General Information

WELCOME

Hager Companies provides single-source solutions for the door hardware industry with a line of quality products that includes:

- Architectural Hinges
- Residential Hinges
- Roton Continuous Geared Hinges
- Stainless Steel Continuous Hinges
- Trim & Auxiliary
- Thresholds & Weatherstripping
- Sliding Door Hardware
- Locks
- Door Closers
- Exit Devices

Since 1849, Hager's focus has been innovative products, exceptional value, and incomparable customer service. Additionally, Hager offers complimentary comprehensive consulting services. Our services include design development assistance, budget preparation, door hardware specification writing, code compliance, submitted schedules review and approval, and technical project support.

We believe that by offering these value-added services, along with our premium quality, value-priced products, you'll see for yourself how Hager gives you "more for your door than any other brand."

So whatever you're looking for—from simple everyday needs to solutions for unconventional applications—you'll find it in our 2016 Catalog.

CONTACT INFORMATION

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GENERAL INFORMATION

TERMINOLOGY

Terminology used in this catalog complies with the following ANSI/BHMA standards:

- ANSI A156.1 - Butts and Hinges
- ANSI A156.2 - Bored and Presassembled Locks and Latches
- ANSI A156.3 - Exit Devices
- ANSI A156.4 - Door Controls-Closers
- ANSI A156.5 - Auxiliary Locks and Associated Products
- ANSI A156.6 - Architectural Door Trim
- ANSI A156.7 - Template Hinge Dimensions
- ANSI A156.8 - Door Controls-Overhead Stops and Holders
- ANSI A156.12 - Interconnected Locks
- ANSI A156.13 - Mortise Locks and Latches
- ANSI A156.14 - Sliding and Folding Door Hardware
- ANSI A156.15 - Release Devices-Closer Holder, Electromagnetic and Electromechanical
- ANSI A156.16 - Auxiliary Hardware
- ANSI A156.17 - Self Closing Hinges and Pivots
- ANSI A156.18 - Materials and Finishes
- ANSI A156.21 - Thresholds
- ANSI A156.22 - Door Gasketing Systems
- ANSI A156.25 - Electrified Locking Devices
- ANSI A156.26 - Continuous Hinges
- ANSI A156.28 - Keying Systems

ANSI NUMBERING SYSTEM

Letter "A" denotes section "A" of ANSI Standard

First Numeral

The first numeral indicates general type of material used.

1 – Cast, Forged or Extruded Brass or Bronze
2 – Wrought Brass or Bronze
5 – Stainless Steel, 300 Series
8 – Wrought Steel, Forged Steel or Malleable Iron

Second Numeral

The second numeral identifies type of product.

1 – Full Mortise Hinges
2 – Half Mortise Hinges
3 – Full Surface Hinges
4 – Half Surface Hinges
5 – Anchor, Pivot Reinforced or Thrust Pivot Unit and Hinge Sets
6 – Olive Knuckle Hinges
7 – Pivot Hinges
8 – Rescue Hardware

Third Numeral

The third numeral identifies the function or the description of the item or both.

1 – Anti-Friction Bearing
2 – Anti-Friction Bearing – Swing Clear
3 – Plain Bearing
4 - Thru 0 – Special Conditions

Fourth Numeral

The fourth numeral designates the grade classification of the item.

1 – Grade 1 – 4BB Extra Heavy Weight – 2,500,000 Cycles
2 – Grade 2 – 2BB Standard Weight – 1,500,000 Cycles
3 – Grade 3 – Plain Bearing – 350,000 Cycles

Information taken from: ANSI A156.1 (Butts and Hinges)

CODES AND ILLUSTRATIONS

Units of Measure

EACH - Item in a box either with or without screws.
PACK - Items poly bagged (1 or more) per bag.
PAIR - Items (1 or more) pair per box.
SET - Items (1 or more) sets per box.

Illustrations

Pictures and illustrations shown in this catalog are for general product information only and are not meant to be used as templates. Contact Hager Companies Sales and Service for templates or installation instructions, or go to www.hagerco.com to download.

Packaging

The following codes have been established to provide clarification of packaging methods. The basic code letter(s) are shown in parenthesis in the unit column of each page. The letter designation refers to the standard Hager Pack.

Hager Companies reserves the right to change the packaging methods when deemed necessary and to increase or decrease quantities to make full case quantities on a specific item.

B = Boxed
PB = Poly Bag
BLK = Bulk Pack
SET = Set

APPROVAL

Hager Companies has been approved by the U.S. Corps of Engineers and by the Veterans Administration for use on all veterans hospitals and on other buildings that would come under their jurisdiction. Approved samples are on file at the National Bureau of Standards, Washington, D.C.

DOOR MATERIALS AND FREQUENCY

Approximate Door Weights - pounds per square foot					
	Door Thickness				
Door Material	1-3/8" (35 mm)	1-3/4" (45 mm)	2" (51 mm)	2-1/4" (57 mm)	2-1/2" (64 mm)
Ash	4.5	5.3	6.0	6.8	7.5
Birch	3.8	4.3	5.0	5.6	6.3
Fir	3.0	3.5	4.0	4.5	5.0
Mahogany	4.5	5.3	6.0	6.8	7.5
Oak	6.0	7.3	8.0	9.0	10.0
White Pine	3.0	3.5	4.0	4.0	5.0
Residential Hollow Core	1.7	2.5	-	-	-
Institutional Hollow Core	-	3.2	-	-	-
Staved Core	3.3	4.2	-	5.4	-
Particle Board Core	4.0	5.0	-	-	-
Mineral Core	-	4.0	-	-	-
Acoustical Core	-	8.3	-	10.6	-
Fiberglass	-	3.8	-	-	-
Hollow Metal 18 gauge	4.3	4.6	-	-	-
Hollow Metal 16 gauge	5.4	5.8	-	-	-
Hollow Metal 15 gauge	6.2	6.5	-	-	-
Hollow Metal 14 gauge	7.0	7.3	-	-	-
Hollow Metal 13 gauge	8.3	8.7	-	-	-
Hollow Metal 12 gauge	9.9	15.5	-	-	-
Hollow Metal 11 gauge	11.2	11.6	-	-	-
Hollow Metal 10 gauge	12.8	13.0	-	-	-
1-3/4" Wood + 1/16" Lead	-	8.7	-	-	-
1-3/4" Wood + 1/8" Lead	-	12.4	-	-	-
1-3/4" Wood + 3/16" Lead	-	16.1	-	-	-
1-3/4" Wood + 1/4" Lead	-	19.8	-	-	-
1-3/4" Wood + 3/8" Lead	-	27.2	-	-	-
1-3/4" Wood + 1/2" Lead	-	34.6	-	-	-

Frequency of Use		
Type of Building	Daily	Yearly
High Frequency		
Large Department Store Entrance	5,000	1,825,000
Large Office Building Entrance	4,000	1,460,000
Hospital Corridor and Surgical Doors	3,000	1,095,000
School Entrance	1,250	456,250
Office Stairwell	500	182,500
Medium Frequency		
Hospital Consultation Rooms	100	36,500
School Corridor	100	36,500
Office Building Corridor	80	29,200
Storage Room	50	18,250
Low Frequency		
Residential Entrance	30	10,950
Residential Interior	20	7,300

Note: Frequency chart recommendations apply to all average weight doors. Heavy ball bearing hinges should be used for doors having a thickness of 2" (51 mm) or more over a width of 3' 4" (1016 mm). Any doors on which a closing device is used should be equipped with bearing hinges, regardless of frequency of use.

TRADE ORGANIZATIONS

The American Hardware Manufacturers Association

The purpose of AHMA is to promote the sale of American made products through the hardware distribution system. Hager Companies is a member in good standing of the American Hardware Manufacturers Association, the owner of the AHMA registered trademark.

Door and Hardware Institute

The purpose of the Institute is to represent the architectural openings industry as a major component of the construction industry. Hager recommends the service of a qualified A.H.C. for the preparation of hardware specification and schedules. Members of this society are qualified through years of experience and rigid examination to handle the most complex hardware situations.

Builders Hardware Manufacturers Association

The Builders Hardware Manufacturers Association is a national trade group of manufacturers whose products are classified (Standard Industrial Classification #34294) and most familiarly recognized as locks and builders hardware. Where applicable this catalog shows BHMA numbers in conjunction with Hager numbers. The purpose is to advance the interests of the Builders Hardware Industry in all lawful ways.

Association of Millwork Distributors

The Association of Millwork Distributors has continued to be recognized as the leader in the millwork wholesale distribution industry for almost half a century. The Southern Sash and Door and Northern Sash and Door organizations, joined forces 42 years ago to become the National Sash and Door Jobbers Association (NSDJA). On the 40th Anniversary of NSDJA, the association changed its name to the Association of Millwork Distributors (AMD). This change signified that the leadership and membership of the association recognized the changes in the millwork industry.

AMD represents the millwork industry with over 1,000 distributor, manufacturer, and manufacturer's representative companies, nationally and internationally, that promote the best in products and services that the millwork industry has to offer.

AMD is a chief advocate, actively engaged in issues regarding standards, trends, and resources in the millwork distribution industry. AMD monitors Congressional activity and various regulatory agencies, continually seeking to promote industry benefits for AMD members.

AMD is committed to being an essential resource for its members, providing educational products, networking events, and pertinent industry information to help members stay updated on millwork industry trends and available opportunities.

Florida Building Codes

The following products have been approved for statewide acceptance by the Florida Building Commission pursuant to Rule 9B-72.090, F.A.C., for approval of products and systems for use on Exterior Swinging Door Assemblies, in compliance with the structural requirements of the 2007 Florida Building Code.

Verification of Florida Statewide acceptance can be found at www.floridabuilding.org under the Product Approval section.

Severe Windstorm Resistant Components for Swinging Door Assemblies - ANSI A250.13 - 2003 Standard

Certified Hardware	Assembly Configuration	Door Size	Door Stiffness Class	Design Load	Florida Certification Number (FL#)
3100 Series Grade 1 Deadbolt	Single - Out Swing	3-0 x 7-0	-	1150 lbf (100 psf)*	6118
	Single - Out Swing	4-0 x 8-0	-	1150 lbf (70 psf)*	
3200 Series Grade 2 Deadbolt	Single - Out Swing	3-0 x 7-0	-	1150 lbf (100 psf)*	6118
	Single - Out Swing	4-0 x 8-0	-	1150 lbf (70 psf)*	
3400 Series Grade 1 Lockset	Single - Out Swing	3-0 x 7-0	-	1150 lbf (100 psf)*	6118
	Single - Out Swing	4-0 x 8-0	-	1150 lbf (70 psf)*	
3500 Series Grade 2 Lockset	Single - Out Swing	3-0 x 7-0	-	860 lbf (80 psf)*	7683
	Single - Out Swing	4-0 x 8-0	-	860 lbf (50 psf)*	
3800 Series Grade 1 Mortise	Single - Out Swing	3-0 x 7-0	-	1150 lbf (100 psf)*	12932
	Single - Out Swing	4-0 x 8-0	-	1150 lbf (70 psf)*	
4500 Rim Exit Device	Single - Out Swing	4-0 x 8-0 max.	I	+/- 70 psf - 350 ft-lbs Impact	9481
4500 SVR Exit Device	Out Swing	8-0 x 8-0 pair max.	I	+/- 50 psf - 350 ft-lbs Impact	13178
4700 Rim Exit Device	Single - Out Swing	4-0 x 8-0 max.	I	+/- 40 psf - 350 ft-lbs Impact	8293
780-112 Roton Hinge	Single Swing	4-0 x 8-0 max.	I	1150 lbf (72 psf)* - 350 ft-lbs Impact	6118
780-111, 780-224, 780-226 Roton Hinge (SD & HD)	Single Swing	4-0 x 8-0 max.	I	1150 lbf (72 psf)* - 350 ft-lbs Impact	13776
BB1191 Hinge	Single - Out Swing	-	-	1780 lbf**	6118
1279, 1191, BB1279, BB1168, BB1199	Single - Out Swing	-	-	1780 lbf**	13776

* Load in parenthesis indicates the equivalent load in pounds per square foot based on indicated door size and door stiffness (if applicable). This load is based on the hardware item taking half of the force applied to the door assembly by the wind load and the hinges taking the other half.

** This load indicates the design load for a single butt hinge. Maximum wind load should be calculated based on door size, number of hinges used, and the other available door hardware on the door assembly.

Basic Requirements for an Opening to be Classified as Fire-rated

The wall, frame, and door all have to be fire-rated. For example, as it would not make much sense to put a labeled door in a non-rated wall just as you cannot put a non-labeled door in a rated wall and call the opening fire-rated. The purpose of a fire-rated opening is to retard fire for a specific length of time. All components of the opening have to be rated. When an opening is also required to be "S" (smoke) labeled then additional gasketing items will be required to comply with the code.

Every swinging fire door must have a listed and labeled self-latching device to engage the strike to be fire-rated. Push and pull plates cannot be used on a fire-rated door. The door has to latch into the frame when closed so it stays closed. The latch prevents the door from opening during a fire if something falls against it. This means you must use at least a passage lock set on the door. Deadbolts cannot be used in place of a latching device because they are not self-latching.

The door must be self-closing to be fire-rated. A properly sized, listed and labeled closing device is part of basic fire door hardware requirements. If the door is left open during a fire, then that opening cannot retard the fire as it was meant to do; the door needs to close after somebody passes through it. This is usually done by a door closer or, in some cases, spring hinges.

Steel ball bearings and steel based hinges must be used on fire-rated doors. Brass, bronze and other base materials cannot be used, unless tested as an assembly. Continuous hinges are allowed as tested. Plain bearing hinges cannot be used. Bearing hinges minimize wear from everyday operation and help prevent door sag. During a fire, the door needs to operate smoothly so closers and latching devices work properly. Some manufacturers may provide doors with non-bearing type hinges only when they are part of the listed assembly.

Fire-rated and listed louvers can be installed on fire doors but they have to be a fusible link type. This means that once the heat from the fire reaches a certain temperature (usually 105°F) (41° C), the fusible link will melt which causes the louver blades to close. This will help prevent the spread of fire. The maximum size for these louvers is 24" x 24" (610 x 610 mm). There is no glass allowed in a fire-rated door if it has a louver and no louvers can be installed in a 3-hour rated door.

Basic fire door frames do not have hourly ratings. The exception being frames specially labeled for less than 3 hours. Frames bearing a recognized fire label may support a 3-hour, 1-1/2-hour, 3/4-hour or a 1/3-hour door. Frames used in masonry walls can be used with a maximum 3-hour fire door. While frames in drywall are intended for use with fire doors rated up to 1-1/2-hour, some manufacturers have tested for a 3-hour frame in drywall. Verify with your manufacturer for individual listing.
Remember, these are basic requirements. Codes differ from area to area and are enforced by the Authority Having Jurisdiction (AHJ)

The purpose of a fire-rated opening is to retard fire for a specific period of time.

The hourly designation indicates the duration for the fire test exposure and is known as the fire protection rating.

A Label: 3-hour rating (for a 4-hour wall): These doors are used for openings in walls separating buildings that are joined together. They are metal doors and glass is allowed as tested. "A" label doors might not require additional seals applied to the frame, check with your individual manufacturer's procedure. Typically, a hollow metal door needs no added seals. Metal and some composite doors expand when heated. The door itself effectively seals the opening and often does not require the addition of an edge sealing system for the fire label. However, this door would still need a smoke gasket if it were functioning as a smoke control door.

B Label: 1-1/2-hour rating (for a 2-hour wall): These doors are usually used for stairwell doors but are sometimes used at all the rated walls in a building (i.e., mechanical or electrical rooms). One-hundred square inches of exposed glass per door leaf is allowed. These are mostly wood composite and hollow metal doors. A "B" label 1-hour rating (1-hour wall) exists for use in buildings less than four stories tall; this rating currently only applies to wood doors. "B" label fire doors require the addition of an edge-sealing system (category "G" gasket) to the frame to comply with the new positive pressure test method. Some wood doors do not require the additional category "G" gasket; check with your manufacturer for availability.

C Label: 3/4-hour rating (for a 1-hour wall): These doors are used for openings from a corridor into another room in the same building. 1,296 square inches of exposed glass is allowed per vision light. These are mostly wood composite doors. "C" label fire doors require the addition of an edge-sealing system (category "G" gasket) to the frame to comply with the new positive pressure test method. Some wood doors do not require the additional category "G" gasket, check with your manufacturer for availability.

D Label: 1-1/2-hour rating (for a 2-hour wall): These are hollow metal doors used in exterior walls subject to severe fire exposure from outside the building. One-hundred square inches of exposed glass per door leaf is allowed. Check with your manufacturer's listing for the addition of a category "G" gasket to meet positive pressure requirements.

E Label: 3/4-hour rating (for a 1-hour wall): These are hollow metal doors used in exterior walls subject to moderate to light fire exposure from the outside of the building. 1,296 square inches of exposed glass is allowed per vision light. Check with your manufacturers listing for the addition of a category "G" gasket to meet positive pressure requirements.

1/3-Hour Door: 20-minute rating (for a 1-hour wall): These doors do not have a letter designation for their rating and can be a wood or particle core door. 1,296 square inches of exposed glass is allowed per vision light. They are tested with or without hose stream. Doors tested without hose stream are specially labeled: "Twenty Minute-Rating Without Hose Stream." These doors are used on condo/apartment entrances, offices of a 1-hour rated corridor wall and other applications where smoke and draft control is the primary concern.

S Label: The letter "S" is the designation on a door's fire label indicating it can be used as a Smoke Control Door. Door manufacturers are allowed to put an "S" on a fire label when the door opening has passed the air infiltration test. The door opening does not become approved for a Smoke and Draft Control unit until an approved category "H" gasket system has been installed on the frame. The federal government, many owners and some states require at least some openings to be labeled for smoke as well as fire. This is not limited to 20-minutes but includes all fire labeled doors that are rated 20-minutes and above. The addition of an approved category "H" smoke control gasket completes the installation instructions necessary to validate the labeled door to become a Smoke Control Door.

All of the labels listed above have the capability of being both fire and smoke barrier openings. Openings requiring smoke labels are detailed either by the fire authority having jurisdiction, local code, NFPA 101 or NFPA 5000.