

SECTION 08410 ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 – GENERAL

1.01 Summary

A. Section Includes: CMI Architectural Products, Inc. Aluminum Entrances, glass and glazing, and door hardware and components.

1. Types of CMI Aluminum Entrances include:

- a. Thermalclad 200 Door; Narrow stile, 2-1/8" vertical face dimension, 2" depth, moderate traffic applications.
- b. Thermalclad 351 Door; Medium stile, 3 5/16" vertical face dimension, 2" depth, high traffic applications.
- c. Thermalclad 452 Door; Wide stile, 4 1/2" vertical face dimension, 2" depth, high traffic applications.

B. Related Sections:

1. Section 08410 – Aluminum Storefronts
2. Section 08520 – Aluminum Windows
3. Section 08700 – Finish Hardware
4. Section 08900 – Curtain Wall Systems

1.02 References (Industry Standards)

1.03 System Description

A. Entrance Performance Requirements:

1. Air Infiltration: For single acting offset pivot or butt hung entrances in the closed and locked position, the test specimen shall be tested in accordance with ASTM E 283 at a pressure differential of 6.24 psf for single doors and 1.567 psf for pair of doors. A single 3'0" x 7'0" entrance door and frame shall not exceed 0.50 cfm per linear foot of perimeter crack. A pair of 6'0" x 7'0" entrance doors and frame shall not exceed 1.0 cfm per linear foot of perimeter crack.
2. Thermal Performance: Test entrance shall consist of a single 3'0" x 7'0" Thermalclad 351 door glazed with 1" thick insulated glass.
 - a. Thermal Transmittance Coefficient (U-factor): When tested to AAMA Specification 1503.98, the conductive thermal transmittance (U-factor) shall not be more than 0.61 BTU/hr/sf/°F.
 - b. Condensation Resistance Factor (CRF): When tested to AAMA Specification 1503.98, the condensation resistance factor shall not be less than 42.

1.04 Submittals

A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."

B. Quality Assurance/Control Submittals:

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics.

1.05 Warranty

A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.

B. Manufacturer's Product Warranty: Submit, for Owner's acceptance, manufacturer's warranty for entrance system as follows:

1. Warranty Period: One (1) year from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by CMI. In addition, welded door corner construction shall be supported with a limited lifetime warranty for the life of the door under normal use.

1.06 Quality Assurance

A. Qualifications:

1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.
2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction, approving acceptable installer and approving application method.

B. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.07 Delivery, Storage, and Handling

- A. Ordering: Comply with manufacturer's ordering instructions and lead- time requirements to avoid construction delays.
- B. Packing, Shipping, Handling, and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle entrance doors and components to avoid damage. Protect entrance doors against damage from elements, construction activities, and other hazards before, during and after entrance installation.

PART 2 – PRODUCTS

2.01 Manufacturers (Acceptable Manufacturers/Products)

- A. Acceptable Manufacturers:
 - 1. Address: CMI Architectural Products, Inc.
608 4th Street SE
DeSmet, SD 57231
 - a. Telephone: (605) 854-3326
 - b. Fax: (605) 854-3620
 - 2. Product: CMI Architectural Products, Inc. Aluminum Entrances.
 - a. Series: Thermalclad 200, 351 or 452 Doors
 - b. Finish/Color: (See 2.06 Finishes)
- C. Substitutions:
 - 1. General: Refer to Division 1 Substitutions for procedures and submission requirements.
 - a. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
 - b. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid entrance installation and construction delays.
 - 2. Substitution Documentation:
 - a. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
 - b. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for entrance system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum entrances for a period of not less than ten (10) years.
 - c. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.
 - d. Product Sample and Finish: Submit product sample, with specified finish and color.
 - 3. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

2.02 Materials

- A. Aluminum (Entrances and Components):
 - 1. Material Standard: ASTM B 221; 6063-T5 alloy and temper.
 - 2. The door stile and rail face dimensions of the Thermalclad [] (choose one: 200 or 351 or 452) entrance door will be as follows:

Door	Vertical Stile	Top Rail	Bottom Rail
200	2 1/8"	2 7/8"	3 5/16" / 6" / 10"
351	3 5/16"	3 5/16"	6" / 10"
452	4 1/2"	4 1/2"	6" / 10"
 - 3. Major portions of the door members to be 0.125" nominal in thickness and glazing molding to be 0.05" thick.
 - 4. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of entrance members are nominal and in compliance with Aluminum Standards and Data, published by The Aluminum Association.
- B. Glazing gaskets shall be EPDM elastomeric extrusions.
- C. Thermal separators for door cladding shall be rigid polyvinylchloride (PVC) extrusions.

2.03 Accessories

- A. Fasteners: Where exposed, shall be aluminum, stainless steel or plated steel.
- B. Perimeter Anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

C. Entrance Hardware.

1. Weatherstripping:

- a. Meeting stiles on pairs of doors shall be equipped with an adjustable astragal utilizing 2 rows of wool pile.

2. Sill Sweep Strips: EPDM blade gasket sweep strip in an aluminum extrusion applied to the exterior exposed surface of the bottom rail.

3. Threshold: Extruded aluminum, one piece per door opening, with ribbed surface.

4. Offset Pivots: [_____].

5. Butt Hinge: [_____].

6. Push/Pull: [_____] style.

7. Panic Device: [_____].

8. Closer: [_____].

9. Security Lock/Dead Lock: Active Leaf [_____]; Inactive Leaf [_____].

10. Latch Handle: [_____].

11. Cylinder(s)/Thumbturn: [_____].

2.04 Related Materials

A. Sealants: Refer to Joint Treatment (Sealants) Section.

B. Glass: Refer to Glass and Glazing Section.

2.05 Fabrication

A. Entrance System Fabrication:

1. Door corner construction shall consist of a heavy extruded aluminum block, fastener applied and structurally welded at all four corners. Doors shall be prepared for hardware by the use of CNC milling equipment for accuracy and consistent fit. Glass stops shall be square cut and pre-fit into the opening.
2. Exposed portions of door cladding moldings shall be 3/32" thick.
3. PVC separators shall be applied to the interior side of door structure with screws spaced not more than 6" on centers. Aluminum cladding shall be interlocked with PVC separators at both edges and mechanically secured to door without adhesives. There shall be no metal to metal contact, direct or indirect, between the cladding or the cladding attachments and the door structure.
4. Accurately fit and secure joints and corners. Make joints hairline in appearance.
5. Prepare components with internal reinforcement for door hardware.
6. Arrange fasteners and attachments to conceal from view.

2.06 Finishes

A. Factory Finishing:

1. AA-M12C22A44, AAMA 611, Architectural Class I Color Anodic Coating (Color _____).
2. AA-M12C22A41, AAMA 611, Architectural Class I Clear Anodic Coating (Color #21 Clear) (Optional).
3. AA-M12C22A31, AAMA 611, Architectural Class II Clear Anodic Coating (Color #20 Clear) (Standard).
4. Fluropon® (70% PVDF), AAMA 2605, Fluoropolymer Coating (Color _____).
5. Acroflur™ (50% PVDF), AAMA 2604, Fluoropolymer Coating (Color _____).
6. Duranar®, Duranar XL® (70% PVDF), AAMA 2605, Fluoropolymer Coating (Color _____).
7. Other: Manufacturer _____ Type _____ (Color _____).

2.07 Source Quality Control

A. Source Quality: Provide aluminum entrances specified herein from a single source.

1. Building Enclosure System: When aluminum entrances are part of a building enclosure system, including entrances, framing, windows, curtain wall system and related products, provide building enclosure system products from a single source manufacturer.

B. Fabrication Tolerances: Fabricate aluminum entrances in accordance with entrance manufacturer's prescribed tolerances.

PART 3 – EXECUTION

3.01 Examination

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive entrance system and sill is level in accordance with manufacturer's acceptable tolerances.

1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

3.02 Installation

- A. General: Install entrance system in accordance with manufacturer's instructions and AAMA storefront and entrance guide specifications manual.
1. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
 2. Provide alignment attachments and shims to permanently fasten system to building structure.
 3. Align assembly plumb and level, free of warp and twist. Maintain assembly dimensional tolerances aligning with adjacent work.
 4. Set thresholds in bed of mastic and secure.
 5. Adjusting: Adjust operating hardware for smooth operation.
- B. Related Products Installation Requirements:
1. Sealants (Perimeter): Refer to Section 7 Joint Treatment (Sealants).
 2. Glass: Refer to Section 8 Glass and Glazing.
 - a. Reference: ANSI Z97.1, CPSC 16 CFR 1201 and GANA Glazing Manual.

3.03 Cleaning and Protection

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.
- B. Protection: Protect installed product's finish surfaces from damage during construction. Protect aluminum entrances from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants. Remove and replace damaged aluminum entrances at no extra cost.

END OF SECTION 08410

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