



NOTE TO USER:

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SECTION 08 11 00 METAL DOORS AND FRAMES (07/09)

CSI MASTERFORMAT 2004 SECTIONS USED HEREIN:

08 11 13, 08 11 13.13, 08 11 13.16, 08 12 00, 08 12 13, 08 12 13.13, 08 12 13.53, 08 13 00, 08 13.13, 08 13 13.53, 08 34 53, 08 34 73, 08 39 00.

1. Product Name:

Metal Doors and Frames

2. Manufacturer:

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Website: www.blackmountaindoor.com
Brand Names: AMWELD, FIREDOOR and BLACK MOUNTAIN DOOR (BMD)

3. Product Description:

BASIC USE

Black Mountain Door, LLC manufactures a broad range of standard and made-to-order metal doors and door frames under the brand names Amweld, Firedoor and Black Mountain Door. Products are suitable for use in commercial, residential and industrial buildings for normal, security, fire protection, sound control, "green building", and windstorm protection applications. A summary of the product varieties offered by Black Mountain Door follows.

Consult manufacturer's Architectural Technical Data Manual for more complete illustrations, technical information, handing, and descriptions of doors and frames available.

Throughout this document, the historical term gage (or gages) is used since it is an integral part of the ordering, pricing, and product identification procedures. These gage references comply with ANSI/SDI A250.8 and HMMA 803.

The complete line of doors and frames include cold rolled (or hot rolled for heavier gages) steel or hot-dip galvanized (galvanneal) steel, prime painted, suitable for interior or exterior installations.

Within certain limitations materials can be provided factory pre-finished for interior applications.

Insulated door cores are available for exterior installations.

Metric conversions used herein are "soft" metrics.

COMPOSITION & MATERIALS

Standard Door Opening Width:

2'-0" (610 mm)	2'-10" (864 mm)	3'-8" (1118 mm)
2'-4" (711 mm)	3'-0" (914 mm)	3'-10" (1168 mm)
2'-6" (762 mm)	3'-4" (1016 mm)	4'-0" (1219 mm)
2'-8" (813 mm)	3'-6" (1067 mm)	

Standard Door Opening Height:

6'-8" (2032 mm)	7'-2" (2184 mm)	8'-0" (2438 mm)
7'-0" (2134 mm)	7'-10" (2388 mm)	

Non-Standard Widths to 5'-0" (1524 mm) and heights to 10'-0" (3048 mm) are available.

Gage Thickness and Tolerances:

Black Mountain Door uses the tolerances endorsed by Underwriters Laboratories, Inc. (UL) as published in ANSI/SDI A250.8 and HMMA-803. For zinc coated (galvanized) steel sheets, the coating thickness only slightly affects steel thickness. One ounce of zinc per square foot corresponds to an average thickness of 0.0017" (0.04 mm), total of both sides. A40 material has an average coating thickness of 1 mil (0.025 mm) or 0.0005" (0.01 mm) per side.

Steel:

Base steel material used in the manufacturing of doors and frames complies with ASTM A568, ASTM A1008 and/or ASTM A1011.

Where specified, hot-dip galvanized (galvanneal) steel coating complies with ASTM A653 and ASTM A924. Coating Class A40 (ZF120) is standard; Class A60 (ZF180) is available. The material is treated in the mill for consistency. The resultant coating is a zinc-iron alloy ensuring superior prime paint and core adhesion.

Location of Hardware:

Unless otherwise specified, conform to recommendations of ANSI/SDI A250.6 and A250.8 for location of and preparation for locks, hinges, latches, push-pull plates and bars, exit devices, handle sets, closer reinforcing, roller latches, and arm pulls.

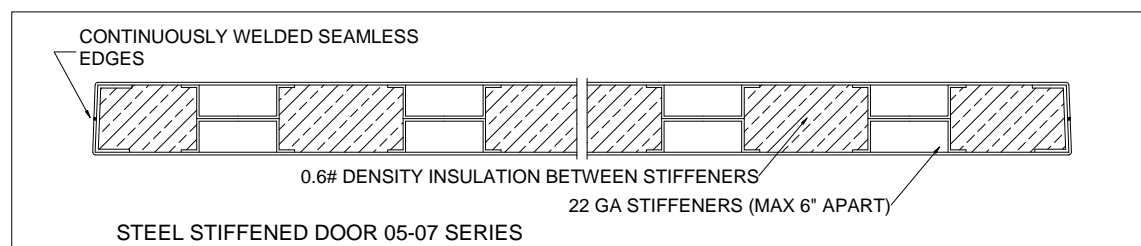
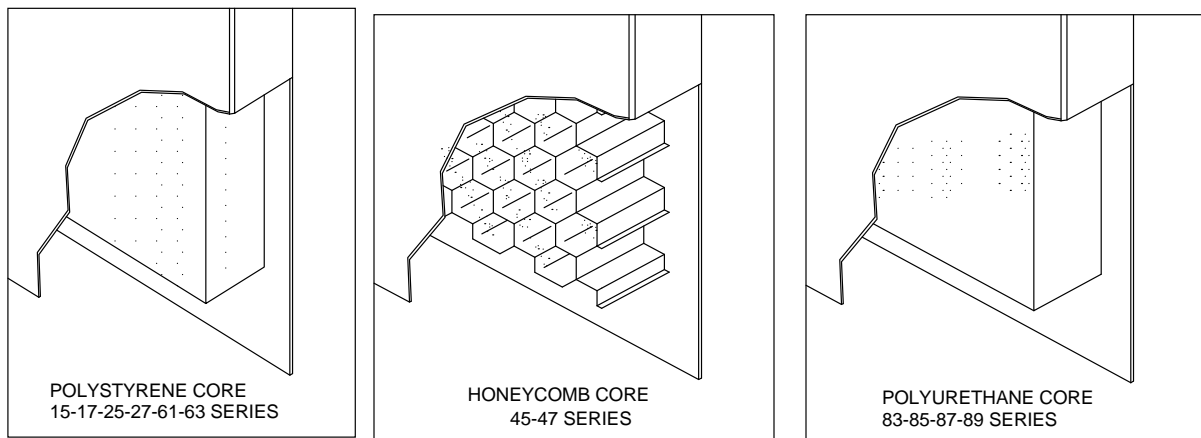
DOORS:

Black Mountain Door's doors are generally described with alpha-numeric Series numbers. These numbers describe the core, face material, and edge construction. As an example, a 25LE door is a seamless laser edge with galvanized (galvanneal) faces and a polystyrene core.

All doors are 1 3/4" (44 mm) thick.

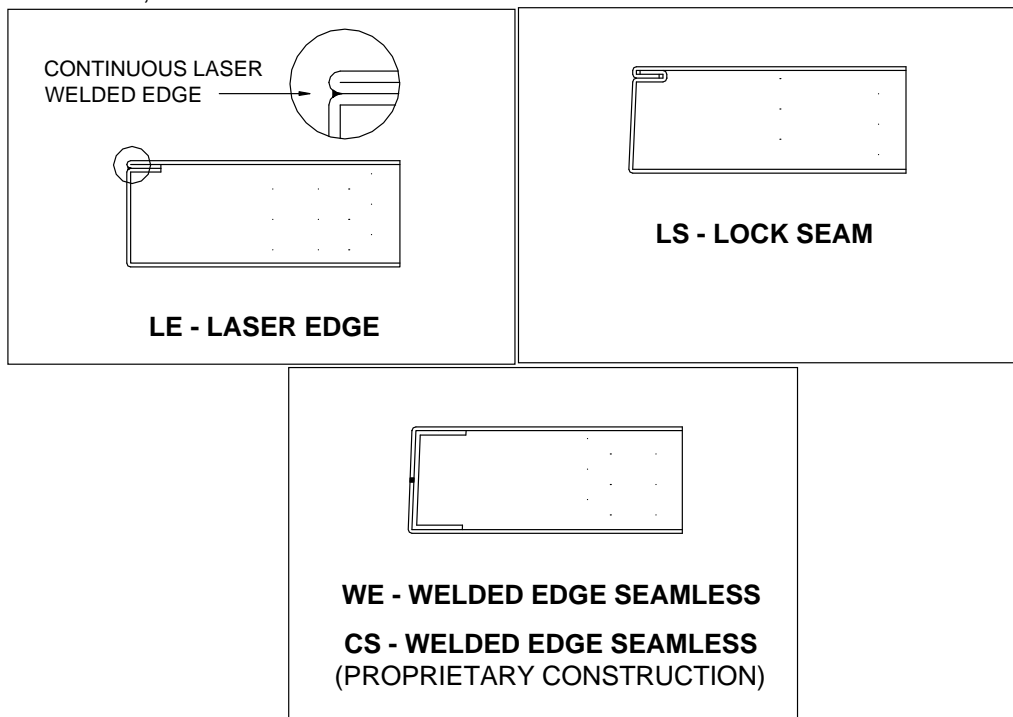
The numeric part of the Series designation identifies the core material as follows:

- 15, 17, 25, 27, 61, 63= Nominal one pound per cubic foot (16 kg/cubic m) density precured expanded polystyrene (EPS) foam securely adhesive bonded to door faces. EPS is an odorless, rigid foam that is resistant to fungi, bacteria, moisture, mildew and rot.
- 35, 37= Proprietary 250 degree F (121 degree C) temperature rise coreboard securely adhesive bonded to door faces.
- 45, 47= Resin impregnated "Kraft" honeycomb securely adhesive bonded to door faces.
- 83, 85, 87, 89= Nominal two pound per cubic foot (32 kg/cubic m) density precured polyurethane foam slab securely adhesive bonded to door faces.
- 05, 07= HMMA-861 construction utilizing pairs of back to back 22 gage hat-shaped steel stiffeners welded to door faces, spaced 6 inches (152 mm) maximum apart. Spaces between stiffeners are insulated with inorganic batt type insulation.



The alpha part of the Series designation identifies the edge construction as follows:

- LE= Continuous laser welded seam (laser edge) using no filler material, creating an aesthetically pleasing seam on the edge and smooth unbroken surfaces on faces. (ANSI/SDI A250.8 Model 1 full flush).
- As an option, LE doors may have the laser edge seam made seamless by applying a non-structural bonded metallic filler, sanding and finishing smooth. (ANSI/SDI A250.8 Model 2 seamless).
- LS= Continuous mechanical interlocking edge seam full height and smooth unbroken surfaces on faces. (ANSI/SDI A250.8 Model 1 full flush).
- As an option, LS doors may have the interlocking edge seam made seamless by applying a non-structural bonded filler, sanding and finishing smooth. (ANSI/SDI A250.8 Model 2 seamless).
- WE= Continuously welded edge seam extending the full height of the door. All welds are ground, filled and dressed to provide smooth, flat edges. Faces are smooth unbroken surfaces. (ANSI/SDI A250.8 Model 2 seamless and HMMA-861).
- CS= Faces and edges identical to WE. This Series is used at highly engineered or "proprietary" door constructions. (ANSI/SDI A250.8 Model 2 seamless).
- Standard edges of LE Series doors are square (90 degrees) for a non-handed, reversible feature.
- Standard edges of LS, WE, and CS doors (except 05 suffix) are beveled 1/8" in 2" (3.2 in 51 mm).
- As an option, LS, WE, and CS doors may be ordered with square (90 degree) edges for a non-handed, reversible feature.



Steel Composite Doors:

- Amweld brand 15LE, 17LE, 45LE, 47LE, 85LE, and 87LE Series 1 3/4" (44 mm) doors have each face formed of 14, 16, 18 or 20 gage cold rolled steel.
- Amweld brand 35LE and 37LE Series 1 3/4" (44 mm) doors have each face formed of 16 or 18 gage cold rolled steel.

All the above Series designations are constructed as a square edge non-handed door using a handing plate for field reversibility. The top and the bottom of the door are formed using 18 gage (minimum) galvanized channels securely welded to the door face. The standard top is closed flush. A minimum 14 gage closer reinforcement is standard. Doors are constructed to meet fabrication and hardware reinforcing requirements of ANSI/SDI A250.8 and ANSI/SDI A250.6.

Hot-dip Galvanized (Galvanneal) Composite Doors:

- Amweld brand 25LE, 27LE, 45LE, 47LE, 83LE, and 89LE Series 1 3/4" (44 mm) doors have each face formed of 14, 16, 18 or 20 gage hot-dip galvanized (galvanneal) steel. Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. Doors are constructed as

a square edge non-handed door using a handing plate for field reversibility. The top and the bottom of the door are formed using 18 gage (minimum) galvanized channels securely welded to the door face. The standard top is closed flush. A minimum 14 gage closer reinforcement is standard. Doors are constructed to meet fabrication and hardware reinforcing requirements of ANSI/SDI A250.8 and ANSI/SDI A250.6.

- Firedoor brand 25LS, 27LS, 35LS, 37LS, 83LS and 89LS Series 1 3/4" (44 mm) doors have each face formed of 16 or 18 gage hot-dip galvanized (galvanneal) steel. Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. Doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). As an option, LS doors may be ordered with square (90 degree) edges for a non-handed, reversible feature or square (90 degree) edges and handed. The top and the bottom of the door are formed using 18 gage (minimum) galvanized inverted channels securely welded to the door face. As an option, the top may be ordered closed flush with an additional screw applied channel. Hardware preparations are designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6.
- Firedoor brand 27WE, 37WE, and 89WE Series 1 3/4" (44 mm) doors have each face formed of 12, 14, 16, or 18 gage hot-dip galvanized (galvanneal) steel. Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. Doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). As an option, WE doors may be ordered with square (90 degree) edges for a non-handed, reversible feature or square (90 degree) edges and handed. The top and the bottom of the door are formed using 18 gage (minimum) galvanized inverted channels securely welded to the door face. As an option, the top may be ordered closed flush with an additional screw applied channel. Edges and hardware preparations are designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6.

Embossed Panel Doors:

- Amweld brand 61LE and 63LE Series 1 3/4" (44 mm) 6-panel doors have each face formed of 16, 18 or 20 gage hot-dip galvanized (galvanneal) steel. Gage availability is subject to size and design. 6-panel faces are standard; 8-panel or other variations are available (contact manufacturer). Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. Doors are constructed as a square edge non-handed door using a handing plate for field reversibility. The top and the bottom of the door are formed using 18 gage (minimum) galvanized channels securely welded to the door face. The standard top is closed flush. A minimum 14 gage closer reinforcement is standard. Doors are constructed to meet fabrication and hardware reinforcing requirements of ANSI/SDI A250.8 and ANSI/SDI A250.6.
- Firedoor brand 61LS, 63LS, 83LS and 89LS Series 1 3/4" (44 mm) 6-panel doors have each face formed of 18 gage hot-dip galvanized (galvanneal) steel, coating Class A40 (ZF120). Doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). As an option, LS doors may be ordered with square (90 degree) edges for a non-handed, reversible feature or square (90 degree) edges and handed. The top and the bottom of the door are formed using 18 gage (minimum) galvanized inverted channels securely welded to the door face. As an option, the top may be ordered closed flush with an additional screw applied channel. Hardware preparations are designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6.
- Firedoor brand 61CS and 63CS Series 1 3/4" (44 mm) 6-panel doors have each face formed of 18 gage hot-dip galvanized (galvanneal) steel, coating Class A40 (ZF120). Doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). As an option, LS doors may be ordered with square (90 degree) edges for a non-handed, reversible feature or square (90 degree) edges and handed. This CS construction utilizes pairs of back to back 22 gage hat-shaped steel stiffeners welded to door faces, spaced to clear embossing. Spaces between stiffeners are insulated with inorganic batt type insulation. The top and the bottom of the door are formed using 18 gage (minimum) galvanized inverted channels securely welded to the door face. As an option, the top may be ordered closed flush with an additional screw applied channel. Edges and hardware preparations are designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6.

Steel Stiffened Doors:

- Firedoor brand 07WE (old 700) and 05WE (old 500) Series 1 3/4" (44 mm) doors have each face formed of 18, 16, 14, or 12 gage hot-dip galvanized (galvanneal) steel. Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. 07WE doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). 05WE doors are constructed with square (90 degree) edges for a non-handed, reversible feature. 07WE and 05WE doors have a

continuously welded edge seam extending the full height of the door. All welds are ground, filled and dressed to provide smooth, flat edges.

- Firedoor brand 07LS and 05LS Series 1 3/4" (44 mm) doors have each face formed of 16 or 18 gage hot-dip galvanized (galvanneal) steel. Coating Class A40 (ZF120) is standard; coating Class A60 (ZF180) is optionally available. 07LS doors are constructed as handed and beveled 1/8" in 2" (3.2 in 51 mm). 05LS doors are constructed with square (90 degree) edges for a non-handed, reversible feature. 07LS and 05LS doors have a continuous mechanical interlocking edge seam full height. As an option, 07LS and 05LS doors may have the interlocking edge seam made seamless by applying a non-structural bonded filler, sanding and finishing smooth.

All of the above Series designations utilize pairs of back to back 22 gage hat-shaped steel stiffeners welded to door faces, spaced not over 6 inches (152 mm) apart. Spaces between stiffeners are insulated with inorganic batt type insulation. The top and the bottom of the door are formed using 18 gage (minimum) galvanized inverted channels securely welded to the door face. As an option, the top may be ordered closed flush with an additional screw applied channel.

Construction of WS doors is designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6. Basic construction (except edges) and hardware reinforcing of LS doors is designed to meet requirements of HMMA-861, ANSI/SDI A250.8 and ANSI/SDI A250.6.

Stile and Rail Doors ((ANSI/SDI A250.8 Model 3) :

Amweld brand Series 300 1 3/4" (44 mm) doors are of rigid tubular stile and rail construction in flush or full glass design. Stiles and rails are 16 gage hot-dip galvanized (galvanneal) steel, coating Class A40 (ZF120). Face joints and intersections are continuously welded, ground, filled and dressed to provide smooth, flat faces. As an option, perimeter stiles and rails may be insulated with inorganic batt type insulation. Closer reinforcing (where specified) is 14 gage minimum. Doors are constructed as a square edge non-handed door using a handing plate for field reversibility. Panels for flush doors are flat, 18 gage hot-dip galvanized (galvanneal) steel, coating Class A40 (ZF120) steel, securely bonded by a thermosetting adhesive to an EPS core. Doors are constructed to meet fabrication and hardware reinforcing requirements of ANSI/SDI A250.8 (Model 3) and ANSI/SDI A250.6.

Design Clearances:

All doors are undersized from frame opening sizes for head, jamb, and meeting stile clearances in accordance with NFPA-80, whether fire rated or not. These are generally 1/8" (3.2 mm) at head and jambs and 1/8" (3.2 mm) to 1/4" (6.4 mm) at meeting edges.

Design clearance at bottom (undercut as defined by HMMA-810 TN01) is 3/4" (19.6 mm) from bottom of frame unless noted otherwise in door schedule.

Louvers in Doors:

Where detailed or specified, insert type louvers with vision-proof inverted Y baffles are provided, Louver blades and frames are of 18 gage welded steel construction. Standard louvers are readily removable for finish painting, reversing hand, or replacement. Louvers may be factory or field installed.

Where detailed or specified at Series 07LW or 07WE doors, louvers may be inverted V blade or Zee blade) louvers of 18 gage minimum welded securely to door faces so as to be integral with door construction and non-removable.

Louvers for fire rated doors shall be adjustable insert type with fusible link system. Louvers shall not be used in smoke control doors.

Astragals on Doors:

Formed astragals of no less than 16 gage steel or flat astragals of not less than 14 gage steel may be provided for double doors. Astragals may be factory or field installed. Formed astragals are mortised, reinforced, drilled, and tapped to receive mortise hardware in accordance with ANSI/SDI A250.6. Fabrication details and installation methods required by labeling authorities take precedence over project details or specifications. Doors rated 3-hours shall have overlapping astragals. Where detailed or specified, doors shall not have astragals that inhibit operation of either leaf independently.

Provisions for Door Glazing:

Where detailed or specified, doors may be provided with low profile formed steel kits factory or field installed. Kits are screw-in type with a 3/8" (9.6 mm) gap to accommodate 1/4 inch (6.4 mm) thick glass and are readily removable for finish painting, reversing hand, or glazing replacement.

Galvanized steel options are recommended for exterior doors

Where detailed or specified at Series 07LW or 07WE doors, integral channel-shaped glass moldings of 18 gage minimum may be provided. Fixed molding shall be welded securely to door faces so as to be integral with door construction and non-removable. Removable stop shall have tightly fitting butted corners and shall be secured with # 6 (minimum) cadmium or zinc plated oval head sheet metal screws with a 3/8" (9.6 mm) gap to accommodate 1/4 inch (6.4 mm) thick glass. Glazing kits for other than 3/8" (9.6 mm) gaps are available where indicated or specified. Size, quantity, and glazing methods required by labeling authorities take precedence over project details or specifications.

Hardware Preparations on Doors:

Standard hinge preparation in non-handed doors accepts 4 1/2" (114.3 mm) standard weight or heavy duty butt hinges. Other preparations are available.

All LE Series doors are reinforced for surface closers as standard.

Lockset preparation provides for field installation of locksets manufactured in accordance with ANSI/BHMA A156.115. Standard mortise and cylindrical lock reinforcing are integral boxes extruded, drilled, and tapped. Mounting holes for surface applied escutcheons are drilled in the field by others. Flat lock fronts are recommended for square edge doors. Common standard lock preparations include:

- D - Cylindrical.
- L - Heavy duty thru-bolted cylindrical lock, usually with levers, pierced for individual patterns.
- T - Heavy duty thru-bolted cylindrical lock, usually with levers, pierced for majority of patterns.
- Y - Fed. 86 mortise lock with escutcheon trim.
- YBP - Fed 86 mortise lock edge, blank faces.
- YST - Fed 86 mortise lock edge, pierced for individual sectional trim patterns.
- U/FB - Universal strike, ANSI flushbolts
- PB - Rim Panic - blank faces
- MP - Mortise Panic, edge only, blank faces
- VR - Surface Vertical Rod Panic, blank faces
- PP - Push and Pull

Transom or Side Panels:

Where detailed, steel transom or side panels may be provided. All panels are sent separate for field installation. Series 55LE is provided where transom bars or mullions are not used. Series 56LE is provided where they are framed on all 4 sides. Panels have faces formed of 18 gage steel (16 gage optional). Steel channels form the top and bottom closures, face panels are securely welded around their entire perimeter 2" (51 mm) on center. Panel faces are securely bonded by a thermosetting adhesive to expanded polystyrene or "Kraft" honeycomb.

Panels may also be fabricated to match the gage, material, and construction of the adjacent door.

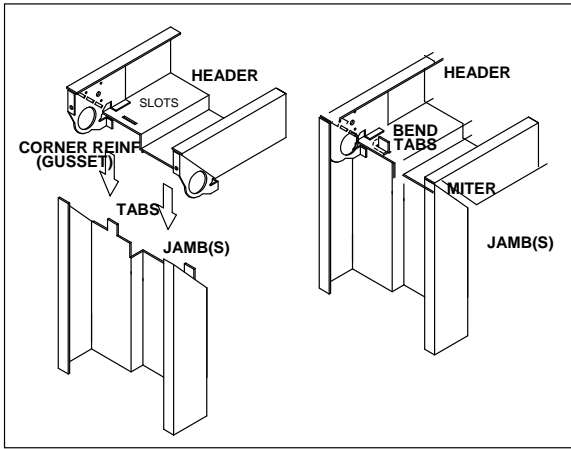
Where used in fire door frames, fabrication details and installation methods required by labeling authorities take precedence over project details or specifications.

Where detailed or specified, panels may be mortised, reinforced, drilled, and tapped to receive mortise hardware in accordance with ANSI/SDI A250.6 and/or reinforced with no less than 14 gage steel for closers.

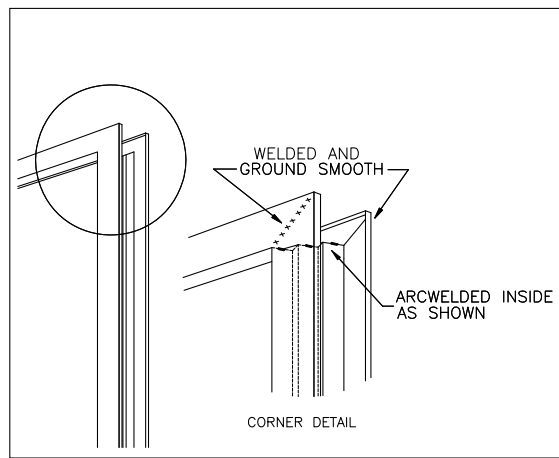
Transom panels used without transom bar may have formed astragals of no less than 16 gage steel or flat astragals of no less than 14 gage steel (at manufacturer's or fire rated requirement option).

FRAMES:

- Amweld brand 400 Series "Inter-Lok") standard steel frames for 1 3/4" (44 mm) doors are available in 16 or 14 gage cold rolled steel or hot-dip galvanized (galvanneal) steel. For hot-dip galvanized (galvanneal) steel, Class A40 (ZF120) is standard; Class A60 (ZF180) is optional. Designed and fabricated to meet the construction requirements of ANSI/SDI A250.8, the 400 Series is a knocked down (K-D) design with precision fit corners, designed to be installed before walls. 400 Series frames are also available welded and ground smooth in accordance with ANSI/SDI A250.8. 400 Series are unequal rabbet, cased opening, or single rabbet, available in profiles to fit almost any wall condition. Standard faces are 2" (51 mm). Snap-in anchors for masonry, existing walls, wood or metal stud walls are standard (available labeled as required). Some profiles may require weld-in anchors. The 400 Series is suitable for interior or exterior locations.
- Amweld brand 4400 Series frames are the double egress profile variation of the 400 Series. The profile allows 1 3/4" (44 mm) doors to be centered in the frame.

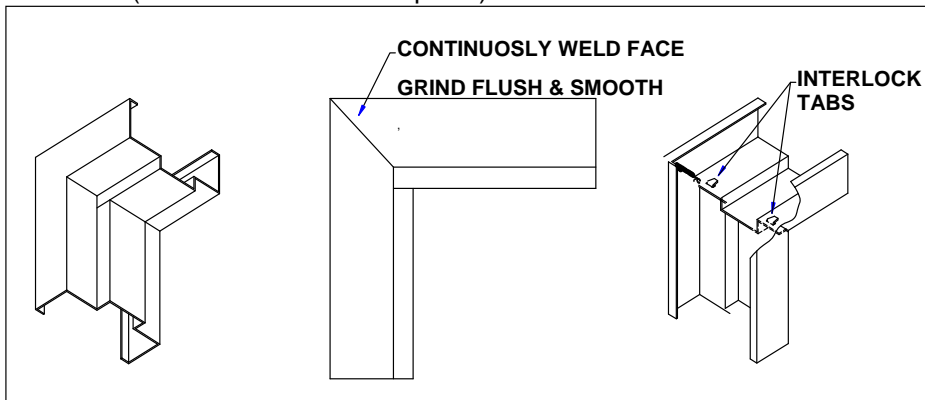


400 SERIES INTERLOCKING CORNER (K-D SHOWN)



4400 SERIES (DOUBLE EGRESS) CORNER (WELDED SHOWN)

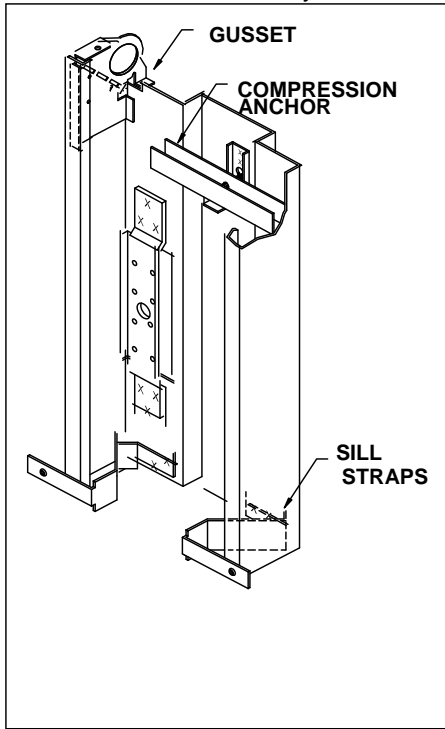
- Amweld brand 3000 Series thermal break frames are another variation of the 400 Series. These incorporate a rigid continuous interlocking PVC section at the base of the stop. The 3000 Series is especially suitable for cold climates since it minimizes the transfer of cold or frost through the frame.
- Firedoor brand FR Series frames for 1 3/4" (44 mm) doors are available in 16, 14, or 12 gage hot-dip galvanized (galvanneal) steel; Class A40 (ZF120) is standard, Class A60 (ZF180) is optional. Designed and fabricated to meet the construction requirements of HMMA-861 and ANSI/SDI A250.8, the FR Series is a welded or knocked down (K-D) design with precision fit corners, designed to be installed before walls. FR Series are equal rabbet, cased opening, double egress, or single rabbet, available in virtually any profile to fit any wall condition. Standard faces are 2" (51 mm). Welded in or snap-in anchors for masonry, existing walls, wood or metal stud walls are standard (available labeled as required). The FR Series is suited for interior or exterior locations.



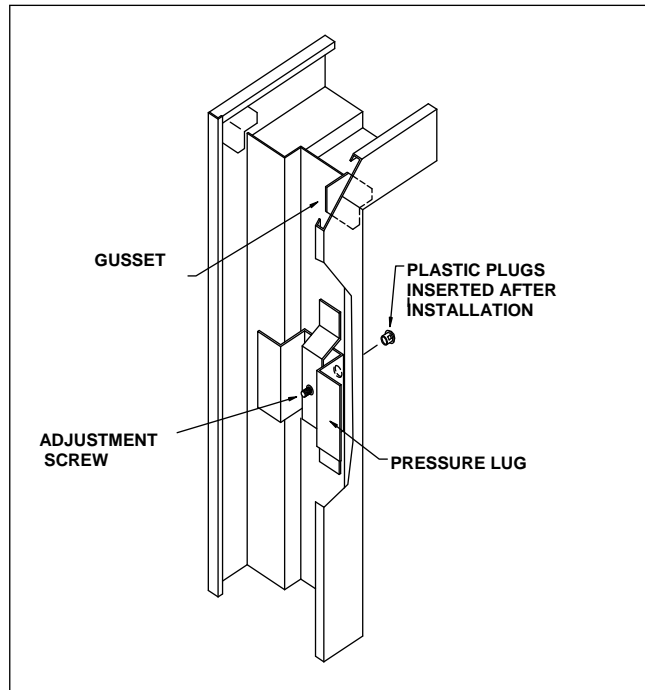
FR SERIES INTERLOCKING CORNER (WELDED SHOWN)

- Amweld brand 2600 Series slip-on drywall standard steel frames for 1 3/4" (44 mm) doors are available in 16 or 14 gage cold rolled steel or hot-dip galvanized (galvanneal) steel. For hot-dip galvanized (galvanneal) steel, Class A40 (ZF120) is standard; Class A60 (ZF180) is optional. Designed and fabricated to meet the construction requirements of ANSI/SDI A250.8, the 2600 Series is a knocked down (K-D) design with precision fit corners, designed to be installed over finished walls. 2600 Series are unequal rabbet, or single rabbet, available in profiles to fit any drywall condition. Standard faces are 2" (51 mm). Frames feature a screw adjusting anchor, welded-in sill strap and "Inter-Lok" corner construction. Slots for screws are pierced in headers for fastening to gussets if wall irregularities occur at corners. The 2600 Series is suitable for interior drywall locations.
- Amweld brand 4600 Series frames are the cased opening version of the 2600 Series with shortened adjusting anchors.
- Firedoor brand FR Series Pressure Fit (slip-on drywall) frames for 1 3/4" (44 mm) doors are available in 18, 16 or 14 gage hot-dip galvanized (galvanneal) steel; Class A40 (ZF120) is standard; Class A60 (ZF180) is optional. Designed and fabricated to meet the construction

requirements of ANSI/SDI A250.8 and HMMA-861 (as applicable to this design), the FR Series Pressure Fit is a knocked down (K-D) design with precision fit corners, designed to be installed over finished walls. Frames are equal rabbet, cased opening, or single rabbet, available in profiles to fit any drywall condition. Standard faces are 2" (51 mm). Frames feature a screw adjusting anchor, sill strap anchors and K-D corner construction. The FR Series Pressure Fit is suitable for interior drywall locations.

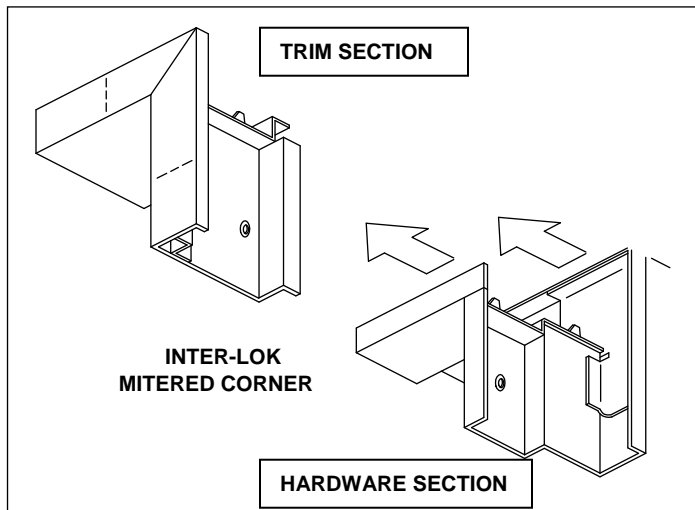


2600 SERIES SLIP-ON DRYWALL



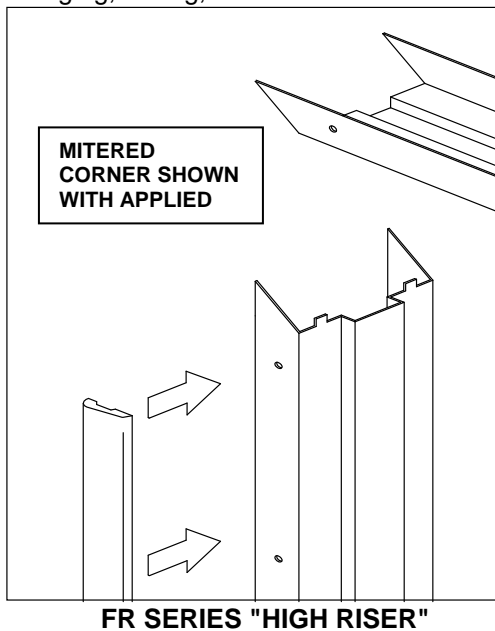
FR SERIES PRESSURE-FIT DRYWALL

- Amweld brand 800 Series adjustable "retrofit" steel frames for 1 3/4" (44 mm) doors are available in 16 or 14 gage cold rolled steel or hot-dip galvanized (galvanneal) steel. For hot-dip galvanized (galvanneal) steel, Class A40 (ZF120) is standard; Class A60 (ZF180) is optional. 800 Series frames are designed with header and jambs in two pieces to wrap around existing walls from 3 1/4" - 9 7/16" (83 - 240 mm) in wall size. Standard frame is K-D with tightly fitting corners designed with 2" (51 mm) faces and 1/2" (13 mm) returns. Custom variations are available to wrap around almost any wall condition. It is the ideal frame for lead paint encapsulation.
- Amweld brand 1800 Series "retrofit" frames are the "hardware section only" variation of the 1800 Series. This Series is used to wrap over existing frames to repair deterioration without costly removal.



800 SERIES & 1800 SERIES RETROFIT FRAME CORNER

- Firedoor brand FR Series "High Riser" frames for 1 3/4" (44 mm) doors are available in 18 gage hot-dip galvanized (galvanneal) steel, Class A40 (ZF120) unpainted. The "High Riser" is a knocked down (K-D) design with precision fit corners, designed to wrap over walls. "High Riser" frames are equal rabbet or cased opening available in custom depths to fit wall condition. Standard faces are 2" (51 mm), pierced for screw fastening to walls. There are no returns, allowing for application of casings or trim. The FR Series "High Riser" is ideal for interior swinging, sliding, or bi-fold doors in hotels, apartments, or condominiums.



FRAMES FOR GLAZING OR PANELS:

- Amweld brand 400 Series, Firedoor brand FR Series, and Amweld brand 3000 Series may be fabricated to suit glazing or panels in transoms and/or sidelights. These frames are manufactured to approved shop drawings, K-D or welded. Mullions or bars are accurately cut to length and notched as required. Stops for retaining glazing are butted, accurately cut to length, and either applied or shipped with frames.
- Amweld brand 600 Series slip-on drywall frames for 4-sided borrowed lights are a variation of the 2600 frames. A dimpled hole is provided at the top of each jamb and a tab is notched into header and/or sill. Tabs are bent over at installation and #8 drywall screws are used to fasten through jamb, tab, and wall stud.

FRAME HARDWARE PREPARATIONS:

- Standard hinge preparation in 400 and 2600 frames accepts 4 1/2" (114.3 mm) standard weight or heavy duty butt hinges. Patented set screws are used to adjust hinge depth or for shimming purposes. Other preparations are available.
- All frames are reinforced for surface closers where ordered.
- Standard strike preparations are in accordance with ANSI/BHMA A156.115 and ANSI/SDI A250.6. Common standard strike preparations include:
 - U - "Universal" ANSI 4 7/8" strike.
 - D - ANSI 2 3/4" strike.
 - FB - Non-handed ANSI flushbolt strike.
 - AFB - Handed ANSI automatic flushbolt strike
 - PB- Rim exit device.
- Other preparations for deadlock strikes, surface closers, parallel arm closers, holders, stops, or other templated builders' hardware are available.

FRAME BASE (FLOOR) ANCHORS:

- 400, 4400, 3000, and FR Series frames are equipped with one welded-in floor anchor per jamb. At existing walls, an additional jamb anchor may be substituted.

- 2600, 4600, and FR Series slip-on drywall (pressure fit) frames are equipped with straps at the bottom of each jamb for fastening to wall studs or wall runner channels. Straps are welded in place, not loose clips that tend to get misplaced.

FRAME WALL ANCHORS:

- 400, 4400, and 3000 Series frames are equipped with three snap-in anchors, suitable for wall construction, per jamb for field installation. An extra wall anchor is provided for fire door frames over 7'-6" in height or for fire door frames where floor anchor is unusable. Securely factory weld wall anchors where depth of frame prohibits the use of snap-in designs.
- FR Series frames installed in new masonry have adjustable strap and stirrup anchors, T-strap anchors or wire anchors; not less than two for frame openings up to 60" (1524 mm), three up to 90" (2286 mm), or four up to 120" (3048 mm).
- FR Series frames installed in stud partitions have steel anchors of suitable design securely welded to jambs not more than 18" (457 mm) from top or bottom and not more than 32" (813 mm) on center.
- FR Series frames installed with anchor bolts have frame soffits dimpled or countersunk for 3/8" (9.5 mm) bolts not more than 6" (152 mm) from top and bottom and not more than 26" (660 mm) on center. Bolts are provided by the installer as rough hardware.
- 2600, 4600, and FR Series slip-on drywall (pressure fit) frames have one steel adjusting anchor near the top of all jambs for screw adjustment after installation.
- 800 and 1800 Series frames are pierced and dimpled at soffit of hardware section. Series 800 frame trim sections shall be pierced and dimpled. Mounting holes shall be for #12 screws furnished by installer.
- FR Series High Riser frames are pierced for # 8 drywall screws furnished by installer on both faces.

FRAME ASSEMBLY:

- All frames are initially fabricated as knocked down (KD).
- 400, 4400, 800, 1800, 2600, 4600, 600, 3000, FR, FR pressure fit, and FR High Riser Series frames are field assembled by installer. As an option, all frame members may be marked and bundled together for each opening.
- 400, 4400, and FR Series frames, as an option, may be shipped welded at corners in accordance with ANSI/SDI A250.8 with temporary shipping spreader welded to jambs at bottom.
- 400, 4400, and FR Series frames, as an option, may be shipped welded at corners in accordance with HMMA 861. Faces are continuously welded internally or externally, filled, and ground smooth. Welds at tabs for positioning during welding process are at the manufacturer's option. Temporary shipping spreader is welded to jambs at bottom.

PRIMER FINISH:

Exposed surfaces on doors and all surfaces on frames are cleaned and treated, then given a shop coat of baked-on gray primer. The prime paint undergoes periodic testing to assure compliance with ANSI/SDI A250.10.

FR Series "High Riser" frames are unfinished.

COLOR OPTIONS:

3-sided K-D frames and most standard doors are available, on a special order basis, with a choice of decorator colors in lieu of primer. These are intended as a substitute for field painting on interior openings. Factory finish meets ANSI A250.3 test procedure and acceptance criteria. Contact Black Mountain Door for availability.

SHAPES, PROFILES, ELEVATIONS:

Consult Black Mountain Door Technical Data for information and guidance.

PERFORMANCE BASED COMPONENTS/ASSEMBLIES:

Windstorm-Rated (Pressure Resistant) **(08 39 00)**:

Construction of windstorm rated doors is based on physical testing and engineering analysis of assemblies tested to ASTM E330, ASTM E1886, ASTM E1996, and ANSI A250.13. Performance ratings are Design Pressure (DP) in pounds per square foot of the entire assembly. The DP is derived from Structural (not Architectural) performance. The location of the door opening in the building, physical characteristics of the building, and the location of the building will determine the DP and impact requirements. Each door opening may be rated differently. Construction, dimensions, lights,

allowable hardware, etc, is performance-based, therefore products are specified and ordered by Design Pressure (DP). Consult Black Mountain Door's literature or published Approvals for options. Where Building Codes recognize ANSI A250.13 or allow component substitutions, ALL components must meet or exceed the required DP of the assembly. Component substitutions may retain or decrease (but SHALL NOT increase) the DP of the assembly. Consult Appendix A and Appendix C of ANSI A250.13 for more information on component substitution. Details, glazing, hardware applications, etc. required by labeling authorities take precedence over project details or specifications.

Lead-Lined (X-Ray) Protection (08 34 49):

07WE doors may be lead lined for X-ray or other protection. Lead is factory installed and may be provided by Black Mountain Door or the X-ray protection Contractor. Thickness of lead and purity must be specified.

400 Series or FR Series Frames for lead lined doors have appropriate clips for retaining lead. Lead is supplied and field installed by X-ray Protection Contractor.

Bullet-Resisting (Security) Assemblies (08 34 53):

Construction of bullet resisting doors and frames is proprietary and based on physical testing and engineering analysis meet bullet resisting levels of UL-752. Series CS are available in Level 1 through 8. Series 1538 is available in Level 1. 1544 Series is available in Level 3. All doors are handed; CS doors are beveled. Products are specified and ordered by Level and Series. Series 1538 and 1544 incorporate security plates that overlap the frame on lock edge.

To maintain ratings, the door, frame, and latches must be supplied together. Fabrication details and hardware applications required by labeling authorities take precedence over project details or specifications.

Mounting holes for surface-applied escutcheons, cylinders, thumb pieces, and knobs must be drilled in the field unless otherwise specified.

Consult Black Mountain Door for hardware and glazing options.

Acoustical Doors (08 34 73):

Acoustical doors are normally supplied with the door, frame, and gaskets. Construction is proprietary and specific to the STC rating. Consult Black Mountain Door for acoustic performance data and specific installation requirements. Performance testing has been conducted in accordance with ASTM E 90 on an operable unit (not a sealed panel). If possible, select performance based on sound transmission loss at specific frequencies. Some doors, although rated higher in overall STC rating, do not perform as well as lower rated doors in certain specific frequency ranges.

The STC capabilities of some standard 15LE and 61LE doors tested with commercially available gaskets ranges from 31 to 35.

The following are STC rated ASSEMBLIES:

- STC 35: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. (Requires 5" HD hinges).
- STC 41: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. (Requires 5" HD hinges).
- STC 41 Vision: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. Vision up to 1296 sq. in. Vision up to 1296 sq. in. (0.84 sq. meters). (Requires 5" HD hinges).
- STC 42: Amweld brand Series 51LE full flush 16 gage with SoundShield(r) core.
- STC 42: Amweld brand Series 53LE seamless 16 gage with SoundShield(r) core.
- STC 45: Amweld brand Series 51LE full flush 16 gage with SoundShield(r) core and security panel. May have a U.L. 3/4 hour label with or without 250° temperature rise rating. (Requires 5" HD hinges).
- STC 45: Amweld brand Series 53LE seamless 16 gage with SoundShield(r) core and security panel. May have a U.L. 3/4 hour label with or without 250° temperature rise rating. (Requires 5" HD hinges).
- STC 47: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. (Requires 5" HD hinges).
- STC 49: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. (Requires 5" HD hinges).
- STC 49 Pair without mullion: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. Consult manufacturer for pair details. (Requires 5" HD hinges).

- STC 51: Firedoor brand Series CS seamless 18 gage. UL fire rating up to 3-hours available. (Requires 5" HD hinges).

ADVANTAGES:

- **Black Mountain Door:**

Through the union of two long-time Brand Names, Black Mountain Door offers an extremely varied product line.

A centrally located Distribution Center, an extensive Distributor Base, two manufacturing facilities, and knowledgeable Engineering & Customer Service personnel assure ability to respond to Customer needs.

- **Zinc Coatings:**

Zinc alloy coatings are extensively used throughout product lines. Zinc coating protects steel by serving as a barrier between the steel and the corrosive elements in the atmosphere. If the coating is damaged, galvanic action continues to protect the steel by sacrificing itself. If a spot of rust occurs due to surface damage, the rust will not travel back under the adjacent coating, nor will it pit deeply into the abrasion

Zinc alloys with the steel when utilizing the hot dip galvanizing process, becoming an integral part of the product. In many products, zinc coating is STANDARD.

- **Laser Welding:**

Strength - The laser weld is stronger than the steel itself

Appearance - Since the laser does not use filler material as used in stick and mig welding, the edge is more uniform. The result is a laser edge of excellence

Precision - The laser edge is the most precise edge on the market. Lasers deal in 0.001" (0.03 mm) where comparable welding operations deal in 1/16" (1.6 mm) variances

Durability - No grinding is required, so the edge stays strong. A Lifetime Warranty offered on edge of door

4. Technical Data

APPLICABLE STANDARDS:

The major Standards relating to Black Mountain Door's products are listed for reader's reference.

Although many are referenced in this Document, the list is by no means all-inclusive. They are listed by issuing authority, current number, and current title.

American Society for Testing and Materials (ASTM):

- ASTM A568/A568M Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- ASTM A879/A879M Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface.
- ASTM A924/A924M - Standard Specification for General Requirements for Sheet Steel, Metallic-Coated by the Hot-Dip Process.
- ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- ASTM A1011/A1011M - 08 Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- ASTM E1886 Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
- ASTM E1996 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

American National Standards Institute (ANSI):

- ANSI/SDI A250.3 - Test Procedure and Acceptance Criteria for Factory-Applied Finish Painted Steel Surfaces for Steel Doors and Frames.

- ANSI/SDI A250.4-2011 – Test Procedure and Acceptance Criteria for – Physical Endurance for Steel Doors, Frames and Frame Anchors
- ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
- ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors & Frames.
- ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
- ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
- ANSI A250.13 - Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies.

National Fire Protection Association (NFPA):

- NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
- NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

Underwriters Laboratories, Inc. (UL):

- UL-9 - Standard for Fire Tests of Window Assemblies.
- UL-10B - Standard for Fire Tests of Door Assemblies.
- UL-10C - Standard for Positive Pressure Fire Tests of Door Assemblies.
- UL-752 - Standard for Bullet-Resisting Equipment.
- UL-1784 - Standard for Air Leakage Tests of Door Assemblies.

Steel Door Institute (SDI):

- SDI-112 - Zinc-Coated (Galvanized/Galvannealed) Standard Steel Doors and Frames.
- SDI-117 - Manufacturing Tolerances Standard Steel Doors and Frames.
- SDI-118 -Basic Fire Door Requirements.
- SDI-124 - Maintenance of Hollow Metal Doors and Frames
- SDI-128 - Guidelines for Acoustical Performance of Standard Steel Doors and Frames.

Hollow Metal Manufacturers Association (HMMA):

- HMMA 803 - Steel Tables.
- HMMA 840 - Installation and Storage of Hollow Metal Doors and Frames.
- HMMA 841 - Tolerances and Clearance for Commercial Hollow Metal Doors and Frames.
- HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames.
- HMMA 865 - Guide Specifications For Sound Control Hollow Metal Doors and Frames.
- HMMA 820-TN01 - Grouting Hollow Metal Frames.
- HMMA 820-TN02 - Continuously Welded Frames.
- HMMA 820-TN03 - Guidelines for Glazing of Hollow Metal Transoms, Sidelights, and Windows.
- HMMA 840-TN01 - Painting Hollow Metal Products.

THERMAL PROPERTIES OF DOORS & CORES:

- Expanded Polystyrene (EPS) Supercore® doors provide consistent insulation values, even in sub-zero temperatures. Apparent U-value/R-values of 15LE Series 1-3/4 inch (45 mm) doors, depending on gage of face sheets, range from 0.28/3.57 to 0.24/4.16. Detailed information is contained in Black Mountain Door's Tech Data. Note that these ratings do not apply to sealed door panels, but to operable steel door and frame assemblies.
- 85LE and 87LE polyurethane core doors with 16 or 14 gage faces as commonly specified for exterior doors have a still air U-value of 0.080 and R-value of 12.491.
- 45LE and 47LE honeycomb doors have not been tested or calculated since the Supercore® is more thermally efficient and consistent.
- 35 and 37 Series doors are primarily intended for interior use in certain 250 degree F (121 degree C) temperature rise fire door conditions, therefore ratings are not applicable.
- The polystyrene core used in 25 and 27 LS & WE Series doors is similar to Supercore®. U-value and R-value respectively of this core based on an 18 gage door is 0.136 and 7.292.
- The polyurethane core used in 83LS, 89LS, and 89WE Series doors has a U-value of 0.080 and R-value of 12.491.
- Thermal ratings for embossed doors are similar (but not identical) to Supercore® doors since the core thickness decreases in areas surrounding the embossing.

- Thermal ratings for steel stiffened doors are inconsistent throughout the door due to stiffeners spanning the door's interior. The insulation has an R value of 6.25 and a U value of 0.16.

FIRE RATED DOORS AND FRAMES:

As part of the Quality Program of Black Mountain Door, doors and frames are under the factory inspection and Follow-up Services program of BOTH Underwriter's Laboratories, Inc (UL) and Intertek Testing/Warnock Hersey (ITS/WHI). Where ordered, doors are provided with UL or WHI Marks (labels) with appropriate fire resistance ratings for the class of opening indicated. Frames for fire doors are provided with appropriate Marks (labels) certifying their use with fire doors. The hourly classification (3-hour, 1 1/2-hour, 3/4-hour, 1/3-hour) indicates products have passed both the fire and hose stream criteria of UL 9, UL 10b, UL 10c, NFPA 252, and/or UBC 7-2 (1997) standard fire test. The hose stream requirement is sometimes deleted for 20 minute ratings. Since the deletion of hose stream does not qualify these units as true fire doors, the ratings are identified with a supplemental notation "no hose stream" or similar wording.

Marks (labels) are the only necessary certification that doors, frames, and fire windows shall have been tested or otherwise evaluated to fire protection standards. These Marks (labels) may be of metal, mylar, or may be embossed into the material. Where ordered, door Marks (labels) may incorporate appropriate temperature rise ratings for the class of opening indicated.

Mylar labels are furnished with a premask to deter overpainting. The premask is marked with "Label - Do Not Remove."

If the door or frame is modified in any way (i.e., louvers added), the action invalidates the label and it must be removed.

As labeling capabilities are under constant change, consult Black Mountain Door's website or Technical Data for current information.

Construction details and hardware applications required by labeling authorities take precedence over project details or specifications.

SMOKE CONTROL DOORS:

Testing or evaluation to UL-1784 by Industry Groups has established that the key components for achieving smoke control are the gaskets supplied under another Section. Where ordered, to signify the qualification of doors for smoke control when equipped with suitable gaskets, a supplemental label or "S" mark on the door label is used.

ENVIRONMENTAL CONSIDERATIONS

Black Mountain Door has posted a "green building" (LEED) statement on the website indicating how materials aid in achieving points for the building. For example, materials provided by Black Mountain Door are generally over 90% (by weight) steel; acknowledged as one of the most recycled materials. It must be understood that certain "low percentage by weight" components are not able to utilize recycled material due to their performance requirements.

LIMITATIONS

Black Mountain Door reserves the right to make changes in either design or specifications, and to make improvements to its products without prior notice and without incurring an obligation to incorporate such changes in products previously manufactured.

5. Installation

PREPARATORY WORK:

While unloading materials, assure that an accurate comparison to shipping documents is kept.

Examine all materials and store them in accordance with ANSI/SDI A250.8, HMMA 861, and HMMA 840.

Store in original, unopened, undamaged containers, identification labels intact.

Handle and store products according to recommendations published in technical materials. Leave products wrapped or otherwise protected and under clean and dry storage conditions until required for installation. Do not store in non-vented plastic or canvas shelters.

Store doors in upright position, protected at corners, under cover on building site on wood sills or on floors in a manner to prevent rust and damage.

Store frames in upright position under cover on building site on wood sills or on floors in a manner to prevent rust and damage.

Before beginning installation, verify that substrate conditions previously installed under other sections are acceptable for installation of doors and frames in accordance with installation instructions and technical bulletins.

Verify rough openings are properly sized, plumb, true, and level.
Select fasteners of adequate type, number, and quality to perform intended functions.

BUILDING CODES:

Installation must comply with the requirements of all applicable local, state and national jurisdictions.

PROCEDURE:

Verify swing, size, opening number, and any fire rating (or other) labels are correct.
Install frames plumb, straight, and true, rigidly secured in place and properly braced; comply with ANSI/SDI A250.11 and manufacturer's instructions.
Install Fire and Smoke Control Doors and Frames in accordance with NFPA 80.
Maintain accuracy of frame installation to the following tolerances:
Plumbness: Plus or minus 0.063 inch (1.6 mm) measured through a line intersecting corner of vertical members and the head to the floor.
Squareness: Plus or minus 0.063 inch (1.6 mm) measured through a line 90 degrees from one jamb at upper corner to opposite jamb.
Alignment: Plus or minus 0.063 inch (1.6 mm) measured on jambs, through a horizontal line parallel to plane of wall.
Twist: Plus or minus 0.063 inch (1.6 mm) measured at face corners of jambs, on parallel lines perpendicular to plane of wall.
Grout fill frames in new masonry in accordance with ANSI/SDI A250.8, ANSI/SDI A250.11, and HMMMA820-TN01. Frames installed in drywall partitions SHALL NOT be grouted.
Install floor and wall anchors securely into frames (where snap-in anchors are used).
Secure all connections to adjacent construction using bolts (rough hardware) suitable for the substrate.
Install doors and hardware in accordance with hardware manufacturers' templates and instructions.
Maintain correct operational clearances.
Adjust hinges, locksets, closers, and other hardware. Lubricate using a suitable lubricant compatible with door and frame coatings.
If applicable, install Acoustical (Sound Control) Frames assuring that installation is coordinated with special considerations of SDI-128 and HMMMA-865. Install Windstorm Rated Assemblies in compliance with instructions and information published in the product Listing (UL, ITS, FBC, etc.).

PREPARATION FOR FIELD PAINTING:

Finish exposed field welds to present a smooth uniform surface.
Touch-up exposed surfaces scratched or marred during shipment, installation, or handling and field prime scratches or bare edges with a lead-free rust inhibitive Direct to Metal (DTM) primer.
Before application of finish paint coat, ensure that surfaces are dry and free of dirt, oil, and dust.
Assure that finish paint is a rust inhibitive Direct to Metal (DTM) formulation.

FIELD PAINTING:

Black Mountain Door's prime paint has been formulated to give the product maximum protection for a limited period of time. It is important that compatible materials be used in the final or finished coat of paint. The painter should test a small section of the door or frame if there is any doubt as to the composition or compatibility of the finish coat. Certain finish coat materials are not recommended. Consult Black Mountain Door's Tech Data. Apply finish coat over clean, dry primer, complying with application instructions of finish coating manufacturer.

REPAIR OF FACTORY FINISH COLOR PAINT:

If it becomes necessary to repair or add a field coat of finished paint to a factory finished door or frame, first sand the door or frame for better adhesion and prime any bare metal. Contact Black Mountain Door for touch-up paint and recommendations for use.

PROTECTION AFTER INSTALLATION:

Protect installed products and finished surfaces from damage during construction.
Remove from project site and legally dispose of construction debris associated with this work.

6. Availability & Cost

Contact Black Mountain Door for information on the distribution network and on product availability. Budget cost information may be obtained from a local Black Mountain Door distributor or through the number or E-mail address above.

7. Warranty

For information on warranty conditions, duration and remedies, contact Black Mountain Door.

8. Maintenance

Door assembly maintenance will vary depending on the location, severity of environment and level of usage. Periodic inspection is recommended to ensure integrity of the coating and hardware operation. Doors may require cleaning with a mild detergent. Hinges, locksets and other hardware may be lubricated using a suitable lubricant compatible with door and frame coatings. Repair or replace damaged product.

Refer to SDI-124 for recommendations on maintenance prior to Project acceptance.

9. Technical Services

A staff of factory trained sales and engineering personnel are available to offer design assistance and technical support.

10. Filing Systems

Pending.

Additional product information is available from Black Mountain Door upon request or at www.blackmountaindoor.com.