelight constructions are not available with 1 or 1-1/2 hour ratings; stainless steel; cladding; hollow metal removable mullions behind the door; and Multi-Opening configurations - Doors may not be hinged off unsupported or removable mullions - Hollow metal removable mullions between the doors are permitted. See Page 15, items 80 and 81 for additional information 								
						SUW	96" x 120" (2450 x 3050) Pairs	Double Egress Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - For use with SWF 'Double Egress' doors or UL 'Listed' D/E wood doors only - Available with UL, ULC and FM labels only - See Page 15, items 82 to 84 for additional information 				
										16	96" x 96" (2450 x 2450) Pairs	Contra-Swing Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - SWF proprietary internal reinforcing required in all 'Contra-Swing' mullions - Contra-Swing mullion may be fixed or removable. Available with UL, ULC and FM labels only. See Page 15, items 85 to 90 for additional information
1 Hour		16	96" x 96" (2450 x 2450) Pairs	Contra-Swing Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - SWF proprietary internal reinforcing required in all 'Contra-Swing' mullions - Contra-Swing mullion may be fixed or removable. Available with UL, ULC and FM labels only. See Page 15, items 85 to 90 for additional information 								
						SUW	96" x 120" (2450 x 3050) Pairs	Standard Sidelight and Window Frames (IPLP)	<p>THE FOLLOWING NOTES APPLY TO ALL 3/4, 1/2 AND 1/3 HOUR LABELLED SIDELIGHT AND WINDOW FRAMES REGARDLESS OF CONSTRUCTION</p> <ul style="list-style-type: none"> - Paneled or glazed side or transom openings are permitted - Minimum panel construction; 1 sheet of 20 gage steel laminated to each face of 1/2" (12.7mm) thick non-rated gypsum board. Panels must be factory installed - All UL and WH 'Listed' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications are permitted in UL and WH labeled sidelight and window frames. - For UL, ULC and WH units, double glazed lights with 1 piece of 1/4" (6mm) GWG + 1 piece of 1/4" (6mm) tempered glazing are permitted - FM units require fixed single or multiple panes of 1/4" (6mm) GWG - Where multiple panes are used, they may not be laminated together nor be sealed (thermopane) type units - Maximum O/A size in drywall partitions; 152" width x 136" height (3860 x 3455mm) - Maximum O/A size in all other partitions; 162" width x 144" height (4115 x 3660mm) - Maximum exposed transom light opening; 98" (2500mm) width x 36" (915mm) height with Pilkington 'Listed' 6mm GPW glass and Permco FG-3000 glazing compound. Unless 'Listed' otherwise, all other 1/4" GWG limited to exposed glass sizes of; 1038 in² (.67m²) area; 48" (1250mm) width; or 32" (815mm) height - Maximum individual exposed sidelight opening; 4704in² (3.03m²) area; neither the width nor height exceeding 98"(2500mm) with Pilkington 'Listed' 6mm GPW glass. Unless 'Listed', otherwise all other 1/4" GWG limited to exposed sizes of; 1296 in² (.84m²) area; neither width nor height exceeding 54" (1370mm). See Page 15, items 56 to 63 for additional information - Loose wall anchors are permitted in masonry up to; 96" (2450mm) unit width; 98" (2500mm) unit height. See Page 14, items 11 to 25 for quantities and types in other partitions - Hollow metal removable mullions between the doors are permitted. Doors may not be hinged off removable mullions. See Page 15, items 80 and 81 for additional information - Field spliced are permitted - Doors may not be hinged off unsupported mullions in UL, WH or FM labelled sidelight frames. 				
										16	48" x 96" (1250 x 2450) Singles	Multi-Opening Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - Available with ULC label only - For use with D, E and Z-Series doors only - See Page 15, items 91 to 95 for additional information
	Double Egress Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - For use with SWF 'Double Egress' doors or UL 'Listed' D/E wood doors only - Available with UL, ULC and FM labels only - See Page 15, items 82 to 84 for additional information 											
	Contra-Swing Sidelight Frames (IPLP)	<ul style="list-style-type: none"> - SWF proprietary internal reinforcing required in all 'Contra-Swing' mullions - Contra-Swing mullion may be fixed or removable. Available with UL, ULC and FM labels only. See Page 15, items 85 to 90 for additional information 											
1/3 Hour Without Hose Stream		14	48" x 120" (2450 x 3050) Singles	Standard Sidelight and Window Frames (IPLP)	<ul style="list-style-type: none"> - Available with UL and WH labels only - Maximum O/A unit size in drywall partitions; 152" width x 136" height (3860 x 3455mm) - Maximum O/A unit size in all other partitions; 162" width x 144" height (4115 x 3660mm) - Maximum individual exposed sidelight or window opening; 5268 in² (3.4m²) area with neither the exposed width nor height exceeding 110-3/8" (2800mm) with 5/8" (16mm) high standard stops - See 1/3 hour (with hose stream) units above, and Page 15, items 68 to 72 for additional info 								
		16	96" x 120" (2450 x 3050) Pairs										

FIRE WINDOW AND SIDELIGHT FRAME SPECIFICATIONS AND REQUIREMENTS *2 (Back Cover)

A) HARDWARE REQUIREMENTS

1. All labelled sidelight frames must be prepared for UL, ULC, WH or FM hardware, 'Listed' or 'Classified' for Fire Protection. Refer to Testing Authority listings for limitations on individual Hardware Manufacturer's products.

Hinges

- 1 pair of hinges required on all sidelight assemblies up to 60" (1525mm) rabbet height and 1 additional hinge for each additional 30" (760mm) or fraction thereof. 4-1/2" (114mm) standard weight hinges minimum up to 96" (2450mm) rabbet; 4-1/2" (114mm) heavy weight hinges (minimum) required over 96" (2450mm). See SWF Steel Door and Frame Catalogue for standard hinge locations.
- Also permitted are continuous, surface, olive knuckle, paumelle type, pivots and spring hinges.
- Hinges or pivots, other than ball bearing type, are permitted if they meet the requirements of ANSI A156.1, Standard for Butts and Hinges.

Strikes

- 3 point lock preparation is required in sidelight frames for all UL and ULC H-Series doors over 96" (2450mm) rabbet height. UL, ULC and FM D16, D18, E18 and Z-Series and WH D, E and Z-Series 'Standard' construction doors up to; 48" x 120" (1250 x 3050mm) singles and 96" x 96" (2450 x 2450mm) pairs to 1-1/2 hour; and 96" x 108" pairs to 3/4 hour may use single point latches
- If doors are by others, hardware preparations in sidelight frames are as required by the door manufacturer's labeling procedures
- Electric strikes are not permitted in sidelight frames

Self-Closing Devices

- Includes; closers; combination closer/holders (surface or floor mounted, concealed or semi-concealed); and spring hinges
- Each sidelight frame must be reinforced for a separate self-closing device for each door leaf it contains. Exceptions; Reinforcing for self-closing device is not mandatory on; the inactive leaf of pairs in mechanical equipment rooms; or when floor closers (pivot) or spring hinges are used. When spring hinges are used, minimum of 2 per door leaf required.

Gaskets, Weather-Stripping and Door Seals

- 'Listed/Classified' products are permitted on all SWF labeled sidelight frames up to 1-1/2 hour rating. Such products are supplied and installed by others.

B) ANCHORAGE

- Each jamb (and head where required) shall be provided with anchors to suit the partition in which it will be installed.
- Anchors (except EWA type) shall be positioned inside the jamb profile directly above or below each hinge on the hinge jamb and directly opposite on the strike jamb. Units up to 62" (1575mm) O/A height shall receive 2 anchors per jamb; up to 92" (2340mm) O/A height - 3 per jamb; up to 122" (3100mm) O/A height - 4 per jamb; and up to 144" (3660mm) O/A height - 5 per jamb
- All mullions adjacent to door rabbet openings are supplied with 1 loose 12 gage base anchor, screw fixed through the face and bolted to the floor on site (bolts and shields are supplied and installed by others).
- Sills in 1-1/2 hour sidelight frames are anchored to the floor with continuous 16 gage channel, cut and notched to fit between those vertical members extended to the floor. Channels are shipped loose for site installation.
- All sills with face widths exceeding 4" (102mm) are supplied with 2" (50mm) wide, 16 gage channel clips, welded in place at 14" (350mm) on center (maximum).

Unit Masonry Walls

- Loose masonry wall anchors are permitted in 3/4, 1/2 and 1/3 hour sidelight and window frames up to; 96" (2450mm) O/A width; and 98" (2490mm) O/A height
- Captive (welded-in place) masonry wall anchors are required in all; 1-1/2 and 1 hour sidelight frames; all sidelights and windows over 96" (2450mm) O/A width; and all sidelight and windows over 98" (2490mm) O/A height
- Heads of all 1-1/2 and 1 hour sidelight frames must be punched and dimpled for 3/8" (9.5mm) diameter machine bolts and provided with Existing Wall Anchor (EWA) guides, welded in place at 16" (400mm) on center (maximum), 16" (400mm) from each end. (Bolts and shields are supplied and installed by others)
- Heads of 1-1/2 and 1 hour sidelight frames must have the faces continuously reinforced with 3/4" x 3/4" (19 x 19mm) x 12 gage angles, tack welded in place at 24" (600mm) on center (maximum).

Cast-In Place Concrete, Structural Steel and Existing Unit Masonry Walls

- Sidelight and window frames have jambs pierced and dimpled for 3/8" (9.5mm) diameter machine bolts with Existing Wall Anchor (EWA) guides welded in place for all sizes, constructions and ratings. Bolts and shields are supplied and installed by others
- Units up to 64" (1625mm) O/A height shall receive 3 anchors per jamb; up to 90" (2280mm) O/A height - 4 per jamb; up to 116" (2950mm) O/A height - 5 per jamb; and up to 144" (3660mm) O/A height - 6 per jamb.

Drywall Partitions

- A unit is considered "in drywall" when either the jambs, head or sill contact a drywall and steel or wood stud partition.
- All sidelight and window assemblies in drywall partitions must wrap the entire fire separation by 3/4" (19mm) minimum. Butt applications are not permitted in drywall and steel or wood stud partitions.
- Steel Stud or 'Z' Anchors (SSA), Combination Stud Anchors (CSA) and Wood Stud Anchors (WSA) are permitted in all sizes, sidelight and window constructions, for ratings up to and including 1-1/2 hour. All SSA, CSA and WSA type anchors must be captive (welded-in place).
- 3/4, 1/2 and 1/3 hour units installed on drywall kneewall partitions, must be

supported on captive 12 gage channel extensions and angle brackets at 33" (840mm) on center (maximum), 2 per unit minimum. 1 and 1-1/2 hour sidelights are not permitted on drywall kneewall partitions.

C) PROFILE RESTRICTIONS

Jambs, Heads and Sills

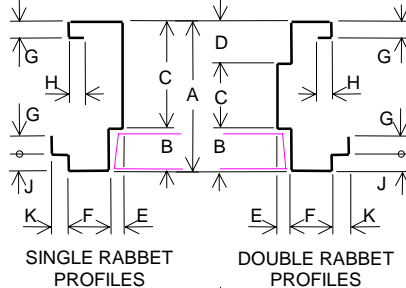
- Jamb Depths (A) ; minimum - UL, ULC, FM ; 4" (100mm) - WH ; 5-3/4" (146mm) ; maximum - ULC ; 9" (229mm) - UL, WH, FM; 10-1/2" (267mm)
- Sills may be recessed from jambs and mullions. Minimum JD of recessed sill; 4-1/4" (107mm) and sill must be double rabbeted. (Recessed single rabbet profiles are not permitted)
- Face Widths (F) ; minimum - 1" (25mm) except at the perimeter of doors - 1-1/4" (32mm) at the perimeter of doors ; maximum - 12" (305mm)

Note : The face width appearance of sections may be increased by constructing a labelled panel opening and adding 20 gage fascia panels, tack welded into the opening, flush with the surrounding section faces. The exposed joints are body filled and ground smooth. See items 44 to 46 or 53 to 55 below, for labelled panel constructions.

- Shadow-Line Face Widths (K) ; minimum - 1/4" (6mm), maximum - 4" (102mm)
- Stop Width (C); minimum - 1" (25mm) for all profiles, no maximum
- Stop Heights (E); 1 and 1-1/2 hour sidelight frames - 3/4" (19mm) minimum ; 3/4, 1/2 and 1/3 hour sidelights and windows - 5/8" (16mm) min.
- Returns (G), 2nd or Drywall Returns (H) and Shadow Line Returns (J) ; minimum - 1/4" (6mm), maximum - 3 1/4" (20mm)
- Hospital profile sections are permitted
- Sanitary bases, 6" (150mm) maximum off floor are permitted

Mullions and Center Rails

- Jamb Depths (A) ; minimum - UL, ULC, FM ; 4" (100mm) - WH ; 5-3/4" (146mm) ; maximum - ULC ; 9" (229mm) - UL, WH, FM ; 10-1/2" (267mm)
- Center rails may be recessed from jambs and mullions. Minimum JD of recessed center rails; UL, ULC, FM - 4-1/4" (107mm), WH - 5-5/8" (142mm). Recessed center rails must be double rabbeted (single rabbet profiles are not permitted)
- Face Widths (F); minimum - 1" (25mm) except at the perimeter of doors - 1-1/4" (32mm) at the perimeter of doors ; maximum - 12" (305mm) (Also see 'Note' at item 28, above)
- Stop Widths (C); minimum - 1" (25mm), no maximum
- Stop Heights (E); 1 and 1-1/2 hour sidelight frames - 3/4" (19mm) minimum ; 3/4, 1/2 and 1/3 hour sidelights and windows - 5/8" (16mm) min.
- Hospital profile mullions are permitted
- Sanitary bases, 6" (150mm) maximum off floor are permitted



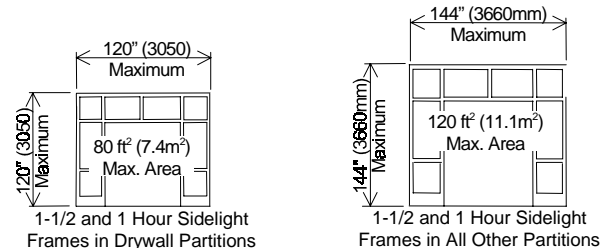
A - Jamb Depth
 B - Door Rabbet
 C - Stop Width
 D - Opposite Rabbet
 E - Stop Height
 F - Face Width
 G - Return
 H - 2nd or Drywall Return
 J - Shadow Line Return
 K - Shadow Line Face Width

Note : Single rabbet profiles are available with UL, ULC and FM labels only

D) DESIGN CRITERIA

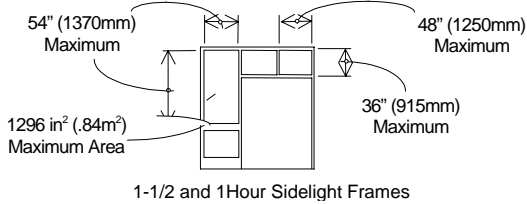
1-1/2 Hour and 1 Hour Sidelight Frames

- Maximum O/A size of 1-1/2 and 1 hour sidelight frames in drywall partitions; 80 ft² (7.4m²) area with neither the width nor height exceeding 120" (3050mm)
- Maximum O/A size of 1-1/2 and 1 hour sidelight frames in all other partition types; 120 ft² (11.1m²) with neither the width nor height exceeding 144" (3660mm)



FIRE WINDOW AND SIDELIGHT FRAME SPECIFICATIONS AND REQUIREMENTS *2 (Back Cover)

- 44. Factory installed panels are required in 1-1/2 hour sidelight assemblies. Minimum panel construction for 1-1/2 and 1 hour assemblies; 1 sheet of 20 gage steel laminated to each face of 3/8" (9.5mm) thick inorganic cement board, nominal density - 110 pcf (1760kg/m³)
- 45. Maximum individual exposed transom panel opening size; 48" (1250mm) width; 36" (915mm) height
- 46. Maximum individual exposed side panel opening size; 1296 in² (.84m²) area with neither the exposed width nor height exceeding 54" (1370mm)

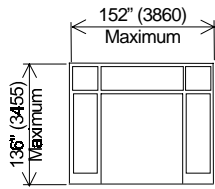


1-1/2 and 1 Hour Sidelight Frames

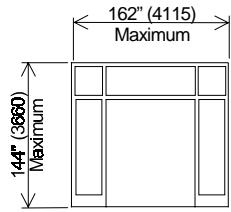
- 47. Glazing is permitted in UL and WH 1 hour sidelight frames only. All UL and WH 1 hour 'Listed/Classified' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications, are permitted in UL and WH labeled sidelight frames up to 1 hour rating. Refer to Testing Authority listings for limitations on specific glazing materials. Glazing materials are not supplied or installed by SWF.
- 48. Minimum stop height in 1 and 1-1/2 hour sidelight frames; 3/4" (19mm)
- 49. The quantity of lights and/or panels in a sidelight assembly is not limited except by the dimensional restrictions outlined above
- 50. UL, ULC, WH and FM 1-1/2 hour glazed sidelights and 1 hour ULC or FM glazed sidelights are not permitted

3/4 Hour, 1/2 Hour and 1/3 Hour (With Hose Stream) Sidelight and Window Frames

- 51. Maximum O/A unit size of sidelight and window frames in drywall partitions; 152" width x 136" height (3860 x 3455mm)
- 52. Maximum O/A unit size of sidelight and window frames in all other partitions; 162" width x 144" height (4115 x 3660mm)

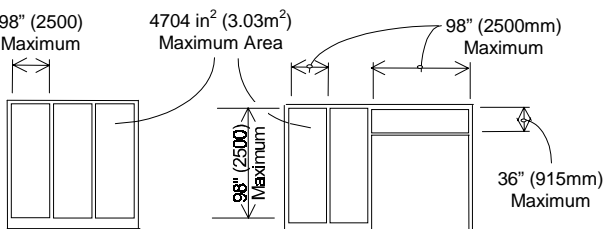


3/4, 1/2 and 1/3 Hour Sidelight Frames in Drywall Partitions



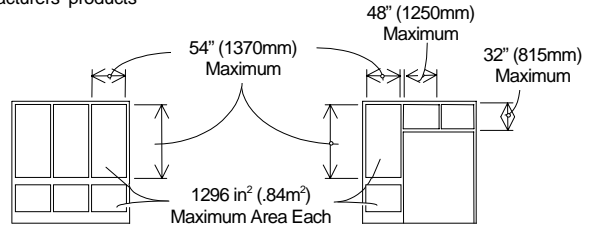
3/4, 1/2 and 1/3 Hour Frames in All Other Partitions

- 53. Factory installed panels are permitted. Minimum panel construction for 3/4, 1/2 and 1/3 hour assemblies; 1 sheet of 20 gage steel laminated to each face of 1/2" (12.7mm) thick non-rated GWB with 5/8" (16mm) high standard stops
- 54. Maximum individual exposed transom panel opening size; 48" (1250mm) width; 36" (915mm) height
- 55. Maximum individual exposed side panel opening size; 1296 in² (.84m²) area with neither the exposed width nor height exceeding 54" (1370mm)
- 56. Glazing is permitted in all 3/4, 1/2 and 1/3 hour sidelight and window frames. Glazing materials are not supplied or installed by SWF
- 57. All UL and WH 'Listed/Classified' glazing materials up to 1/4" (6mm) thick, in fixed single or multiple pane applications, are permitted in UL and WH labeled sidelight and window frames.
- 58. For UL or WH sidelight or window frames utilizing other than 1/4" (6mm) GWG, refer to Testing Authority listing for limitations on specific glazing materials
- 59. For UL, ULC and WH units, double glazed lights with 1 piece of 1/4" (6mm) GWG + 1 piece of 1/4" tempered glazing are permitted.
- 60. FM units require fixed single or multiple panels of 1/4" (6mm) thick GWG.
- 61. Where multiple panes of glazing materials are used, they may not be laminated together nor be sealed (thermopane) type units.
- 62. With Pilkington 'Listed' 6mm GPW glass, Pemko FG-3000 glazing compound and 5/8" (16mm) high standard stops individual exposed openings permitted are;
 - ; transom light opening sizes to; 98" (2500mm) width; and 36" (915mm) height ('Transom Openings' are defined as rabbet openings occurring directly above a transom mullion and immediately above door rabbet opening(s) only.)
 - ; sidelight opening sizes to; 4704 in² (3.03m²) area; with neither the width nor height exceeding 98" (2500mm)



3/4, 1/2 and 1/3 Hour Sidelight and Window Frames with Pilkington 'Listed' 6mm GWG and Pemko FG-3000 Glazing Compound

- 63. All other 1/4" (6mm) GWG, unless 'Listed' otherwise for 3/4, 1/2 and 1/3 hour sidelight and window frames with 5/8" high standard stops, are limited to the following individual exposed opening sizes;
 - ; transom light openings to; 1038 in² (.67m²) area; 48" (1250mm) width; 32" (815mm) height
 - ; sidelight openings to; 1296 in² (.84m²) area; with neither width nor height exceeding 54" (1370mm)
- 64. Refer to Testing Authority listings for limitations on individual Glazing Material Manufacturers' products



3/4, 1/2 and 1/3 Hour Sidelight and Window Frames with All Other 1/4" (6mm) GWG

- 65. Panels and glazing materials may be utilized in the same sidelight or window frame
- 66. The quantity of lights and/or panels in a sidelight or window assembly is not limited except by the dimensional restrictions outlined above
- 67. Field splices are permitted

1/3 Hour (Without Hose Stream) Sidelight and Window Frames

- 68. Available with UL and WH labels only
- 69. Maximum O/A unit size in drywall partitions; 152" (3860mm) width x 136" (3455mm) height
- 70. Maximum O/A unit size in all other partitions; 162" (4115mm) width x 144" (3660mm) height
- 71. Maximum individual glazed opening with all 'Listed 1/4" (6mm) GWG; 5268 in² (3.4m²) exposed area with neither the exposed width nor height exceeding 110-3/8" (2800mm) using 5/8" (16mm) high standard stops
- 72. All other requirements for section profiles and anchorage listed above, apply.

E) MISCELLANEOUS RESTRICTIONS

- 73. Combustible facings or finishes other than paint or electroplating are not permitted (ie; wood veneers, plastic, paper or fabric)
- 74. The following are not available in labelled sidelight or window frames; stainless steel; cladding; veneers; hollow metal removable mullions behind the doors; double acting units and UL, WH or FM 'Multi-opening' construction sidelights
- 75. Louvers or dampers are not permitted in sidelight or window frame openings
- 76. Doors may not be hinged off 'unsupported mullions' in 1-1/2 hour sidelight frames
- 77. Angled or radiused corners, heads or transoms are not permitted
- 78. Square or rectangular fixed sidelight or transom openings only. Radiused, arched, multi-sided or operable lights or panels are not permitted.
- 79. Communicating and 4-sided rabbet openings are permitted

F) OPTIONS AND CONSTRUCTIONS AVAILABLE

Hollow Metal Removable Mullions

- 80. Hollow metal removable mullions between the doors are permitted in all; 'Standard' and 'Contra-Swing' construction sidelight frames up to 1-1/2 hour rating; and all ULC 'Multi-Opening' construction sidelight frames up to 3/4 hour rating. Maximum individual rabbet opening on either side of removable mullion; 48" x 96" (1250 x 2450mm)
- 81. Doors may not be hinged off removable mullions

Double Egress (D/E) Sidelight Frames

- 82. Available up to 96" x 96" (2450 x 2450mm) rabbet size at 1-1/2 hour rating maximum with UL, ULC and FM labels only
- 83. Head profile at door opening may be single rabbet or 'double stopped' (like D/E jambs). Face width; ULC - 2" (50mm) minimum; UL, FM - 1-1/4" (32mm) minimum; 4" (102mm) maximum
- 84. Restricted to use with SWF Double Egress doors or UL 'Listed' D/E wood doors only

Contra-Swing (C/S) Sidelight Frames

- 85. Maximum rabbet opening; 2 x 48" x 96" (2 x 1250 x 2450mm) up to 1-1/2 hour rating with UL, ULC and FM labels only
- 86. SWF proprietary internal reinforcing required in all Contra-Swing mullions.
- 87. Contra-Swing mullions may be fixed or removable
- 88. Doors may not be hinged off removable Contra-Swing mullions
- 89. Contra-Swing mullions may have equal or unequal door and opposite rabbets.
- 90. Restricted to use with; D, Z or E-Series UL or FM doors; D, Z, E or H-Series ULC doors

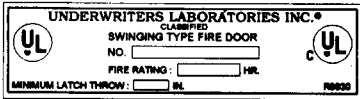
Multi-Opening Sidelight Frames

- 91. Available with ULC label only, 3/4 hour maximum rating
- 92. Maximum door rabbet sizes; 48" x 96" (1250 x 2450mm) singles; 96" x 96" (2450 x 2450mm) pairs
- 93. Quantity of door openings is unrestricted
- 94. May incorporate combinations of; singles; pairs; double egress or contra-swing doors; in D, E or Z-Series; and may incorporate fixed or removable mullions between the doors
- 95. Multi-Opening sidelight frames are not permitted in drywall partitions

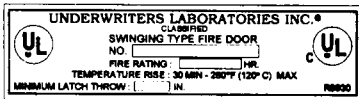
HOLLOW METAL FIRE DOOR LABELS

FIRE ENDURANCE RATINGS		TEMPERATURE RISE RATINGS (TRR'S)	FLEMING LABEL PART NUMBER						
			FM Mylar	ULC Metal	UL				WH Mylar
					Metal		Mylar		
Latch Throw	FED	Latch Throw	FED						
1/3, 1/2 and 1/3 Hr	No Limit	52055	52043	52050	52051	52016	52019	52037	
	250°C (450°F) at 1/2 Hr	52056	52041	52052	52053	-	-	52038	
1 and 1-1/2 Hr	No Limit	52056	52045	52050	52051	52015	52018	52037	
	650°F (340°C) at 1/2 Hr	-	52041	52052	52053	-	-	52038	
	450°F (250°C) at 1/2 Hr	-	52041	52052	52053	-	-	52038	
	250°F (120°C) at 1/2 Hr	-	52041	52052	52053	-	-	52038	
2 and 3 Hr	250°C (450°F) at 1 Hr	52057	52041	52027	52028	-	-	52038	
	No Limit	52057	52047	52050	52051	52014	52017	52036	

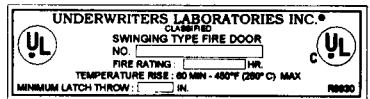
Metal - SWF Pt N° : 52050



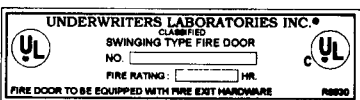
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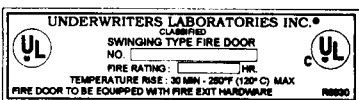
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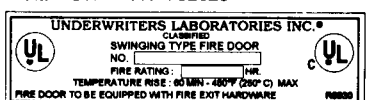
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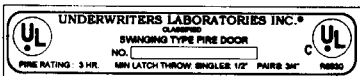
Metal - SWF Pt N° : 52053



Metal - SWF Pt N° : 52028



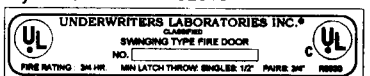
Mylar - SWF Pt N° : 52014



Mylar - SWF Pt N° : 52015



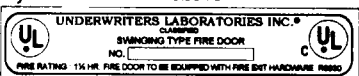
Mylar - SWF Pt N° : 52016



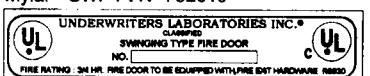
Mylar - SWF Pt N° : 52017



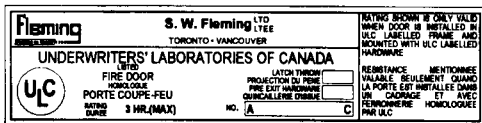
Mylar - SWF Pt N° : 52018



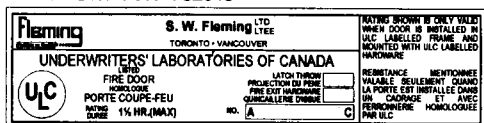
Mylar - SWF Pt N° : 52019



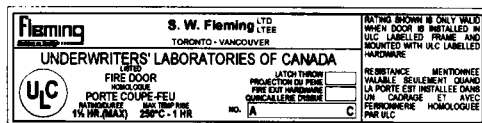
Metal - SWF Pt N° : 52047



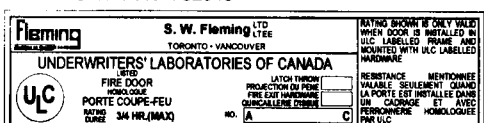
Metal - SWF Pt N° : 52045



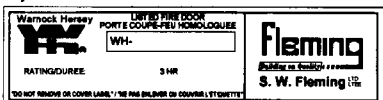
Metal - SWF Pt N° : 52041



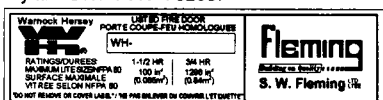
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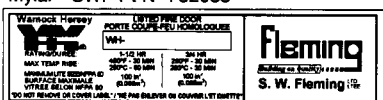
Mylar - SWF Pt N° : 52036



Mylar - SWF Pt N° : 52037



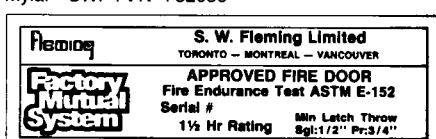
Mylar - SWF Pt N° : 52038



Mylar - SWF Pt N° : 52057



Mylar - SWF Pt N° : 52056



Mylar - SWF Pt N° : 52055



Mylar - SWF Pt N° : 52066



Used in conjunction with Part No's 52015, 52016, 52043, 52045, 52050, 52055, 52056 and 52037 for Acoustic Doors

FIRE DOOR FRAME, TRANSOM FRAME, SIDELIGHT AND WINDOW LABELS

PRODUCT	FIRE ENDURANCE RATING	FLEMING LABEL PART NUMBERS					
		FM Mylar	ULC Metal	UL		WH Mylar	
				Metal	Mylar		
Frames	1/3, 1/2 and 3/4 Hr	Embossed	52011	52026	52030	52002*	
	1 and 1-1/2 Hr	Label or	52011	52026	52030	52002*	
	2 and 3 Hr	52035	52012	52020	-	52001	
Transom Frames	Glazed	1/3, 1/2 and 3/4 Hr	52058	52007	52021	52032	52002
		1/3, 1/2 and 3/4 Hr	52054	52011	52022	52031	52002
		1 and 1-1/2 Hr	52054	52011	52022	52031	52002
Sidelight Frames	Panels	2 and 3 Hr	-	52012	52022	52031	52001
		1/3, 1/2 and 3/4 Hr	52058	52007	52023	52032	52004
		1/3, 1/2 and 3/4 Hr	52054	52010	-	-	52004
Windows	1 and 1-1/2 Hr	52054	52010	-	-	-	
Windows	1/3, 1/2 and 3/4 Hr	52059	52013	52025	52033	52004	

* : For WH D/E Frames use SWF Pt N° 52003

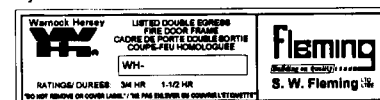
Mylar - SWF Pt N° : 52001



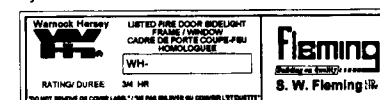
Mylar - SWF Pt N° : 52002



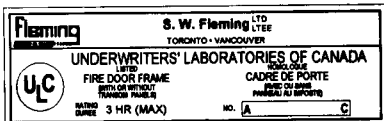
Mylar - SWF Pt N° : 52003



Mylar - SWF Pt N° : 52004



Metal - SWF Pt N° : 52012



Metal - SWF Pt N° : 52020

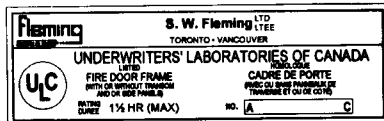


Metal - SWF Pt N° : 52026

Mylar - SWF Pt N° : 52030



Metal - SWF Pt N° : 52011

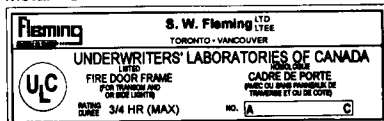


Metal - SWF Pt N° : 52021

Mylar - SWF Pt N° : 52032

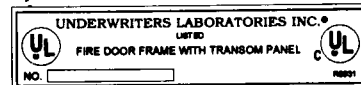


Metal - SWF Pt N° : 52007

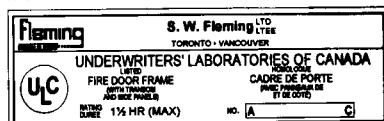


Metal - SWF Pt N° : 52022

Mylar - SWF Pt N° : 52031



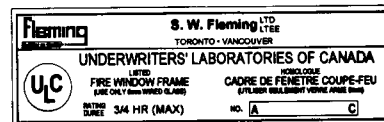
Metal - SWF Pt N° : 52010



Metal - SWF Pt N° : 52023

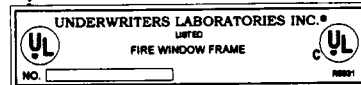


Metal - SWF Pt N° : 52013

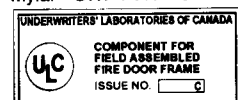


Metal - SWF Pt N° : 52025

Mylar - SWF Pt N° : 52033



Mylar - SWF Pt N° : 52069



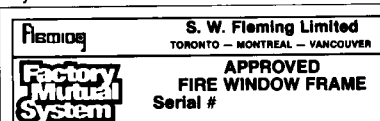
Used with Pt N°s 52011 and 52012 for KD and KD-DW Series frames

Mylar - SWF Pt N° : 52070



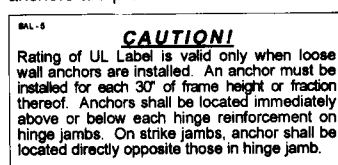
Used with Pt N°s 52020, 52026 and 52030 for KD and KD-DW Series frames

Mylar - SWF Pt N° : 52059

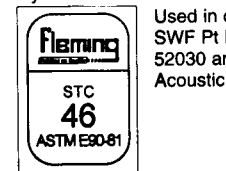


Sticker - SWF Pt N° : 52071

Used on frame product when loose wall anchors are provided



Mylar - SWF Pt N° : 52066



Used in conjunction with SWF Pt N°s 52011, 52026, 52030 and 52002 for Acoustic Frames

Embossment



Appears on all KD and KD-DW Series, 'Standard' construction hinge jambs only

REFERENCED OR RECOMMENDED STANDARDS AND PUBLICATIONS

<p>List of Equipment and Materials, Volume II, Building Construction</p> <p>Standard Method for Fire Tests of Door Assemblies Publication Number: CAN4-S104-M80</p> <p>Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104 Publication Number: CAN4-S105-M85</p> <p>Standard Method for Fire Tests of Window and Glass Block Assemblies Publication Number: CAN4-S106-M80</p> <p>Available from: Underwriters Laboratories of Canada 7 Crouse Road, Scarborough, Ontario M1R 3A9 Attn : Standards Department</p>	<p>Directory of Listed Products, Volume 2</p> <p>Available from: Inchcape Testing Services NA Inc. (Warnock Hersey Professional Services) 3933 US Route 11, Courtland, NY 10345 Attn : Accreditation Department</p>
<p>Building Materials Directory</p> <p>Standard for Fire Test for Door Assemblies Publication Number: UL10b, 8th Edition</p> <p>Outline of Proposed Investigation for Fire Door Frames Publication Number: UL63</p> <p>Standard for Fire Tests for Window Assemblies Publication Number: UL9, 6th Edition</p> <p>Available from: Underwriters Laboratories, Incorporated 333 Pfingsten Road, Northbrook, Illinois 60062 Attn : Publications Stock</p>	<p>Approval Guide, Equipment, Materials and Services</p> <p>Available from: Factory Mutual Engineering and Research 1151 Boston-Providence Turnpike, Norwood, MA 02602</p> <p>Fire Doors and Windows Publication Number: NFPA 80</p> <p>Life Safety Code Publication Number: NFPA-101</p> <p>Available from: National Fire Protection Association Battery March Park, Quincy, MA 02269</p> <p>Hardware for Labelled Doors</p> <p>DHI Installation Guide</p> <p>Available from: Door and Hardware Institute 14170 Newbrook Drive, Chantilly, VA 22021-2223</p>

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*1 All conditions not covered on Pages 2 to 5 must comply with ULC File Number CR-316, UL File Number R8930, FM File Number J10K6AO.AC, WH Reference Number L14896 for Hollow Metal Fire Doors and must be installed in accordance with NFPA 80.
*2 All conditions not covered on Pages 6 to 15 must comply with ULC File Number CR-244, UL File Number R8931, FM File Number J10K6AO, WH Reference Number L14896 for Fire Door Frames and Windows, the Standard for Fire Door Frames (CAN4-S105/UL63) and must be installed in accordance with NFPA 80.
*3 Constructions designated with IPLP (In-Plant Labelling Program) may be factory labelled by either SWF or Authorized Fleming Distributors under Follow-Up Service Procedures issued by UL, ULC, FM or WH. Constructions not carrying the IPLP designation must be factory labelled by SWF.
Field application of Fire Labels is not permitted except under UL, ULC, FM or WH Special Field Inspection Programs. Contact Technical Services Department, SWF, Ajax, for further information. This Specification applies only to S. W. Fleming Limited products. Building Codes or Local Bylaws may impose more restrictive requirements which supercede those indicated herein. This publication, developed by S. W. Fleming Limited, to provide guidance on the fire rating of commercial steel door and frame products, contains advisory information only and is provided as a public service. A continuous Research and Development Program is in place, therefore S. W. Fleming Limited reserves the right to incorporate changes at any time without notice and disclaims all liability of any kind, for the use or adaptation of the materials contained herein.
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CHANGES IN THIS EDITION

- ❑ Light sizes in 1-1/2 hour doors with 'Listed' 1/4" (6mm) GWG increased. With Pilkington 'Listed' 6mm GPW® glass and Pemko FG-3000 glazing compound, maximum exposed glass sizes have increased to; 432 in² (.28m²) area; width of 12" (305mm); *and* heights of 36" (915mm). Unless 'Listed' otherwise, all other 1/4" (6mm) GWG is limited to; 100 in² (.06m²) area per leaf; 12" (305mm) widths; *or* 33" (840mm) heights. The Pilkington/Pemko materials permit the use of lights up to 12" x 36" (305 x 915mm) instead of 10" x 10" (250 x 250mm), 6" x 16" (150 x 400mm) or 3" x 33" (75 x 840mm). (See Page 4, items 33 and 36; Page 5, items 70 and 91)
- ❑ Light sizes in 3/4, 1/2 and 1/3 hour (with hose stream) doors with 'Listed' 1/4" (6mm) GWG enhanced. Pilkington 'Listed' 6mm GPW® glass and Pemko FG-3000 glazing compound extend the maximum individual exposed light sizes to; 2856 in² (1.84m²) area; widths up to 34" (865mm); *and* heights up to 84" (2135mm). All other 1/4" (6mm) GWG, unless 'Listed' otherwise, is restricted to maximum exposed area of 1296 in² (.84m²) per light; widths *or* heights limited to 54" (1370mm). This authorizes the use of full light (Type "FG") doors up to 48" x 96" (1250 x 2450m) nominal leaf size with the Pilkington/Pemko glazing materials. (See Page 4, items 34 to 36; Page 5, items 70 and 91)
- ❑ Double glazed lights in 3/4, 1/2 and 1/3 hour doors, transoms, sidelight and window assemblies using 1 piece of any 'Listed' 1/4" (6mm) GWG + 1 piece of 1/4" (6mm) tempered glazing have been approved. Now energy conservation and sound abatement can be affectively addressed in lighted fire rated product. (See Page 4, item 25; Page 11, item 37; Page 15, item 59)
- ❑ H-Series Clad doors added (See Page 5, item 85)
- ❑ Individual exposed glazed transom openings in 3/4, 1/2 and 1/3 hour (with hose stream) transom and sidelight frames with Pilkington 'Listed' 6mm GPW® glass and Pemko FG-3000 glazing compound have been increased to permit; exposed transom lights up to 3528 in² (2.28m²) area; 98" (2500mm) width; *and* 36" (915mm) height. Individual exposed sizes for all other 1/4" (6mm) GWG, unless 'Listed' otherwise, is limited to; 1296 in² (.84m²) area; 48" (1250mm) width; *or* 32" (815mm) height. This eliminates the vertical transom mullions previously required over pairs of doors. (See Page 11, item 40; Page 15, item 62)
- ❑ Maximum combined door/transom rabbet height for 3/4, 1/2 and 1/3 hour transom frames have been increased from 120" (3050mm) in all wall types to 136" (3450mm) in drywall and 144" (3660mm) in all other partitions. (See Page 11, item 42; Page 12, item 91)
- ❑ Maximum over-all unit sizes for 3/4, 1/2 and 1/3 hour (with hose stream) sidelight and window frames in drywall partitions have been enlarged from 80 ft² (7.4m²) with neither width *or* height exceeding 120" (3050mm) to 152" (3860mm) width *and* 136" (3455mm) height. (See Page 15, item 51)
- ❑ Maximum over-all unit sizes for 3/4, 1/2 and 1/3 hour (with hose stream) sidelight and window frames in all other partitions have been increased from 120 ft² (11.1m²) with neither width *or* height exceeding 144" (3660mm) to 162" (4115mm) width *and* 144" (3660mm) height. (See Page 15, item 52)
- ❑ Maximum individual exposed glazed openings for 3/4, 1/2 and 1/3 hour (with hose stream) sidelight or window units with Pilkington 'Listed' 6mm GPW® glass and Pemko FG-3000 glazing compound have been increased to; 4704 in² (3.03m²) area with neither exposed width *or* height exceeding 98" (2500mm). With all other 1/4" (6mm) GWG the maximum individual exposed openings remain at; 1296 in² (.84m²) area with neither exposed width *or* height exceeding 54" (1370mm). (See Page 15, items 62 and 63)
- ❑ Maximum over-all unit sizes for 1/3 hour (without hose stream) sidelight and window frames in drywall partitions have been revised from 158" (4015mm) width and 115" (2920mm) height to 152" (3860mm) width and 136" (3455mm) height. (See Page 15, item 69)
- ❑ Maximum over-all unit sizes for 1/3 hour (without hose stream) sidelight and window frames in all other partitions have been extended from 158" (4015mm) width and 115" (2920mm) height to 162" (4115mm) width and 144" (3660mm) height. (See Page 15, item 70)
- ❑ Field splices in transom, sidelight and window frames have been added (See Page 15, item 67)
- ❑ Minimum return, 2nd or drywall return, shadow-line face width and shadow-line return are reduced from 3/8" (9mm) to 1/4" (6mm). (See Page 11, items 23 and 26; Page 14, items 29 and 32)