

SECTION 084313 ALUMINUM-FRAMED INTERIOR STOREFRONT

PART 1 GENERAL

1.01 SUMMARY

- A. Section aluminum interior storefront framing and all components and installation accessories supplied with the system.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Pre-installation Meeting:
 - a. Attendees: Owner's Representative, Architect, General Contractor, Structural Engineer, Mechanical Engineer, Consultants, Interior Aluminum Framing Installer and Manufacturer's Representative, structural support installers, and installers whose work interfaces with storefront and glazing.
- 2. Agenda:
 - a. Review and finalize construction schedule.
 - b. Review code and project performance compliance documentation and testing requirements.
 - c. Review product specific mockups and field testing requirements.
 - d. Verify availability of materials, installer's personnel, equipment, and facilities required to maintain schedule.
 - e. Review means and methods related to installation, including manufacturer's written instructions.
 - f. Examine support conditions for compliance with requirements including alignment and attachment to structural members.
 - g. Review flashings, membrane interface with framing, wall penetrations, openings, and conditions of other construction affecting this Work.
 - h. Review temporary protection requirements for during and after installation of this Work.

1.03 PERFORMANCE REQUIREMENTS

- A. Design Wind Loads
 - 1. Provide interior aluminum framing system with all structural components including but not limited to anchors and mullions based on the following wind load design pressures and the deflection and stress criteria of paragraph 1.04 B. Pressures based on Allowable Stress Design (ASD).
 - a. Design criteria based on local building code.
- B. Structural Performance:
 - 1. Structural Performance at design loads:
 - a. System to withstand project design loads.
 - i. Maximum allowable deflection of $L/175$ of the clear span for spans up to 13'-6" or $L/240$ of clear spans plus $\frac{1}{4}$ " for spans greater than 13'-6" or an amount that restricts edge deflection of individual glazing lites of glass to $\frac{3}{4}$ " whichever is smaller.

2. Structural Performance at 1.5x design loads:
 - a. System to withstand 1.5x design loads.
 - i. There shall be no permanent deformation of main frame members in excess of 0.2% of its clear span, glass breakage, or permanent damage to fasteners or anchors.
 - ii. There shall be no glass breakage, permanent damage to frame members or anchors.
- C. Acoustic Performance:
 1. The system shall have a sound transmission class (STC) and an outdoor-indoor transmission class (OITC) rating when tested per ASTM E90 and ASTM E1332. Coordinate performance with 08 80 00 Glazing.
 - a. 1/2" monolithic: STC 31, OITC 31
 - b. 1/2" laminated: STC 36, OITC 33 (1/4" – 0.060 pvb – 1/4")

1.05 SUBMITTALS

- A. Product Data:
 1. Manufacturer's literature for each specified system.
 2. Components within assembly, including material descriptions, component profiles, finishes, anchorage and fasteners, glazing, and internal drainage.
- B. Shop Drawings:
 1. Shop drawings must be prepared by a qualified engineering service under the employ of the window wall manufacturer.
 2. Include system dimensions, framed opening requirements and tolerances, affected related Work, anchorage, expansion and contraction joint location and details, and field welding required.
 3. Include scaled shop drawings showing detailed relationships with glazing, flashing, internal drainage, joinery, and provisions for thermal expansion.
- C. Design Data: Submit framing member structural and physical characteristics, engineering calculations, and dimensional limitations.
- D. Samples:
 1. System components: Submit corner samples, anchors, fasteners, trim, and other materials as requested by the architect.
 2. Finish: To be selected by Architect from Manufacturer's full range. Submit two aluminum sheet stock samples 2" x 3" for each finish type.
- E. Warranty: Submit manufacturer sample warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with at least twenty years of documented experience.
- B. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State that the Project is located.
- C. Installer: Company approved by manufacturer and specializing in performing work of this section with at least five years of documented installation experience.

- D. Source Limitations: Obtain the interior aluminum framing and all products listed in Section 1.02 from a single manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Materials to be packed, loaded, shipped, unloaded, stored and protected in accordance with AAMA CW-10.
- B. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of interior framing openings by field measurements and indicate measurements on Shop Drawings.
- B. Coordinate installation with other applicable trades.

1.09 WARRANTY

- A. Interior Aluminum Framing Warranty:
 - 1. Manufacturer agrees to repair or replace defective storefront components for a period of 10 years from the date of shipment.
- B. Finish Warranty:
 - 1. Warranty covers factory-applied organic and anodic finishes on exposed extruded aluminum surfaces without standing water accumulation, against peeling, checking, cracking, chalking and change of color, per applicable AAMA specifications.
 - a. Paint Coatings
 - i. AAMA 2605 70% PVDF: 10 years.
 - ii. AAMA 2604 50% PVDF: 10 years.
 - iii. AAMA 2603 Baked Enamel: 1 year (adhesion only)
 - b. Anodized Coatings
 - i. AAMA 611 Class I: 10 years.
 - ii. AAMA 611 Class II: 2 years.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Manufacturer: Subject to compliance with requirements, provide products by one of the following:
 - 1. Tubelite Inc.
 - 2. C.R. Laurence Co., Inc.
 - 3. Kawneer Company, Inc.
- B. Basis of Design: Interior Aluminum Framing
 - 1. Tubelite Inc. INT45 Aluminum Interior Framing: 1 3/4" x 4-1/2" (non-thermal)
 - i. Finish: Clear Anodized
 - ii. Door Hardware: Per University Standards

- iii. Entry Doors: Per 404.2.9 ICC A117.1-2009.

2.02 INTERIOR ALUMINUM FRAMING

- A. Interior Aluminum Framing: Factory or field fabricated, field glazed, factory finished aluminum, screw spline construction with infill and related anchorage and attachment devices.
1. System dimensions primary mullion: 1 3/4" x 5-1/2"
 - i. Exterior face dimensions: 1 3/4"
 - ii. Depth: 4-1/2"
 - b. Channel frames
 - i. Head: 2" x 1-1/4"
 - ii. Sill: 1" x 1-1/4"
 2. Glazing:
 - a. Position: center of system
 - b. Thickness: 1/2"
 3. Construction: screw spline and snap clips

2.03 FINISHES

- A. Finish all exposed areas of aluminum storefront components in accordance with applicable AAMA Voluntary Finish Guide Specification: **Class II – AAMA 611**
- A. Combination anodic oxide and transparent organic coatings as defined in AAMA 612 are not equivalent substitutions for the AAMA 611 anodized finishes shown above due to surface hardness disparities.
- B. Applicator Qualifications: Certified by AAMA and listed on AAMA Verified Components List.
- C. Verify accuracy of components, quantities, and sizes prior to application of finishes.
- D. Applicator – Anodize Finishes
- a. Offer both standard eco-friendly (acid) and optional caustic (traditional) etching technologies.
 - b. Utilize fully automated, computer-controlled process lines for consistency through Project.
 - c. Utilize documented quality control protocol in accordance with AAMA 611 procedures.
 - i. Online quality assurance inspection:
 1. Random sample check for color uniformity, maximum difference of 5AE.
 2. Random coating thickness testing:
 - a. Class I clear and color anodize – 0.7 mils (18 microns)
 - b. Class II clear anodize – 0.4 mils (10 microns)

2.04 MATERIALS

- A. Aluminum extrusions: Alloy 6063-T6 or 6063-T5 in accordance with ASTM B221, and extruded within commercial tolerances and free from defects that impair strength and/or durability.
- B. Primary extruded framing members will be a minimum 0.080" thick.
- C. Glazing material:
1. Setting blocks and Edge Blocking: Provide in sizes and locations and materials as recommended by glass manufacturer.

2. Glazing gaskets shall be EPDM and compatible with all materials in contact.

2.05 FABRICATION

- A. Ensure joints and corners are flush and accurately fitted and secured.
 1. Prepare framework to receive anchors and hardware.
 2. Conceal fasteners and attachments from view.
- B. Fabricate in accordance with manufacturer's instructions.

2.06 COMPONENTS

- A. Glass
 1. Provide in accordance with Section 08 80 00.
- B. Glazing
 1. Glazing method shall be in accordance with manufacturer installation instruction and the GANA Glazing Manual for specified glass type, or as approved by the glass fabricator.
 2. Refer to Section 08 80 00 for requirements.

PART 3 – EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of this Work.
- B. Notify Contractor in writing, with a copy sent to Owner and Architect, of any conditions detrimental to proper and timely completion of this Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Start of this Work shall indicate acceptance of areas and conditions as satisfactory by the Installer.

3.02 INSTALLATION

- A. Install interior aluminum framing in accordance with manufacturer's installation instructions, reviewed product data, approved shop drawings, and as indicated on Drawings (per Professional Engineer review when applicable).
- B. Do not install damaged components.
- C. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- D. Provide alignment attachments and shims to permanently fasten system to building structure.
- E. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, [aligning with adjacent work].
- F. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
- G. Install hardware using templates provided.
 1. Refer to Section 08 71 00 for hardware installation requirements.

- H. Install glass in accordance with Section 08 80 00, using glazing method required to achieve performance criteria.
- I. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.
- J. Tolerances:
 - 1. Maximum variation from plumb: $[1/16"]$ every 3' non-cumulative, or $[1/16"]$ per 10', whichever is least.
 - 2. Maximum Misalignment of two adjoining members abutting in plane: $[1/32"]$.

3.03 CLEANING

- A. Comply with AAMA 609 and 610 for methods, equipment, and materials to clean finished aluminum after installation and for subsequent periodic maintenance.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners, and wipe surfaces clean.
- C. Remove excess sealant from glass and aluminum by method acceptable to sealant and finish manufacturer.

3.04 PROTECTION

- A. Protect installed products from damage during subsequent construction.
- B. Protect anodized finishes from prolonged exposure to alkaline, such as lime in masonry mortar, or acidic and other corrosive materials.

END OF SECTION 08 43 13