

This section includes AMBICO Flood Resistant Steel Door & Frame Assemblies. This section includes proprietary, descriptive and performance specification requirements. Edit to avoid conflicting requirements.

Part 1 General

1.1 SECTION INCLUDES

1. [Non-fire rated] [Fire rated] flood resistant pressed steel frames.
2. [Non-fire rated] [Fire rated] flood resistant steel doors [and panels].
3. Manufacturer-supplied perimeter seals, thresholds, hinges and latching devices integral to the performance of the flood resistant assembly.

1.2 RELATED SECTIONS

1. Section [_____–_____]: Masonry mortar fill of metal frames.
2. Section 05 50 00 – Metal Fabrications: Steel door sub-frame.
3. Section 07 92 00 – Joint Sealing: Caulking between frames and adjacent construction.
4. Section 08 71 10 – Door Hardware - General.
5. Section 09 91 00 – Painting: Field painting of [doors] [frames] [doors and frames].

1.3 REFERENCES

1. AISC 325 – Steel Construction Manual.
2. AISI S100 – North American Specification for the Design of Cold-Formed Steel Structural Members.
3. ASTM A653 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM A276 – Standard Specification for Stainless Steel Bars and Shapes.
5. ASTM A36 – Standard Specification for Carbon Structural Steel
6. ASTM A240 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
7. ASTM A276 – Standard Specification for Stainless Steel Bars and Shapes.
8. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
9. CSDMA – Guide Specification for Installation and Storage of Steel Doors and Frames.
10. CSDMA – Recommended Dimensional Standards for Steel Doors and Frames.

11. HMMA 840 – Installation and Storage of Hollow Metal Doors and Frames.
12. HMMA 841 – Tolerances and Clearances for Commercial Hollow Metal Doors and Frames.
13. NFPA 80-16 - Standard for Fire Doors and Other Opening Protectives.
14. UL 10C-16 - Standard for Positive Pressure Fire Tests of Door Assemblies.

1.4 PERFORMANCE REQUIREMENTS.

1. Structural Performance:
 1. Flood doors to resist hydrostatic loads only. All hydrostatic and operating loads shall be transferred to the adjacent building structure.
 2. The hydrostatic pressure resistance shall be [12][24][36] inches [[30][60][90] centimeters] of water.
2. Fire Performance:
 1. Conform to [NFPA 80] [UL 10C] [_____] for fire rated class [as scheduled] [as indicated].

1.5 SUBMITTALS

1. Section [01 33 00]: Submission procedures.
2. Product Data: Provide product data on door construction and [_____].
3. Shop Drawings: Indicate flood resistant door and frame elevations, internal reinforcement, anchor types, closure methods, [finishes], and location of cut-outs for hardware.
4. Test Data: Submit structural analysis from a licensed Engineer verifying the flood door and frame assembly's hydrostatic pressure resistance. Structural analysis shall consider the door, frame, hardware (where applicable), and frame anchorage to the substrate.

Include the following ONLY if specifying for a LEED project. Specify only the technical requirements necessary to achieve the credits desired for this project. AMBICO Flood Resistant products offer significant advantages to firms interested in supporting LEED certification.

5. Sustainable Design:
 1. Section 01 35 18: LEED documentation procedures.
 2. Provide required LEED documentation for product.
 3. Submit Type 3 Environmental Product Declaration (EPD) for products of this Section.
 4. Manufacturer's Certificate: Certify that Products meet or exceed [specified requirements].

1.6 QUALITY ASSURANCE

1. Manufacturer: Minimum 5 years documented experience manufacturing flood resistant door and frame assemblies.

2. Provide products of this section from a single manufacturer, unless components are referenced specifically in other sections.
3. Pre-installation Meeting: Convene a pre-installation meeting [2] [_____] weeks before start of installation of flood resistant door and frame assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

1.7 DELIVERY, STORAGE AND PROTECTION

1. Section [01 61 00]: Transport, handle, store, and protect products.
2. Comply with [CSDMA] [HMMA] standards.
3. Weld minimum two temporary jamb spreaders per frame prior to shipment.
4. Remove doors, frames and hardware from wrappings or coverings upon receipt on site and inspect for damage.
5. Store in vertical position, spaced with blocking to permit air circulation between components.
6. Store materials out of water and covered to protect from damage.
7. Clean and touch up scratches caused by shipping or handling with zinc-rich primer.

1.8 WARRANTY

1. Manufacturer's Limited Warranty: Five (5) years from date of supply, covering material and workmanship.

2. Products

2.1 MANUFACTURERS

1. AMBICO Limited
1120 Cummings Avenue
Ottawa, Ontario, Canada K1J 7R8
Toll Free Phone 888-423-2224
Phone 613-746-4663
Toll Free Fax 800-465-8561
Fax 613-746-4721
2. Other Acceptable Manufacturers:
 1. [_____].
 2. [_____].
3. Substitutions: [Refer to Section 016000.] [Not permitted.]

2.2. MATERIALS

1. Sheet Steel: Galvanized [stainless] steel to ASTM A653 [ASTM A240]
 1. Coating designation [ZF75] [A25] [Z275] [G90] for galvanized door and frame assemblies.
 2. Type [304] [316] for stainless steel door and frame assemblies.
2. End channels and reinforcements: To ASTM A653 coating designation [ZF75] [A25] [Z275] [G90] for galvanized steel product or type [304] [316] ASTM A240 for stainless steel product.
3. Structural Reinforcing: ASTM A36 for galvanized product or type [304] [316] ASTM A276 for stainless steel product.
4. Door Core:
 1. Stiffened with formed steel sections, 0.059 in. (1.5 mm) minimum thickness, spaced with interior webs not more than 6 in. (152 mm) apart, which upon assembly, span the full thickness of the interior of the door. Structural reinforced to meet flood performance
 2. Non-Fire Rated Doors: Voids between stiffeners filled with rigid, extruded, closed cell polystyrene, 1 pound per cubic foot (16 kg per cubic meter) density minimum, conforming to ASTM C 578, Type 1.
 3. Fire Rated Doors: Voids between stiffeners shall be filled with fiberglass or mineral rock-wool batt-type material.
5. [Primer: Rust inhibitive zinc rich.]

Include the following if this project requires LEED accreditation based on minimum recycled content.

6. Recycled Content: Minimum [___] %

1.9 ACCESSORIES

AMBICO Flood Resistant Steel Door and Frame Assemblies are supplied with heavy weight hinges, locksets, perimeter, and bottom seals as an integral part of a tested assembly. All other accessories specified in this section shall be supplied by the door manufacturer.

1. Hinges: Heavy weight butt type to be supplied loose by the flood resistant door and frame manufacturer.
2. Primer: Galvanized product to be fully primed with rust inhibitive zinc rich primer. Stainless steel product to be [unfinished] [fully primed with rust inhibitive zinc rich primer].
3. Threshold and perimeter seals to be supplied loose by the door and frame manufacturer.
4. Door hardware: [Mortise lock] [Exit device] to be supplied [and installed] by the door and frame manufacturer.
5. Balance of door hardware to be supplied by Section 08 71 10.

2.3. FABRICATION

1. Steel doors, swing type:
 1. Sheet steel faces, door thickness, and core suitable to achieve specified hydrostatic pressure resistance.
 2. Steel construction, longitudinal edges [mechanically inter-locked] [welded, filled and sanded] with [no] visible edge seams.
 3. Top and bottom channels: Flush, welded steel channels.
 4. Astragals: Steel astragals for double doors suitable to achieve specified hydrostatic pressure resistance.
 5. Weld hardware reinforcements in place.
2. Steel frames: swing type
 1. Sheet steel suitable to achieve specified hydrostatic pressure resistance with fully welded mitered corners.
 2. Mullions for double doors: [Fixed] [Removable] type.
3. Hinges to be supplied loose by the door and frame manufacturer.
4. Latching devices to be supplied [and installed] by the door and frame manufacturer.
5. Sealing requirements: Flood resistant door and frame assembly shall be provided with seals that limit water leakage.
6. Affix labels to door and frame indicating manufacturer's name and performance rating.

3. Execution

3.1. INSTALLATION

1. Install doors, frames, and hardware in accordance with manufacturer's written instructions, [CSDMA] [HMMA 840] standards[, and in accordance with [NFPA 80] [UL 10C], and local authority having jurisdiction].
2. Coordinate with [masonry] [concrete] [_____] wall construction for anchor type and placement.
3. Utilize welders certified by [Canadian Welding Bureau (CWB)] [American Welding Society (AWS)] for field welding.
4. Set frames plumb, square, level and at correct elevation.
5. Allow for deflection to ensure that structural loads are not transmitted to frame.
6. Adjust operable parts for correct clearances and function.
7. [Finish paint in accordance with Section 09 91 00].

3.2. ERECTION TOLERANCES

1. Section 01 73 00: Tolerances.

2. Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than $\pm 1/16$ in (1.5mm) in compliance with [CSDMA] [HMMA] standards.

3.3. FIELD QUALITY CONTROL

1. Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of door, frame and hardware assemblies.
2. Provide manufacturer's representative to inspect door installation, and test minimum five (5) cycles of operation. Correct any deficient parts of the assembly.

END OF SECTION