**3-Part CSI MasterFormat Specification**

**SECTION 08 3123**

**Floor DOORs AND FRAMES**

Rev 12/22

1. GENERAL
	* + 1. SUMMARY
				1. Section includes:

Floor Doors for access between building floors as indicated on drawings and specified herein

* + - 1. references
				1. Aluminum Diamond Tread Plate: ASTM B632-02, 1/4 inch 6061-T6 aluminum with mill finish.
				2. Aluminum Extrusion: 6061-T6 aluminum.
				3. Steel Diamond Tread Plate: ASTM A786.
				4. Steel Angle: ASTM A36-94 steel frame, structural.
				5. Stainless Steel Diamond Tread Plate: ASTM A793 stainless steel, No. 304 finish.
				6. Stainless Steel Angle: ASTM A276 stainless steel, No. 304 finish.
				7. Stainless Steel Smooth Plate: ASTM A240 smooth plate stainless steel, type No. 316.
				8. Fasteners: Type No. 316 stainless steel. ASTM F593 for bolts and ASTM F594 for nuts.
				9. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
			2. Action SUBMITTALS
				1. Shop Drawings: Indicate configuration and dimensions, show components, adjacent construction, required clearances and tolerance and other affected work.
				2. Product Data: Manufacturer’s technical data for each type of floor door, including setting drawings and finish requirements
			3. informational submittals
				1. Provide manufacturer's standard warranty.
				2. Sustainable Design Submittals:

Building Product Disclosure Requirements: To encourage the use of building products that are working to minimize their environmental and health impacts, provide the following information when available:

Material Ingredients Documentation demonstrating the chemical inventory of the product

* + - 1. Closeout submittals
				1. Manufacturer's Installation Instructions and Operation & Maintenance: Indicate installation, operation and maintenance requirements and rough-in dimensions.
			2. Quality Assurance
				1. Qualifications:

Manufacturer/Installer: Company specializing in manufacturing and installation of components specified in this Section with minimum of 5 years documented experience.

* + - * 1. Regulatory Requirements:

International Building Code for fire resistance rated construction

IBC Section 712 for Floor Fire Doors- tested in accordance with NFPA 288 and labeled by approved agency; Warnock Hersey or Underwriters Laboratory.

1. PRODUCTS
	* + 1. MANUFACTURER
				1. Babcock-Davis

9300 73rd Ave N

Brooklyn Park, MN 55428

PH: 888-412-3726

www.Babcock-Davis.com

* + - 1. ALUMINUM FLOOR DOORS
				1. Gutter Channel Frame (Drainable) Aluminum Floor Door: Drainable Floor door for use in exterior applications or where water penetration is a concern. Model BFDDP (Pedestrian load), Model BFDDHA (H20 load), Model BFDDSA (HS20 load)

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Aluminum **[gray primed] [clear anodized]** gutter profile, with integral 1.5 inch (38.1 mm) drainage coupling and perimeter gasket, **[Frame with continuous 1 inch anchor flange for cast-in-place installation] [Frame with continuous flange and 2 inch by 2 inch welded mounting tabs with 3/8 inch holes for bolt-in installation]**

Door: [**Single**] [**Double**] leaf; 1/4-inch-thick (6.4-mm-thick), diamond-pattern pattern **[Mill] [Clear Anodized] [Clear Lacquer] [SlipNOT®]** finish aluminum plate.

Loading Capacity: **[300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum deflection of 1/150; Model FDDPA] [AASHTO H20 concentrated wheel load, Model BFDDHA][AASHTO HS20 concentrated wheel load, Model BFDDSA]**

Gasket around entire perimeter

Hardware

Material: Type 316 stainless steel latch, hold-open arms, brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins.

 Operating Mechanism: Adjustable enclosed Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure

Latch: Stainless-steel slam latch with inside lever handle and outside handle.

Options

Lock**: [Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Skirting: 1/8 inch (3.2 mm) sheet aluminum used to form slab concrete opening beneath the frame, <Insert height

Safety Options

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two aluminum nut rails.

Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Gutter Channel Frame (Drainable) Large Equipment Hatch, H20: designed for infrequent, off-street traffic where moisture or liquid flow into the door is a concern. exterior applications or where water penetration is a concern. Model BFDOHA (H20 Load), Model BFDOSA (HS20 Load)

Clear Unobstructed Opening Size: **<Insert dimensions>.**

Frame: Aluminum, **[gray primed] [clear anodized]** gutter profile, with 1-1/2 inch (38.1 mm) drainage coupling, integral EPDM gasket and frame with continuous 1 inch (25.4mm) anchor flange. Hinge side frame reinforced by 1/4-inch (6mm) by 3-inch (76mm) by 2-inch (51mm) aluminum angle on 60-inch (1524mm) to 108-inch (2743mm) frames.

Door: Double leaf; 1/4-inch-thick (6.4-mm-thick), diamond-pattern **[Mill] [Clear Anodized] [Clear Lacquer] [SlipNOT®]** finish aluminum plate, with 6 inch (152 mm) rectangular tubes and 6 inch (152 mm) center I-beam support

 Loading Capacity: **[AASHTO H20 concentrated wheel load; Model BFDOHA] [AASHTO HS20 concentrated wheel load, Model BFDOSA]**

Hardware

Material: Type 316 stainless steel, including latch, hold-open arms, brackets, hinges, pins, and fasteners

Hinges: Heavy-duty butt hinges with stainless-steel pins.

Operating Mechanism: Adjustable, enclosed stainless-steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip.

Latch: Stainless-steel slam latch with inside lever handle and outside removable handle.

Optional Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key]**

Safety Accessories

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two aluminum nut rails.

Safety Accessories: Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Angle Frame Aluminum Floor Door: Cast-in installation, used where water infiltration and moisture are not a concern. Model BFDN

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Mill finish aluminum, C channel and angle profile.

Door: [**Single**] [**Double**] leaf; 1/4-inch-thick (6.4-mm-thick), diamond-pattern pattern **[Mill] [Clear Anodized] [Clear Lacquer] [SlipNOT®]** finish aluminum plate.

Manufacturers' offerings for loading capacity vary; confirm availability. See the Evaluations for discussion of AASHTO H20.

Loading Capacity: **[300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load and a maximum deflection of L/150; Model BFDNPA] [AASHTO H20 concentrated wheel load; Model BFDNHA].**

Gasket around entire perimeter

Hardware:

Material and Finish: Type 316 stainless steel, including latch, handle, lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins.

Operating Mechanism: Adjustable enclosed Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Type 316 Stainless-steel slam latch, with inside lever handle and outside removable square L handle.

Options

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Skirting: 1/8 inch (3.2 mm) sheet aluminum used to form slab concrete opening beneath the frame, <**Insert height**>.

Safety Accessories:

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. Type 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two aluminum nut rails.

Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Angle Frame - Existing Opening Aluminum Floor Door, Retrofit applications. Model BFDE

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Mill finish aluminum, 2 inch (50.8 mm) by 3 inch (76.2 mm) angle profile.

Door: [**Single**] [**Double**] leaf; 1/4-inch-thick (6.4-mm-thick), diamond-pattern mill-finish aluminum plate.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load and a maximum deflection of L/150; Model BFDEPA.

Gasket around entire perimeter

Hardware:

Material and Finish: Type 316 stainless steel, including latch, handle, lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel enclosed counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch, with inside lever handle and outside removable square L handle.

Options

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Skirting: 1/8 inch (3.2 mm) sheet aluminum used to form slab concrete opening beneath the frame, <**Insert height**>.

Safety Accessories:

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two aluminum nut rails.

Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Angle Frame Water Tight Aluminum Floor Door: Model BFDWTA

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Mill finish aluminum, 1/4 inch (6.4 mm) aluminum, mill-finish.

Door: Single leaf; 1/4-inch-thick (6.4-mm-thick), diamond-pattern mill-finish aluminum plate.

Manufacturers' offerings for loading capacity vary; confirm availability. See the Evaluations for discussion of AASHTO H20.

Loading Capacity: 625l bf/sq. ft. (26.35-kN/sq. m) live load with a maximum deflection of L/150 and watertightness to 10 ft (3.05 m) water column.

Gasket: EPDM water and odor resistant.

Hardware:

Material and Finish: Type 316 stainless steel, including latch, handle, lifting mechanism assemblies, hold-open arms, brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel counterbalancing spring enclosed in a telescoping tube, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Type 316 Stainless-steel pressure locks.

Optional Lock: External Padlock Hasp

Safety Accessories: Safety **[grate] [chains] [net] [railing] [telescoping safety post] <Insert safety device>**

* + - * 1. One Inch Pan Cover Aluminum Floor Door: For field installation of architectural flooring material. Model BFDPPA

For dry, interior installation only. Not intended for wet or exterior environments.

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: 1/4-inch (6.4-mm) structural aluminum frame, mill finish; **[Frame with holes for bolt-in] [frame with integral masonry anchors for cast-in-place].**

Door: Singleleaf; 1/4-inch-thick (6.4-mm-thick), aluminum smooth plate with extruded edging to obtain 1 inch (25 mm) deep recess for flooring infill.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load and a maximum deflection of L/150.

Gasketing: Closed cell neoprene.

Hardware:

Hinges: Nickel-plated concealed hinge.

Springs: Gas spring.

Hold Open Arm: Gas spring holds cover in open position

Latch: Type 316 stainless-steel slam latch with inside lever handle and outside removable 5/16-inch- (7.9-mm-) square L handle and 316 stainless steel threaded plug.

Optional Lock: **[Keyed deadbolt lock] [Keyed deadbolt lock with threaded protection plug] [Hasp and staple] <Insert lock type>.**

Safety Accessories: Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>**

* + - * 1. Recessed Cover Aluminum Floor Door: Allows for flooring infill. Model BFDRPA

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: 1/4 inch (6.4 mm) mill finish aluminum, angle profile. **[Frame with holes for bolt in] [Frame with integral masonry anchors for cast-in-place].**

Door: [**Single**] [**Double**] leaf; 1/4-inch-thick (6.4-mm-thick) aluminum smooth plate with 1/8-inch-deep (3.2-mm-deep) recess for application of finish materials.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load and a maximum deflection of L/150.

Gasket around entire perimeter

Hardware:

Material and Finish: Type 316 stainless steel, including latch and lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins.

Operating Mechanism: Coil Type 17-7 stainless steel compression springs enclosed in Type 316 stainless steel telescopic tubes designed to provide lift assistance, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle.

Optional Lock: **[Recessed padlock hasp] [Recessed padlock hasp with cover] [Keyed deadbolt lock] [Keyed deadbolt lock with threaded protection plug] [Hasp and staple] <Insert lock type>**

Safety Accessories: Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>**

* + - * 1. Angle Frame – Surface Mount, Aluminum Floor Door, designed for retrofit applications with internal flanges for easy mounting. Used where water or moisture intrusion is not a concern. Model BFDNLA\_X\_-SELN

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Mill finish aluminum 3/16" extrusion, 2 inch (50.8 mm) by 3 inch (76.2 mm) angle profile. Epoxy paint finish on exterior surfaces that is in contact with concrete.

Door: Single leaf; 13/16-inch-thick (4.8-mm-thick), diamond-pattern mill-finish aluminum plate.

Loading Capacity: 150-lbf/sq. ft. (7.2-kN/sq. m) pedestrian live load and a maximum deflection of L/150

Gasket around entire perimeter

Hardware:

Material and Finish: Type 316 stainless steel, including latch, handle, lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel counterbalancing spring enclosed in a telescoping tube, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch, with inside lever handle and outside removable square L handle.

Optional Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Safety Accessories: Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>**

* + - 1. FIRE-RATED ALUMINUM FLOOR DOORS
				1. Fire-Rated Aluminum Floor Door. Model BFDF

Manufacturers' offerings for loading capacity and fire rating vary by size; confirm availability.

Clear Unobstructed Opening Size: **<Insert dimensions>**

Door: Single leaf; 1/4-inch-thick (6.4-mm-thick) aluminum diamond tread plate with **[3 layers of Nutec SMG-HI; 2 hour fire rating] [4 layers of Nutec SMG-HI; 3 hour fire rating].**

Loading Capacity:

Units less than or equal to 48 inches by 60 inches (122 cm by 152 cm) width by length: 250-lbf/sq. ft. (11.97-kN/sq. m)live load and maximum deflection of L/150.

Units greater than 48 inches by 60 inches (122 cm by 152 cm) width by length: 150-lbf/sq. ft. (7.2-kN/sq. m) live load and a maximum deflection of L/150

Fire Rating:

Units 24 inches by 24 inches (61 cm by 61cm) up to 52 inches by 96 inches (122 cm by 244 cm) width by length maintains a 2 hourfire ratingfor floor/ceiling assembly as tested and labeled by Warnock Hersey according to NFPA 28

Units 24 inches by 24 inches (61 cm by 61cm) up to 48 inches by 60 inches (132 cm by 153 cm) width by length maintains a 3 hourfire ratingfor floor/ceiling assembly as tested and labeled by Warnock Hersey according to NFPA 28

Hardware:

Material and Finish: Type 316 stainless steel, including lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners. Zinc plated steel fasteners and latch.

Hinges: 3 inch by 3 inch (76 mm by 76 mm) type 3/16 heavy-duty butt hinge with stainless-steel pin fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel counterbalancing heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle that allows for one-handed closure, and recessed lift handle.

Latch: Zinc plated steel slam latch with internal release handle and outside removable square L handle.

Anchor 4 inch (102 mm) concrete anchor straps provided

Options:

Self-Closing Mechanism; Automatically closes door at 165 deg F (74 deg C) in event of fire.

Locks: **[Recessed padlock hasp with cover] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below]**

* + - * 1. Fire-Rated Aluminum Floor Door with 1/8th Inch Recessed Cover

**Manufacturers' offerings for loading capacity and fire rating vary by size; confirm availability.**

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: 1/4 inch (6.4 mm) mill finish aluminum recessed for 1/8 inch (3.2 mm) flooring infill. **[Frame with 3/8 inch (9.5 mm) holes for bolt in] [Frame with integral masonry anchors for cast-in-place].**

Door: Single leaf; 1/4-inch-thick (6.4-mm-thick) aluminum plate. **[3 layers of Nutec SMG-HI Blank; 2 hour fire rating] [4 layers of Nutec SMG-HI; 3 hour fire rating].**

Loading Capacity:

Units less than or equal to 48 inches by 60 inches (122 cm by 152 cm) width by length: 250-lbf/sq. ft. (11.97-kN/sq. m)live load and maximum deflection of L/150.

Units greater than 48 inches by 60 inches (122 cm by 152 cm) width by length: 150-lbf/sq. ft. (7.2-kN/sq. m) live load and a maximum deflection of L/150

Fire Rating:

Units 24 inches by 24 inches (61 cm by 61cm) up to 52 inches by 96 inches (122 cm by 244 cm) width by length maintains a 2 hourfire ratingfor floor/ceiling assembly as tested and labeled by Warnock Hersey according to NFPA 28

Units 24 inches by 24 inches (61 cm by 61cm) up to 48 inches by 60 inches (132 cm by 153 cm) width by length maintains a 3 hourfire ratingfor floor/ceiling assembly as tested and labeled by Warnock Hersey according to NFPA 28

Hardware:

Material and Finish: Type 316 stainless steel, including lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners. Zinc plated steel fasteners and latch.

Hinges: 3 inch by 3 inch (76 mm by 76 mm) type 3/16 heavy-duty butt hinge with stainless-steel pin fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with grip that allows for one-handed closure, and recessed lift handle.

Latch: Zinc plated steel slam latch with release handle and outside removable square L handle.

Options:

Self-Closing Mechanism; Automatically closes door at 165 deg F (74 deg C) in event of fire.

Locks: **[Recessed padlock hasp with cover] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below]**

* + - * 1. Fire-Rated Aluminum Floor Door with 1 Inch Recessed Cover: Allows for flooring infill.

**Maximum size for Fire-Rated Aluminum Floor door with 1 inch recess is 48 by 48 inches**

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: 1/4 inch (6.4 mm) mill finish aluminum recessed for 1/8 inch (3.2 mm) flooring infill. **[Frame with 3/8 inch (9.5 mm) holes for bolt in] [Frame with integral masonry anchors for cast-in-place].**

Door: Single leaf; 1/4-inch-thick (6.4-mm-thick) aluminum plate with 3 layers of Nutec SMG-HI Blanket

Loading capacity: 250-lbf/sq. ft. (11.97-kN/sq. m) live load and maximum deflection of L/150.

Fire Rating: Maintains a 2-hour fire rating for floor/ceiling assembly as tested and labeled by Warnock Hersey according to NFPA 288.

Hardware:

Material and Finish: Type 316 stainless steel, including latch and lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: 3 inch by 3 inch (76 mm by 76 mm) type 3/16 heavy-duty butt hinge with stainless-steel pin fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with grip that allows for one-handed closure, and recessed lift handle.

Latch: Zinc plated steel slam latch with internal pull release cable and outside removable square L handle.

Option: Self-Closing Mechanism: Automatically closes door at 165 deg F (74 deg C) in event of fire.

* + - 1. STEEL FLOOR DOORS
				1. Gutter Channel Frame (Drainable) Steel Floor Door: Drainable Floor door for use in exterior applications or where water penetration is a concern. Model BFDD

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Prime-painted steel, gutter profile, with integral drainage coupling.

Door: **[Single] [Double]** leaf; 3/16-inch-thick (4.8-mm-thick), diamond pattern, **[gray primer][SlipNOT®].**

Loading Capacity: **[300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum deflection of L/150; Model BFDDPS] [AASHTO H20 concentrated wheel load; Model BFDDHS].**

Hardware:

Material and Finish: Type 316 stainless steel, including latch, lifting mechanism assemblies, hold-open Hinges: Heavy-duty butt hinges with stainless-steel pins.

Operating Mechanism: Adjustable enclosed Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle.

Anchor: 4 inch (102 mm) concrete anchor straps provided.

Bumper Gasket: Rubber, around entire perimeter.

Revise "Lock" Subparagraph below for other options available; common types are listed.

Options

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Gasket: EPDM

Safety Accessories:

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two steel nut rails.

 Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Angle Frame Existing Opening Steel Floor Door: Model BFDE

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Prime-painted steel, angle profile.

Door: [**Single**] [**Double**] leaf; 1/4-inch-thick (6.4-mm-thick), diamond pattern; **[gray primer] [SlipNOT®]** steel plate.

Manufacturers' offerings for loading capacity vary; confirm availability. See the Evaluations for discussion of AASHTO H20.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum span deflection of L/150; Model BFDEPP.

Hardware

Material and Finish: Type 316 stainless steel, including latch, lifting mechanism assemblies, hold-open arms, brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts

Operating Mechanism: Adjustable Type 17-7 stainless steel enclosed counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle

Options:

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>**

Gasket: EPDM

Safety Accessories:

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two steel nut rails.

 Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Recessed Cover Steel Floor Door: Allows for flooring infill. Model BFDRPP

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: Steel, angle profile.

Door: [**Single**] [**Double**] leaf; 3/16-inch-thick (4.8-mm-thick), smooth plate;**[gray primer] [SlipNOT®]** steel plate.

Manufacturers' offerings for loading capacity vary; confirm availability. See the Evaluations for discussion of AASHTO H20.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum deflection of L/150; Model BFDRPP.

Hardware:

Material and Finish: Type 316 stainless steel, including latch, lifting mechanism assemblies, hold-open arms, brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 Stainless steel counterbalancing spring enclosed in a telescoping tube, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure and recessed lift handle.

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle.

Optional Lock: **[Keyed deadbolt lock] [Keyed deadbolt lock with threaded protection plug] [Hasp and staple] <Insert lock type>.**

Safety Accessories: Safety **[grate] [chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - 1. STAINLESS-STEEL FLOOR DOORS
				1. Gutter Channel Frame Stainless-Steel Floor Door: Drainable Floor door for use in exterior applications or where water penetration is a concern. Models **[BFDDPV – Pedestrian Load Steel] [BFDDHV - AASHTO H20 concentrated wheel load]**

Clear Unobstructed Opening Size: <**Insert dimensions**>

Frame: [**Type 304**] [**Type 316**] stainless steel, gutter profile, with integral drainage coupling.

Generally, retain same material for door in "Door" Subparagraph below as retained in "Frame" Subparagraph above. Some manufacturers offer different materials for doors and frames. Verify availability of thicknesses with manufacturers. Retain “Type 316" option in "Frame" and "Door" subparagraphs below for more corrosion resistance.

Door: **[Single] [Double]** leaf; 3/16-inch-thick (4.8-mm-thick) diamond pattern bead blasted. **[Type 304] [Type 316]** stainless-steel plate.

Loading Capacity: **[300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum deflection of L/150; Model BFDDPV] [AASHTO H20 concentrated wheel load; Model BFDDPH]**

Hardware:

Material and Finish: Type 316 stainless steel, including latch, lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable enclosed Type 17-7 stainless steel counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle.

Revise "Lock" Subparagraph below for other options available; common types are listed.

Options

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>.**

Gasket: EPDM

Safety Accessories

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two stainless steel nut rails.

Safety **[chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

* + - * 1. Angle Frame Existing Opening Stainless-Steel Floor Door: Model BFDEPV - Pedestrian Load

Clear Unobstructed Opening Size: <**Insert dimensions**>.

Frame: [**Type 304**] [**Type 316**] stainless steel, angle profile.

Generally, retain same material for door in "Door" Subparagraph below as retained in "Frame" Subparagraph above. Some manufacturers offer different materials for doors and frames. Verify availability of thicknesses with manufacturers. Retain "Type 316" option in "Frame" and "Door" subparagraphs below for more corrosion resistance.

Door: **[Single] [Double]** leaf; 3/16-inch-thick (4.8-mm-thick), diamond pattern, **[Type 304] [Type 316**] stainless-steel plate.

Manufacturers' offerings for loading capacity vary; confirm availability. See the Evaluations for discussion of AASHTO H20.

Loading Capacity: 300-lbf/sq. ft. (14.4-kN/sq. m) pedestrian live load with a maximum deflection of L/150.

Hardware:

Material and Finish: Type 316 stainless steel, including latch, lifting mechanism assemblies, hold-open arms, and brackets, hinges, pins, and fasteners.

Hinges: Heavy-duty butt hinges with stainless-steel pins fastened to door with stainless steel carriage bolts.

Operating Mechanism: Adjustable Type 17-7 stainless steel enclosed counterbalancing spring, heavy-duty hold-open arm that automatically locks door open at 90 degrees, release handle with red vinyl grip that allows for one-handed closure, and recessed lift handle.

Latch: Stainless-steel slam latch with inside lever handle and outside removable square L handle.

Options:

Lock: **[Padlock hasp and staple] [Recessed padlock hasp with cover] [Mortise Cam w/6-Pin IC Core and Key] [Mortise Cam w/ Plastic Core] [Mortise Prep slam latch] [Mortise deadbolt with thumb turn access from above] [Mortise deadbolt with thumb turn access from below] [Detention Lock Prep, 7016 Style] [Detention 7016 Installed] [Detention Lock Prep, 1080 Style] <Insert lock type>.**

Gasket: EPDM

Safety Accessories:

Safety Grating System: 6 inch (152 mm) by 1-1/2 inch (38.1 mm) safety orange, powder coated, serrated, aluminum panels, 6 inch (152 mm) view area on at least one lateral unhinged side for visual observation. 316 SST hinges and positive latching in both open and closed positions. Padlock hasp for owner supplied lock capable of locking in both open and closed positions and not impede clear opening. 300-lbf/sq. ft. (14.4-kN/sq. m) load capacity with two stainless steel nut rails.

Safety **[grate] [chains] [net] [railing] [telescoping safety post] <Insert safety device>.**

1. EXECUTION
	* + 1. EXAMINATION
				1. Verify that preparation and affected dimensions are acceptable.
				2. Verify tolerances and correct improper conditions.
			2. PREPARATION
				1. Advise installers of details relating to floor hatch installation, including rough opening dimensions, locations of supports, and anchoring methods.
			3. INSTALLATION
				1. Follow manufacturer’s instructions for installing floor doors and hatches.
				2. Install frames plumb and level in opening, in proper alignment with floor surface for flush installation. Secure rigidly in place.
				3. Position units to provide convenient access to concealed Work requiring access.
			4. ADJUSTING
				1. Operational Units: Test-operate units with operable components.
				2. Clean and lubricate joints and hardware.
				3. Adjust for proper operation.
			5. CLEANing
				1. Clean adjacent surfaces and remove unused product and debris from site.
				2. Adjust doors for smooth operation.

END OF SECTION