

SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Exterior aluminum-framed storefront system, thermally broken, at Level 1 retail bays and leasing office.
 - 2. Aluminum-framed swing entrance doors, hardware, and thresholds.
 - 3. Impact-resistant laminated insulating glass, factory or shop glazed.
- B. Related Sections:
 - 1. Section 07 92 00 "Joint Sealants" for perimeter sealants.
 - 2. Section 08 71 00 "Door Hardware" for cylinders and keying.
 - 3. Section 08 80 00 "Glazing" for glass not included in this Section.

1.2 REFERENCES

- A. Florida Building Code (FBC), 8th Edition (2023), Building, including High-Velocity Hurricane Zone provisions where applicable.
- B. ASCE 7-22, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- C. ASTM E1886 / E1996, impact and cyclic pressure testing of exterior windows, curtain walls, doors and impact protective systems.
- D. ASTM E283 (air leakage), ASTM E331 (water penetration), ASTM E330 (structural performance).
- E. AAMA 501.2, field check of water penetration through installed storefront.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Contractor shall engage a qualified professional engineer, licensed in the State of Florida, to design storefront framing, anchorage, and glazing to resist the loads indicated.
- B. Wind Loads: Design for component and cladding pressures determined per ASCE 7-22 and the following basis:
 - 1. Ultimate design wind speed (V_{ult}): 145 mph, Risk Category II, Exposure C.
 - 2. Design pressures, minimum (refer to Structural sheet S-001, Wind Load Schedule):
 - a. Zone 4 (field of wall): +38.5 psf / -41.8 psf.
 - b. Zone 5 (within 6 ft of building corners): +38.5 psf / -51.6 psf.
 - 3. Systems shall be tested to a design pressure equal to or exceeding the most stringent zone in which they occur.
- C. Impact Resistance: Storefront and entrances shall pass Large Missile impact (ASTM E1996, Missile Level D) and cyclic pressure testing (ASTM E1886). Shutters are not an acceptable alternative.
- D. Deflection: Limit framing deflection normal to the wall plane to L/175 or 3/4 inch, whichever is less.
- E. Air Infiltration: Maximum 0.06 cfm/sq. ft. at 6.24 psf per ASTM E283.
- F. Water Penetration: No uncontrolled water penetration at 12 psf per ASTM E331.
- G. Thermal Performance: Maximum assembly U-factor 0.45; SHGC 0.25 maximum, per Florida Energy Conservation Code.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including manufacturer's construction details, material descriptions, dimensions, profiles, finishes, and tested performance values.
- B. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work. Indicate:
 - 1. Mullion sizes, reinforcing, and anchor types and spacing.
 - 2. Design pressure for each elevation and wind zone, matched to the tested product.
 - 3. Glass types and thicknesses at each opening.

- 4. Locations of perimeter sealant, flashing, and sill pans.
- C. Delegated-Design Submittal: Structural calculations, signed and sealed by the Florida-licensed engineer responsible for their preparation.
- D. Samples: For each exposed finish, 2 samples minimum 6 inches long.
- E. Glazing Schedule: Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Florida Product Approval (FL#) or Miami-Dade County Notice of Acceptance (NOA) for each storefront and entrance system, with design pressures meeting or exceeding Article 1.3.
- B. Product Test Reports: From a qualified testing agency, for impact, cyclic, air, water, and structural tests.
- C. Qualification Data: For Installer and delegated-design engineer.
- D. Sample Warranty.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to the manufacturer with a minimum of 5 years' experience installing impact-rated storefront systems of similar size in Florida.
- B. Mockup: Build one full bay mockup at Retail Bay 1, including perimeter sealant and sill pan, for Architect's review before proceeding. Approved mockup may remain as part of the Work.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components that fail in materials or workmanship within 10 years from date of Substantial Completion.
- B. Finish Warranty: 20 years for anodized finishes against chalking, cracking, peeling, or color change.
- C. Installer's Warranty: 2 years against water leakage and installation defects.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer Company, Inc.; Trifab 451UT impact storefront, or comparable product by one of the following:
 - 1. YKK AP America Inc.
 - 2. Tubelite Inc.
 - 3. Oldcastle BuildingEnvelope.
- B. Substitutions: Submit per Section 01 25 00 "Substitution Procedures." Substitutions shall include Florida Product Approval meeting Article 1.3.

2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish; ASTM B221 extrusions, minimum 0.125 inch wall thickness at framing members.
- B. Thermal Break: Poured-and-debridged or polyamide strut type, tested per AAMA 505.
- C. Steel Reinforcement: Where required by delegated design, ASTM A36, hot-dip galvanized.
- D. Fasteners and Anchors: Stainless steel, Series 300; size and spacing per delegated design.

2.3 GLAZING

- A. Impact-Resistant Insulating Laminated Glass (Type GL-1):
 - 1. Outboard lite: 1/4 inch heat-strengthened, low-E coating on No. 2 surface.
 - 2. Air space: 1/2 inch, argon filled, warm-edge spacer.
 - 3. Inboard lite: 9/16 inch laminated (two 1/4 inch heat-strengthened with 0.090 inch ionoplast interlayer).
- B. Safety Glazing: All lites in doors and hazardous locations shall comply with FBC Section 2406.

2.4 ENTRANCE DOORS

- A. Type: Medium stile, 3-1/2 inch vertical stiles, 10 inch bottom rail, impact rated as part of tested assembly.

- B. Hardware: Continuous gear hinges, push/pull, mortise deadlock, ADA-compliant threshold. Coordinate with Section 08 71 00.

2.5 FINISHES

- A. Class I Anodic Finish: AAMA 611, AA-M12C22A41, clear anodized, minimum 0.7 mil thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, and conditions for compliance with requirements for installation tolerances, rough opening dimensions, and anchorage. Proceed only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install per manufacturer's instructions, approved Shop Drawings, and the Florida Product Approval installation instructions.
- B. Install sill pan flashing with end dams before setting framing.
- C. Set units plumb, level, and true to line, without warp or rack, within 1/8 inch in 10 feet.
- D. Anchor securely to structure using anchors and spacing shown on sealed delegated-design drawings.

3.3 FIELD QUALITY CONTROL

- A. Water Testing: Test installed storefront per AAMA 501.2 at three locations selected by Architect. Repair and retest failed areas at no cost to Owner.
- B. Building Department Inspection: Coordinate required inspections for impact-rated openings before interior finishes conceal anchors.

3.4 PROTECTION AND CLEANING

- A. Protect installed products from damage during construction. Clean glass and framing within 10 days of Substantial Completion.

END OF SECTION 08 41 13

MOCK SPECIFICATION — TRAINING EXERCISE. Fictitious project; requirements are illustrative and not for construction. Design pressures and code references are representative only.