COMMERCIAL DOOR
MANUFACTURING

Commercial Door Manufacturing Inc.
2914 Girard NE
Albuquerque, NM 87107
www.CommercialDoorMfg.com
Phone: 505-881-1034 Fax 505-884-1484

Technical Summary HMMA 890-06

Hollow Metal by HMMA

Table of Contents

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HMMA Guide Specifications

Hollow Metal Guide Specifications	HMMA 860 - Hollow Metal Doors & Frames	HMMA 861- Commercial Hollow Metal Doors and Frames	HMMA 862 - Commercial Security Hollow Metal Doors and Frames	HMMA 863 - Detention Security Hollow Metal Doors and Frames	HMMA 865 - Swinging Sound Control Hollow Metal Doors and Frames
Intended applications	For use in apartment and other building projects where traffic is light and hard usage is not anticipated	For use in commercial and industrial projects, where rigorous use is anticipated . . . schools, office buildings, hospitals, industrial buildings, hotels, convention centers, nursing homes	Commercial security applications such as airports, convention centers, hotels and offices, and foreign and domestic buildings such as, embassies, offices and barracks.	For use in jails, prisons, detention centers and secured areas in hospitals and courthouses	For applications in TV, radio and sound studios, theaters and music rooms
Doors					
Face Sheets, Interior Doors	0.032 in. (0.8mm)	0.042 in. (1.0mm)	0.067 in. (1.7mm)	0.067 in. (1.7mm) 0.093 in. (2.3mm)	0.042 in. (1.0mm)
Face Sheets, Exterior Doors	0.042 in. (1.0mm)	0.053 in. (1.3mm)	0.067 in. (1.7mm)	0.067 in. (1.7mm) 0.093 in. (2.3mm)	0.042 in. (1.0mm)
Material Type	Pickled and oiled, hot rolled, or A60 Galvineal	Pickled and oiled, hot rolled, or A60 Galvineal	Pickled and oiled, hot rolled, or A60 Galvineal	Pickled and oiled, hot rolled, or A60 Galvineal	Pickled and oiled, hot rolled, or A60 Galvineal
Minimum thickness	1¾ in. (44.4mm)	1¾ in. (44.4mm)	1¾ in. (44.4mm)	2 in. (50.8mm)	1¾ in. (44.4mm)
Stiffeners/Core	0.026 in. (0.6mm)	0.026 in. (0.6mm)	0.042 in. (1.0mm)	0.042 in. (1.0mm)	Manufacturer's standard
Vertical Edges	Continuous weld interlocking seam, or intermittent welded exposed seam	Continuous weld	Continuous weld	Reinforced by 0.123 in. (3.1mm, 10 ga.) continuous steel channel, continuous weld	Manufacturer's standard
Top and Bottom Edges	0.053 in. (1.3 mm) continuous recessed steel channel	0.053 in. (1.3 mm) continuous recessed steel channel	0.093 in. (2.3 mm) continuous recessed steel channel	0.123 in. (3.1mm)	0.053 in. (3.1mm,) continuous recessed steel channel
Frames					
Interior Openings	0.042 in. (1.0mm) - 0.053 in. (1.3mm) for hollow core wood doors	0.053 in. (1.3mm) - 0.067 in. (1.7mm) for openings of more than 4 ft. (1219 mm)	0.093 in. (2.3mm)	0.093 in. (2.3mm) 0.067 in. (1.7mm)	0.067 in. (1.7mm)
Exterior Openings (*1*)	0.053 in. (1.3mm)	0.053 in. (1.3mm)- 0.067 in. (1.7mm) for openings over 4 ft. (1219mm) wide	0.093 in. (2.3mm)	0.093 in. (2.3mm) 0.067 in. (1.7mm)	0.067 in. (1.7mm)
Construction	Welded or knocked-down with integral stop and trim	Welded units with integral stop and trim	Welded units with integral stop and trim	Welded units with integral stop and trim	Welded units with integral stop and trim
Floor Anchors	0.053 in. (1.3mm) welded inside jambs	Same thickness as frame, welded inside jambs	Same thickness as frame, welded inside jambs	Same thickness as frame, welded inside jambs	0.067 in. (1.7mm), welded inside jamb
Jamb Anchors	In masonry walls (*9*), 0.053 in. (1.3mm) steel or 0.156-in. diam. steel wire. For stud partitions, 0.042 in. (1.0mm) steel anchors welded inside jambs	In masonry walls (*9*), 0.053 in. (1.3mm) steel or 0.156-in. diam. steel wire. For stud partitions, 0.042 in. (1.0mm) steel anchors welded inside jambs	In masonry walls (*10*), 0.067 in. (1.7mm) steel or 0.156-in. diam. steel wire. For stud partitions, 0.053 in. (1.3mm) steel anchors welded inside jambs	Same thickness as frame	In masonry walls (*11*), 0.053 in. (1.3mm) steel or 0.156-in. dia. steel wire. For stud partitions, 0.042 in. (1.0mm) steel anchors welded inside jambs
For complete specifications	**See HMMA 860**	**See HMMA 861**	**See HMMA 862**	**See HMMA 863**	**See HMMA 865**

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HMMA Guide Specifications

Hollow Metal Guide Specifications	HMMA 866	HMMA 867
Intended applications	For specialized applications where corrosion resistance beyond that of commercial hollow metal, or where aesthetics is of primary concern	For commercial applications where moderate use is anticipated such as: office buildings, convention centers, and industrial buildings
Doors		
Face Sheets, Interior Doors	0.042 in. (1.0mm)	0.032 in. (0.8mm)
Face Sheets, Exterior Doors	0.042 in. (1.0mm)	0.042 in. (1.0mm)
Material Type	Type 304 or 316 Stainless Steel	Pickled and oiled, hot rolled, or A60 Galvineal
Minimum thickness	1¾ in. (44.4mm)	1¾ in. (44.4mm)
Stiffeners/Core	0.026 in. (0.6mm) Welded Stiffener or Laminated Core	Laminated Core
Vertical Edges	Welded or Exposed Seam	Welded or Exposed Seam
Top and Bottom Edges	Closed with 0.053 in. (1.3mm) continuous recessed	Closed with 0.053 in. (1.3mm) continuous recessed
Frames		
Interior Openings	0.053 in. (1.3mm) - 0.067 in. (1.7mm) for openings over 4 ft. (1219mm) wide	0.042 in. (1.0mm) for hollow core wood doors – 0.053 in. (1.3mm)
Exterior Openings	0.053 in. (1.3mm) – 0.067 in. (1.7mm) for openings over 4 ft. (1219mm) wide	0.053 in. (1.3mm)
Construction	Welded K.D. or slip-on with integral stop and trim	Welded K.D. or slip-on with integral stop and trim
Floor Anchors	0.067 in. (1.7mm) welded inside jambs	0.042 in. (1.0mm) welded inside jambs
Jamb Anchors	In masonry walls (9), 0.053 in. (1.3mm) steel or 0.156-in. diam. steel wire. For stud partitions, 0.042 in. (1.0mm) steel anchors secured inside jambs	In masonry walls (9), 0.053 in. (1.3mm) steel or 0.156-in. diam. steel wire. For stud partitions, 0.042 in. (1.0mm) steel anchors secured inside jambs
For complete specifications	**See HMMA 866**	**See HMMA 867**

General Notes

Materials: For doors and frames – commercial quality, level, cold-rolled steel conforming to ASTM A 1008/A 1008M or hot-rolled, pickled and oiled steel conforming to ASTM A 1011/A 1011M or stainless steel conforming to ASTM A 666, Type 304 or 316. Material thicknesses listed in chart are minimums. Where recommended in the guide specifications, use zinc-coated steel conforming to ASTM A 653 / A 653M.

Testing and Performance: **HMMA 861** requires the following test: Performance Test for Steel Doors and Hardware Reinforcings (ANSI A250.4). **HMMA 862** incorporates testing procedures and performance requirements promulgated by NILECJ for class IV doors (ASTM F 476) including Jamb/Wall Stiffness Performance, Door Impact Test, Door and Glazing Panel Impact Resistance Performance, (new test) and SD-STD-01.01 (Rev G) or LPS 1175: Issue 5 standards for Forced Entry and Ballistic Resistance Testing. **HMMA 863** requires the following tests: Static Load test; Rack test; Impact test; Edge Crush test; Side-light frame test; and multiple light frame test under ASTM F 1450 and F 1592. Bullet Resistance testing, where applicable, is performed in accordance with UL-752. Manufacturers must submit independent laboratory reports certifying performance required by these tests on sample doors and frames as specified in the standards. **HMMA 867** requires the following test: Performance Test for Steel Doors and Hardware Reinforcings (ANSI A250.4).

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HMMA Fire-Rated Doors

HMMA leading the way in joint fire door testing, research and development; hose stream testing, positive pressure testing to UBC 7-2 and ISO 3008.

Fire Door Features

Door Description	Hourly Rating: 3-hour	Hourly Rating: 1-½-hour	Hourly Rating: ¾-hour	Maximum Door Opening Sizes (2)	Swinging Single	Swinging in Pairs	Face Sheets: 0.093 in. (2.3mm)	Face Sheets: 0.067 in. (1.7mm)	Face Sheets: 0.053 in. (1.3mm)	Face Sheets: 0.042 in. (1.0mm)	Single Door or Active Leaf of Pair: Latch Throw	Single Door or Active Leaf of Pair: Latch	Fire Exit Hardware: Mortise	Fire Exit Hardware: Rim	Fire Exit Hardware: Vertical Rods, Concealed or Exposed	Pairs, Inactive Leaf: Vertical Rods, Concealed or Exposed	Pairs, Inactive Leaf: Open Back Strike	Automatic Flush Bolt	Manual Flush Bolt	With Astragal	Without Astragal (up to 1-½ hours)
Basic Fire Door	•	•	•	4'0"x8'0"	•		•	•	•	•	½"	•	•	•	•						
	•	•	•	5'0"x12'0"	•			•	•	•	¾"	•	•	•							
	•	•	•	4'0"x10'0"	•			•	•	•	¾"	•									
	•	•	•	8'0"x8'0"		•		•	•	•	½"	•	•	•	•	•					
	•	•	•	8'0"x8'0"		•		•	•	•	½"	•									
	•	•	•	8'0"x10'0"		•		•		•	¾"	•						•	•	•	•
	•	•	•	10'0"x12'0"		•		•		•	¾"	•						•	•	•	
Temperature Rise Fire-Rated 450°F	•	•	•	4'0"x10'0"	•					•	⅝"	•									
		•		5'0"x12'0"	•			•			¾"	•						•	•	•	
450°F	•	•	•	8'0"x10'0"		•			•		⅝"	•	•		•	•					
		•		10'0"x12'0"		•		•			¾"	•						•	•	•	
250°F		•	•	4'0"x8'0"	•			•	•	•	½"	•	•	•	•						
250°F		•	•	8'0"x8'0"		•		•	•	•	¾"	•				•		•	•	•	
Double Egress	•	•	•	8'0"x10'0"		•		•	•	•					•	•				•	•
Stainless Steel		•	•	4'0"x8'0"	•				•	•	¾	•	•	•	•					•	•
		•	•	8'0"x8'0"		•			•	•	¾	•	•	•		•					
Dutch	•	•		4'0"x8'0"	•			•	•	•	¾"	•								•	
Louvered		•	•	4'0"x8'0"	•			•	•	•	½"	•						•	•	•	•
		•	•	8'0"x8'0"		•		•	•	•	¾"	•									
Sound	•	•	•	4'0"x8'0"	•		•	•	•	•	½"	•									
Radiation Retarding		•	•	4'0"x8'0"	•			•	•	•	½"	•	•	•		•		•	•	•	
		•	•	8'0"x7'2"		•	•	•	•	•	¾"	•	•	•							
		•	•	8'0"x8'0"		•		•	•	•	¾"	•	•	•							
Pressure Resistant	•	•	•	3'6"x7'2"	•		•				¾"	•	•	•							

The HMMA Division of NAAMM and its 60-plus member firms are leaders in fire door research and development. Through their ongoing joint fire test program, these hollow metal manufacturers construct and test a variety of fire-rated door and frame configurations. The most recent successful testing has been completed under "positive pressure" furnace conditions in accordance with UBC 7-2 and ISO 3008.

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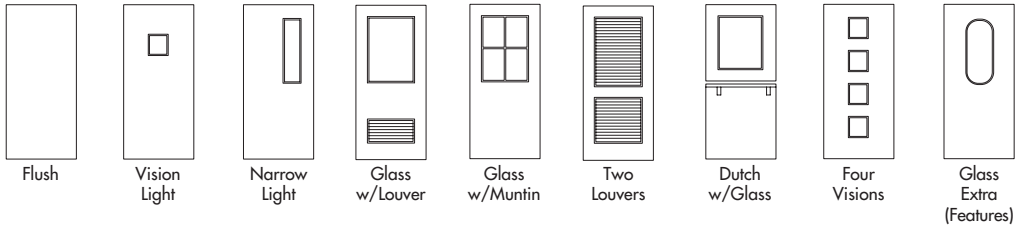
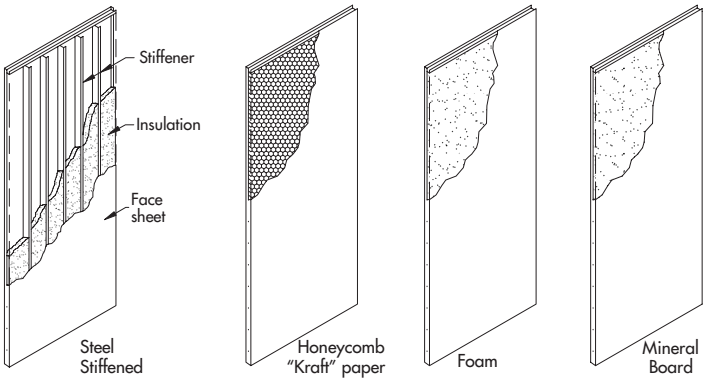
HMMA Hollow Metal Doors

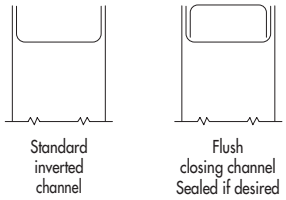
NAAMM's HMMA member companies offer wide varations in door design and construction.
Illustrated below are just a few of the almost limitless designs available to meet hollow metal door requirements.



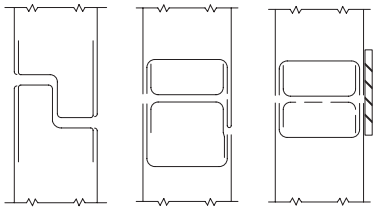
Core Constructions



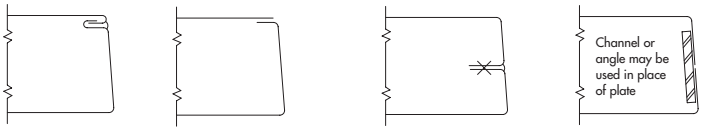
Top Edge Detail



Flush Transom Panel

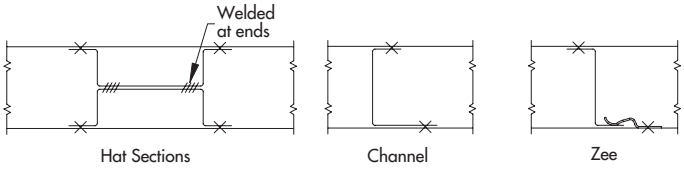


Common Beveled Edge Profiles

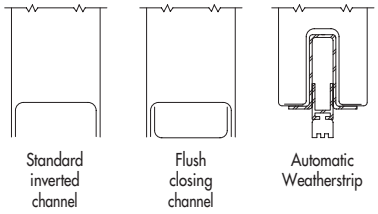


Edge Seams Welded or Exposed

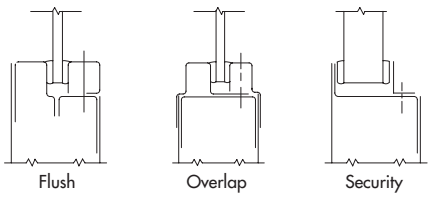
Representative Stiffener Sections



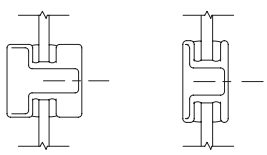
Bottom Edge Detail



Glass Lights



Muntins



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HMMA Fire-Rated Frames

HMMA leading the way in joint fire door testing, research and development; hose stream testing, positive pressure testing to UBC 7-2 and ISO 3008.

Fire Frame Features

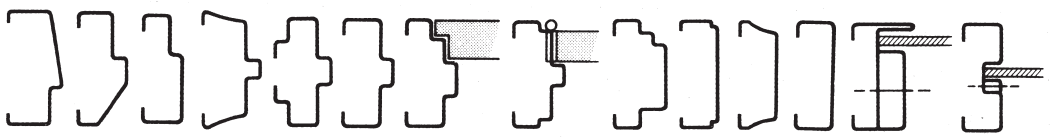
Frame Description	Hourly Rating: 3-hour	Hourly Rating: 1-½-hour	Hourly Rating: ¾-hour	Maximum Frame Opening (2) Sizes	Swinging Single	Swinging in Pairs	(3): 0.093 in. (2.3mm, 12 ga.)	(3): 0.067 in. (1.7mm, 14 ga.)	(3): 0.053 in. (1.3mm, 16 ga.)	Wall: New Masonry	Wall: Existing Masonry	Wall: Steel Studs	Wall: Wood Studs	Adjustable Floor Knee	Cut-off Stop	Stainless Steel	Maximum Door or Window (2) Opening Sizes	Maximum Transom Light or Panel (1, 2) Opening Sizes	Maximum Side Light or Panel (1, 2) Opening Sizes
Three-Sided Frame	•	•	•	4'0"x10'0" 5'0"x10'0" 8'0"x10'0" 10'0"x12'0"	•	•	•	•	•	•	•	•	•	•	•	•	4'0"x10'0" 8'0"x10'0" 10'0"x12'0"	4'0"x10'0"	
Double Egress	•	•	•	8'0"x10'0"	•	•	•	•	•	•	•	•	•	•	•	•	8'0"x8'0"		
Transom with Bar and 1¾" Panel	•	•	•	4'0"x11'0" 8'0"x11'0" 5'0"x12'0" 10'0"x12'0"	•	•	•	•	•	•	•	•	•	•	•	•	3'6"x7'2" 7'0"x7'2"	3'6"x3'6" 7'0"x3'0" 4'0"x4'0" 8'0"x4'0"	
Transom with Bar and ⅜" -¾" Panels	•	•	•	4'0"x10'0" 8'0"x10'0" 5'0"x12'0" 10'0"x12'0"	•	•	•	•	•	•	•	•	•	•	•	•	4'0"x10'0" 8'0"x10'0" 10'0"x12'0"	4'0"x2'8" 8'0"x2'8"	
Transom with No Bar and 1"-¾" Panels		•	•	4'0"x11'4" 8'0"x11'2"	•	•	•	•	•	•		•	•	•	•	•	4'0"x9'0" 8'0"x8'0"	4'0"x4'6" 8'0"x4'0"	
Multiple Swing Door Opening		•	•	12'0"x8'0" 13'6"x12'0"			•	•	•	•	•	•	•	•	•	•	8'0"x8'0"		
Fire Door With Transom and Side Light or Panel		•	•	13'6"x12'0" 13'6"x12'0" (4)	•	•		•	•	•	•	•	•	•	•	•	4'0"x10'0" 8'0"x10'0" 4'0"x10'0" 8'0"x10'0" 4'6"x4'6"	3'0"x4'0" 3'0"x4'0" 4'6"x4'6" 4'6"x4'6"	3'0"x4'6" 3'0"x4'6" 4'6"x4'6" 4'6"x4'6"
Fire Window Frame		•	•	13'2"x11'7"				•	•	•	•	•	•				4'6"x4'6"		

(1) When glzing is used instead of panels in transoms and side lights, the maximum permitted rating is 1½ hour.
(2) Equivalent metric dimensions in millimeters can be obtained by multiplying number of feet by 304.8.
(3) Material thickness may vary for some approved products.
(4) Maximum dimensions per segment. May be in the same plane or projected.

HMMA Hollow Metal Frames

The widest variety of frame profiles are available from NAAMM HMMA members. A sampling of profile configurations is shown below:

Profile Variations



HMMA members furnish many combinations of features to meet special design considerations, functions and applications. For all the details, contact any HMMA member listed on the back.

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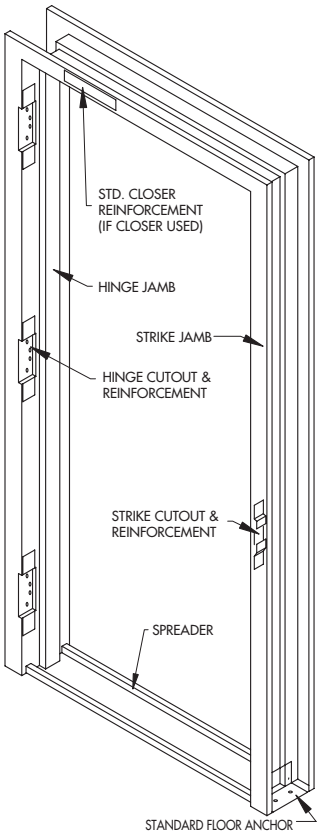
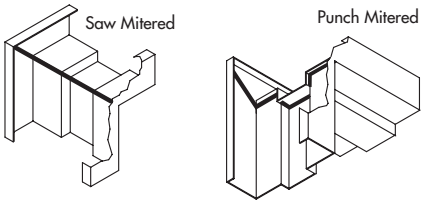
HMMA Frame Construction and Details

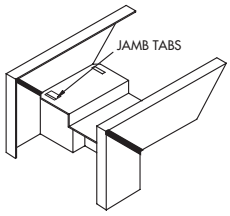
Typical Frame Assembly



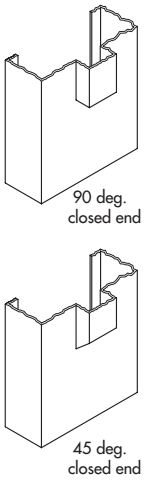
Continuously Welded Corner Joints



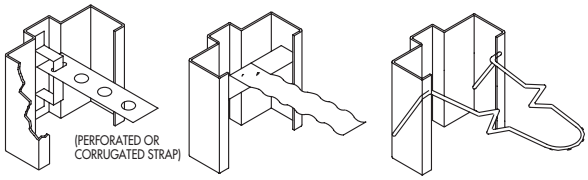
Face Welded Corner Joint

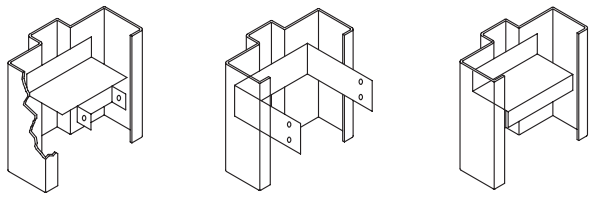


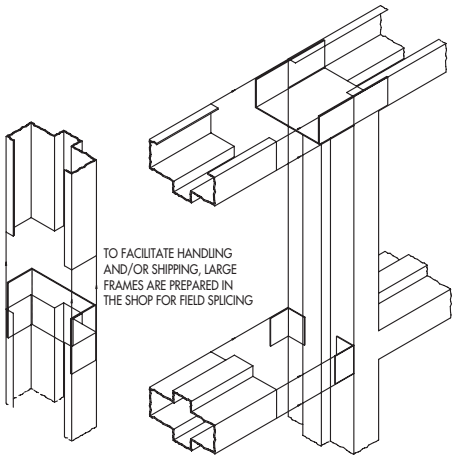
Cut-off Stops



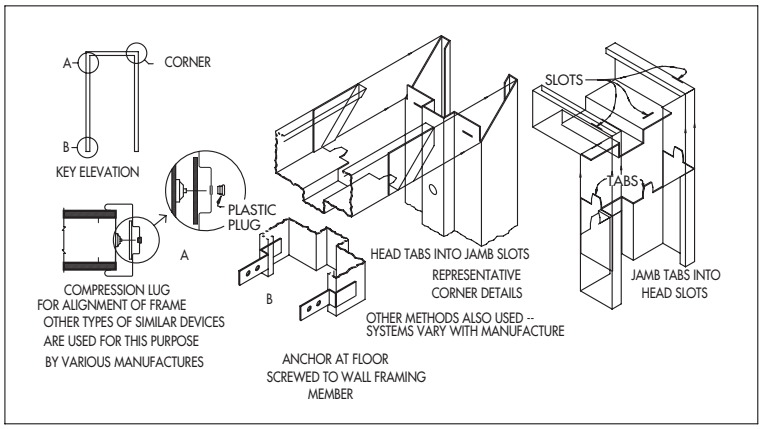
Common Jamb Anchors







Field Assembled Drywall Frame



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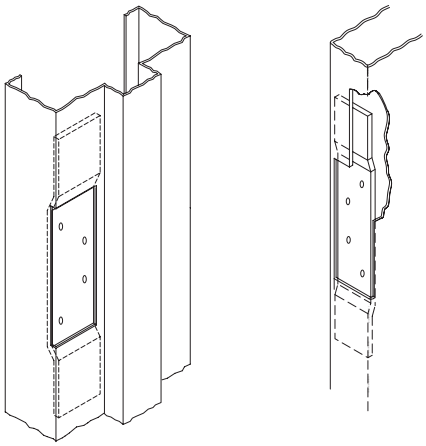
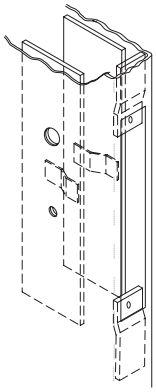
HMMA Hardware Preparation and Locations

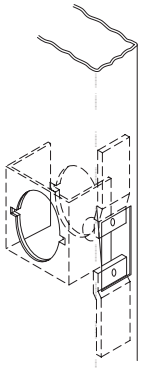
Butt Hinge



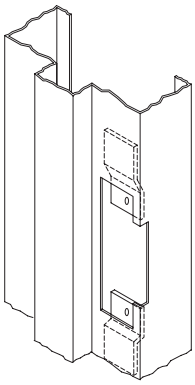
Mortise Lock



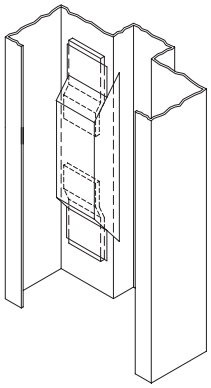
Cylindrical Lock



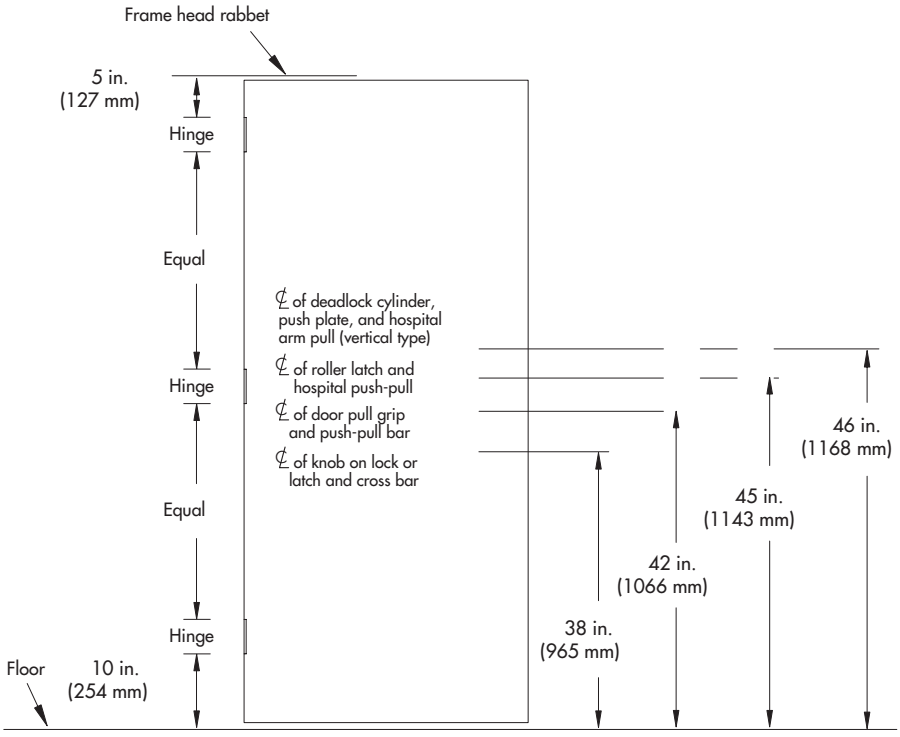
Strike in Frame



Mortar Guard



Recommended Hardware Locations



COMMERCIAL DOOR
MANUFACTURING

Commercial Door Manufacturing Inc.
2914 Girard NE
Albuquerque, NM 87107
www.CommercialDoorMfg.com
Phone: 505-881-1034 Fax 505-884-1484

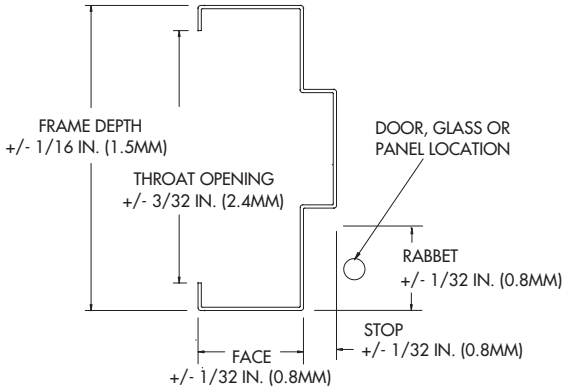
HMMA Manufacturing Tolerances

Manufacturing tolerances shall be maintained within the following limits:

1. Frames for single door or pair of doors;
   a. Width, measured between rabbets at the head: nominal opening width +1/16 in. (+1.5mm), -1/32 in. (-0.8mm).
   b. Height (total lenght of jamb rabbet): nominal opening height +1/16 in. (+1.5mm), -1/32 in. (-0.8mm).

2. Doors:
   a. Width +/- 3/64 in. (1.2mm)
   b. Height +/- 3/64 in. (1.2mm)
   c. Thickness +/- 1/16 in. (1.5mm)

3. Hardware:
   a. Cutout dimension +0.015 in., -0"
   b. Location +/- 1/32 in. (0.8mm)



Storage

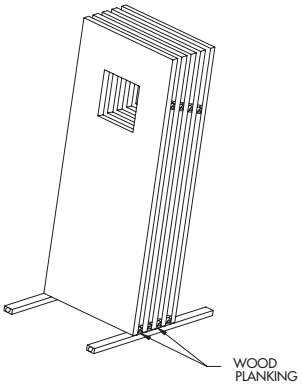
The contractor responsible for installation shall ensure that;

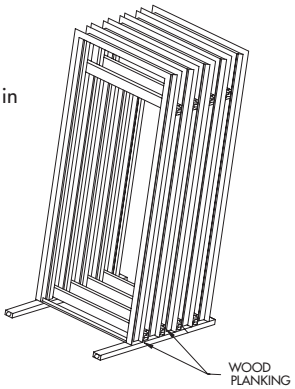
1. Wraps or covers from doors and frames are removed upon delivery.

2. Any scratches or disfigurements caused in shipping or handling are promptly cleaned and touched up with a rust-inhibitive primer.

3. Materials are properly on planks or dunnage in a dry location. Doors shall be stored in a verticle position and spaced by blocking.

4. Materials shall be covered to protect them from damage, but in such a manor as to permit air circulation.





Installation Tolerances