

# RECOMMENDED SELECTION AND USAGE GUIDE FOR COMMERCIAL STEEL DOOR AND FRAME PRODUCTS

---

## PURPOSE

To provide architects, specifiers and users with concise, yet comprehensive guidelines for the selection and usage of steel doors and frames for commercial, industrial, institutional and multi-unit housing building construction.

## SCOPE

The selection of steel doors and frames for specific applications is based on a variety of criteria including frequency and severity of use, fire and life safety code requirements, thermal insulation values, security and appearance.

Table I, Opening Classifications, outlines commercial, industrial, institutional and multi-housing building types and classifies typical door openings within these building types according to normal duty of performance requirements. These duty requirements can be used to select appropriate door and frame constructions and designs from Tables II and III.

Table II, Steel Door Classifications, relates basic steel door constructions, face sheet gauges, sizes and glazing configurations to the duty of performance which may be anticipated.

Table III, Steel Frame Classifications, relates basic steel frame constructions, gauges, and sizes to the duty of performance which may be anticipated.

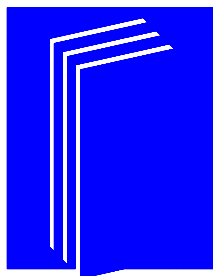
It is recommended that this Selection and Usage Guide be used in conjunction with the CSDMA publications, “Specifications for Commercial Steel Doors and Frames”, the “Canadian Fire Labeling Guide for Steel Doors and Frames”, and the “Recommended Dimensional Standards for Commercial Steel Doors and Frames”. For conditions beyond the scope of this document, such as stainless steel, lead-lined, sound or blast retardant, bullet resistant and detention security steel doors and frames, please refer to the Product Directory on the Association website and contact an appropriate member for assistance.

Recommendations contained in this document are the opinions of member manufacturers, based on their combined experience and individual members classify the duty of their specific product lines.

*All dimensions indicated are nominal. Requirements are stated in both imperial and corresponding hard metric values. Each is considered the standard for its measurement system. Users are advised not to mix measurement systems. All products, constructions and options included in this publication are not necessarily available from each member manufacturer. Users are encouraged to contact member manufacturers to assist in product selection to meet their project requirements.*

---

**CANADIAN  
STEEL DOOR  
MANUFACTURERS  
ASSOCIATION**



**L'ASSOCIATION  
CANADIENNE  
DES FABRICANTS  
DE PORTES**

**TABLE I - OPENING CLASSIFICATIONS**

Legend S = Standard Duty M = Medium Duty H = Heavy Duty X = Extra-Heavy Duty		OPENING TYPES																	
		Entrance	Exit (exit only function)	Stairwell	Corridor (cross-corridor)	Room Access	Washroom	Utility	Storage	Kitchen	Operating Room	Exam Room	Production	Office	Classroom	Lecture, Conference Room, Auditorium	Gymnasium or Therapy Area	Dressing Room	Cafeteria, Lunch Room
BUILDING TYPES																			
COMMERCIAL	Arena	H	M	H	H	M	M	M	M	M				M		M		H	M
	Art Gallery	H	M	M	M	S	S	S	M				M	M	M				M
	Bank	H	M	M	M	S	S	S	S				S						S
	Club	M	S	M	M	S	M	S	S	M			S		M	M	M	M	
	Department Store	H	S	M	M	S	M	S	S	M			S					S	M
	Mall	H	M	M	M	S	M	S	S	M			S					S	M
	Office Building	M	S	M	M	S	S	S	S	M			S					S	M
	Restaurant	H	S	M	M		M	S	S	M			S					S	
	Studio (TV/Radio)	M	S	M	M	S	S	S	S				S	S				S	M
Theater	H	M	M	M	S	M	S	S				M	S						
INDUSTRIAL	Factory	M	S	M	M		M	S	S	M			M	M				M	M
	Filtration Plant	H	M	H	H		M	M	M				H	M				M	
	Generating Station	H	M	M	M		M	M	S				M	M				M	
	Laboratory	M	S	M	M		S	S	M	M			M	S		M		S	M
	Parking Garage	H	M	M				S	S					S					
	Sewage Treatment Plant	H	M	H	H		M	M	M				H	M				M	
	Warehouse	M	S	M	M		S	S	S				M	M				M	M
	Workshop/Hanger	M	S	M	M		M	S	S	M			M	M				M	M
INSTITUTIONAL	Community College	X	H	H	H		H	M	M	H		M		M	M	H	H	H	H
	Hospital	H	M	H	M	M	M	M	M	H	H	M		M	M	M	M	M	H
	Jail	H	H	X	X	X	H	H	H	H				H				H	H
	Library	H	M	M	M	S	M	S	S					M	M	M			H
	Military	H	H	H	H	M	M	S	M	H				M	H	H	H	H	H
	Museum	H	M	M	M	S	M	S	M					M	M	M			H
	Penitentiary	X	X	X	X	X	X	X	X	X	X	X		H	H	H	X	X	H
	Police Station	H	H	X	X	X	H	H	H	H				H		H	H	H	H
	Reformatory	X	X	X	X	X	X	H	H	X	X	X		H	H	H	X	X	H
	School	X	H	H	H		H	M	M	H		M		M	M	H	H	H	H
University	X	H	H	H		H	M	M	H		M		M	M	H	H	H	H	
HOUSING	Convalescent Home	M	S	M	M	M	S	S	S	H		M		M			M	S	M
	Dormitory	H	M	M	M	M	H	S	M										
	Home for the Aged	M	M	M	M	M	M	S	S	H		M		M		M	M	S	M
	Hotel	H	M	M	M	S	M	S	S	H				S		M	M	M	
	Motel	M	M	M	M	S	M	S	S					M					
Condo/Apartment	M	M	M	M	S		S	S								M	M		

Doors in Institutional Buildings are in areas where individuals are not under legal restraint. Where individuals are under legal restraint, detention security (prison) doors should be specified.

**TABLE II - STEEL DOOR CLASSIFICATIONS**

<u>Legend</u> S = Standard Duty M = Medium Duty H = Heavy Duty X = Extra-Heavy Duty NR = Not Recommended	<b>CONFIGURATIONS</b> (Glazing and Maximum Nominal Leaf Size)					
	Slab, View, Narrow or Half Light			Multi-Light or Full Light		
<b>CONSTRUCTION AND FACE SHEET GAUGE</b>	900 x 2150 (3' x 7')	1200 x 2450 (4' x 8')	1200 x 3050 (4' x 10')	900 x 2150 (3' x 7')	1200 x 2450 (4' x 8')	1200 x 3050 (4' x 10')
LC 20	S	NR	NR	NR	NR	NR
LC 20 **	M	NR	NR	NR	NR	NR
LC 18	M	M	M	M	M	NR
LC 18 *	H	H	H	H	H	H
LC 16	H	H	H	H	H	H
LC 16 *	X	X	X	X	X	X
LC 14 *	X	X	X	X	X	X
WS 18 *	H	H	H	H	H	H
WS 16 *	X	X	X	X	X	X
WS 14 *	X	X	X	X	X	X

**NOTES:**

LC = Laminated Core Door Construction

All laminated core types can be used in fire-rated steel doors

Core Types: Honeycomb - For exterior doors a top cap is recommended to prevent moisture from entering the door

Polystyrene - Insulating core with a thermal value of RSI 1.0 (R 6.0) minimum.

Polyisocyanurate - Insulating core with a thermal value of RSI 1.9 (R11.0) minimum

Temperature Rise Rated - Mineral core used in fire-rated doors to achieve a 250° C (450°F) at 60 minutes temperature rise

Vertical Steel Stiffeners - Stiffeners laminated to each face sheet with voids between stiffeners filled with fiberglass batt type material.

WS = Welded Stiffener Door Construction

Vertical steel stiffeners are welded to each face sheet with voids between stiffeners filled with fiberglass batt type material.

\* = Adhesive assisted edge seam or tack-welded edge seams or continuously welded edge seams

\*\* = Adhesive assisted edge seam or tack-welded edge seams

**TABLE III - STEEL FRAME CLASSIFICATIONS**

<u>Legend</u> S = Standard Duty M = Medium Duty H = Heavy Duty X = Extra-Heavy Duty NR = Not Recommended	<b>MAXIMUM FRAME RABBET OPENINGS</b>					
	Singles			Pairs		
<b>CONSTRUCTION AND GAUGE</b>	900 x 2150 (3' x 7')	1200 x 2450 (4' x 8')	1200 x 3050 (4' x 10')	1800 x 2150 (6' x 7')	2400 x 2450 (8' x 8')	2400 x 3050 (8' x 10')
Slip-On 18	S	S	NR	S	NR	NR
Slip-On 16	M	M	NR	M	M	NR
KD 18	S	S	NR	S	NR	NR
KD 16	M	M	M	M	M	M
KD 14	H	H	H	H	H	H
Welded 18	S	S	NR	S	S	NR
Welded 16	M	M	M	M	M	M
Welded 14	X	X	X	X	X	X

**NOTES:**

Slip-On Construction: For installation in rough stud openings after drywall has been applied.

KD = Knocked-down: Components are assembled as a complete unit prior to installation.

Welded: Refer to CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Product - 08 11 00", Section 2.2.2 and Appendix 2

## CSDMA Membership

**All Steel Doors 2000 Limited**  
130 Milner Avenue  
Scarborough, Ontario M1S 3R3  
Tel: (416) 297-8500  
Toll Free: (877) 353-0937  
Fax: (416) 297-0374  
E-Mail: sales@asdoors.com

**Daybar Industries Limited**  
50 West Drive  
Brampton, Ontario L6T 2J4  
Tel: (905) 625-8000  
Fax: (905) 624-4204  
E-Mail: sales@daybar.com  
Website: www.daybar.com

**Metal Door Limited**  
P.O. Box 638  
Gormley, Ontario L0H 1G0  
Tel: (905) 888-5151  
Fax: (905) 888-0647  
E-Mail: info@metaldoorltd.com  
Website: www.metaldoorltd.com

**Ambico Limited**  
1120 Cummings Avenue  
Ottawa, Ontario K1J 7R8  
Tel: (613) 746-4663  
Toll Free: (888) 423-2224  
Fax: (800) 465-8561  
E-Mail: specialized@ambico.com  
Website: www.ambico.com

**Fleming-Baron Door Products**  
101 Ashbridge Circle  
Woodbridge, Ontario L4L 3R5  
Tel: (416) 749-2111  
Toll Free: (877) 777-9354  
Fax: (905) 851-8346  
Website: www.flemingbaron.com

**M. J. Daley Manufacturing Co. Ltd.**  
425 Comstock Road  
Scarborough, Ontario M1L 2H4  
Tel: (416) 752-2030  
Toll Free: (888) 423-2539  
Fax: (416) 752-6002  
Toll Free Fax: (888) 899-9883  
E-Mail: mjdaley@interlog.com

**Gensteel Doors**  
4950 Hickmore Street  
St. Laurent, Quebec H4T 1K6  
Tel: (514) 733-3562  
Toll Free: (866) 436-7833  
Fax: (514) 733-1932  
E-Mail: sales@gensteeldoors.com  
Website: www.gensteeldoors.com

**Apex Industries, Inc.**  
100 Millennium Blvd.  
Moncton, New Brunswick E1C 8M6  
Tel: (506) 857-1600  
Fax: (506) 857-1604  
E-Mail: rlkelly@apexindustries.com  
Website: www.apexindustries.com

**Trillium Steel Doors Limited**  
98 Stafford Drive  
Brampton, Ontario L6W 1L4  
Tel: (905) 452-1333  
Fax: (905) 452-9475  
E-Mail: info@trilliumdoors.com  
Website: www.trilliumdoors.com

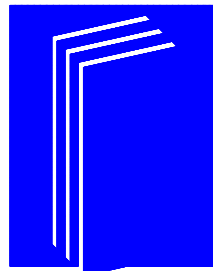
**Greensteel Industries Ltd.**  
975 Logan Avenue  
Winnipeg, Manitoba R3E 1P3  
Tel: (204) 774-4533  
Fax: (204) 786-5899  
Website: www.greensteeldoor.com

**Artek Door (1985) Limited**  
1294 South Service Road West  
Oakville, Ontario L6L 5T7  
Tel: (905) 842-6695  
Toll Free: (888) 315-3667  
Toll Free Fax: (888) 882-7835  
E-Mail: sales@artekdoor.com  
Website: www.artekdoor.com

**Les Métaux Tremblay Inc.**  
3010, boul Losch  
St-Hubert, Quebec, J3Y 3V8  
Tel: (450) 676-9141  
Fax: (450) 462-0082  
E-Mail: reception@mtremblay.com  
Website: www.mtremblay.com

**Vision Hollow Metal Limited**  
400 Zenway Blvd.  
Unit # 1,  
Woodbridge, Ontario L4H 0S7  
Tel: (905) 851-1211  
Fax: (905) 851-1261  
E-Mail: info@visionhollowmetal.com  
Website: www.visionhollowmetal.com

**CANADIAN  
STEEL DOOR  
MANUFACTURERS  
ASSOCIATION**



**L'ASSOCIATION  
CANADIENNE  
DES FABRICANTS  
DE PORTES**

One Yonge Street, Suite 1801, Toronto, Ontario, M5E 1W7  
Tel: (416) 363-7845 × Fax: (416) 369-0515 × E-Mail: info@csdma.org × Website: www.csdma.org