failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.

3. Deflection: Maximum allowable deflection in any member when tested in accordance with ASTM E 330-90 with allowable stress in accordance with AA Specifications for Aluminum Structures.
   a. Without Horizontals: L/175 or 3/4 inch (19.1mm) maximum. .

10 psf (479 Pa). Water test to be performed immediately after design pressure test.

3. Structural: Door corner structural strength test using a dual moment loading criteria:
   a. Test results shall be supported by an independent laboratory report as follows: 470 lbs.
4. Structural Uniform Load Test:
   a. Doors

approved installation methods in location designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under the Contract Documents.
1. Beneficiary: Issue warranty in the legal name of the project Owner.
2. Warranty Period: Ten (10) years commencing on Date of Substantial Completion.
3. Warranty Acceptance: Owner is sole authority who will determine acceptability of manufacturer's warranty documents.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
1. YKK AP America, Inc.
2. Kawneer Co., Inc.
3. EFCO Corporation

B. Coordinate with requirements of Division 1 section on product options and substitutions.

C. Substitutions: Or Equal.

D. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 STOREFRONT APPLICATIONS/SCOPE

A. Center set, flush glazed; jambs continuous; head, sill, and jamb attached by screws into rough opening.

B. Center set, flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery. Manufacturer's standard extruded aluminum expansion mullions, 90 degree corner posts, three way corner post, entrance door framing, and indicated shapes.

C. Center set, flush glazed; head and sill members continuous; intermediate horizontals attached

by means of shear block. Jambs and vertical mullions are captured inside the continuous head and sill members and held in place by filler inserts. Manufacturer's standard extruded aluminum expansion mullions, 0 - 15 degree hinged mullions, 90 degree corner posts, entrance door framing, and indicated shapes.

D. Center rabbet, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery. Manufacturer's standard extruded aluminum expansion mullions, 0- 15 degree hinged mullions, 90 degree corner posts, flexible corner posts, three way corner post, 93- 170 degree flexible corner posts, entrance door framing, and indicated shapes.

E. Center set, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery. Manufacturer's standard extruded aluminum mullions, 90 degree corner posts, entrance door framing, and indicated shapes. Provide continuous thermal barrier by means of 6/6 nylon polyamide glass fiber reinforced

stops at the interior.

J. Impact resistant. Center set, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery. Continuous and wept sill flashing. Manufacturer's standard extruded aluminum mullions, entrance doors, framing, and indicated shapes, perimeter anchor fillers and steel reinforcing as required.
   1. Glass for Large Missile Impact at 50 psf:
      a. 1-5/16 inches (33 mm) Solutia Saflex with 0.090 inch (2.3 mm) PVB interlayer (heat strengthened only).
      b. 1-5/16 inches (33 mm) laminated glass with 0.090 inch (2.3 mm) Butacite PVB interlayer (heat strengthened only).
   2. Glass for Large Missile Impact at 70 psf:

strip, wept, and counterflashed.

C. Impact Resistant Doors:
   1. Glass for Large Missile Impact:
      a. 1/4 inch (6 mm) or 3/8 inch (9.5 mm) glass with DuPont SentryGlas Composite laminate.
      b. 9/16 inch (14 mm) DuPont SentryGlas Plus.
      c. 7/16 inch (11 mm) or 9/16 inch (14 mm) Saf-Glas by Security Impact Glass; Annealed, heat strengthened, or tempered as required.

with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.

2. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.
3. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.

B. Door Construction:
1. Corner Construction: Fabricate door corners joined by concealed reinforcement secured with screws, and sigma deep penetration welding.
2. Glazing Stops: Manufacturer's standard snap-in glazing stops with EPDM glazing gaskets to prevent water infiltration.
3. Weatherstripping: Manufacturer's standard pile type in replaceable rabbets for stiles; manufacturer's standard EPDM bulb type in door frames.
4. Hardware: Manufacturer's standard as selected by Architect.

C. Fabrication Tolerances:
1. Material Cuts: Square to 1/32 inch (0.8 mm) off square, maximum, over largest dimension; proportionate amount of
2. 1/32 inch (0.8 mm) on other two dimensions.
3. Maximum Offset: 1/64 inch (0.4 mm) in alignment between two consecutive members in line, end to end.
4. Maximum Offset: 1/64 inch (0.4 mm) between framing members at glazing pocket corners.
5. Joints (Between adjacent members in same assembly): Hairline and square to adjacent member.
6. Variation (In squaring diagonals for doors and fabricated assemblies): 1/16 inch (1.6 mm).
7. Flatness (For doors and fabricated assemblies): +/- 1/16 inch (+/- 1.6 mm) off neutral plane.

1.4 FINISH

A. Anodized Finishing: Prepare aluminum surfaces for specified finish; apply shop finish in accordance with the following:
1. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612-02. Aluminum extrusions shall be produced from quality controlled billets meeting AA-6063-T5.
   a. Exposed Surfaces shall be free of scratches and other serious blemishes.
   b. Extrusions shall be given a caustic etch followed by an anodic oxide treatment and then sealed with an organic coating applied with an electrodepositing process.
   c. The anodized coating shall comply with the requirements of AAMA 612-02: Voluntary Specifications, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum. Testing shall demonstrate the ability of the finish to resist damage from mortar, salt spray, and chemicals commonly found on construction sites, and to resist the loss of color and gloss.
   d. Overall coating thickness for finishes shall be a minimum of 0.7 mils (.018 mm).
2. CASS Corrosion Resistance Test, CASS 240/ASTM B368 Test Method.
3. AAMA 2605 Performance Tests:

a. 7.3 Dry Film Hardness.
b. 7.8.2 Salt Spray Resistance.
c. 7.9.1.2 Color Retention, South Florida.
d. 7.9.1.4 Gloss Retention, South Florida.

B. High Performance Organic Coating Finish:
1. Type Factory applied two-coat 70 percent Kynar resin by Auto Chem or 70 percent Hylar resin by Ausimont, fluoropolymer based coating system, Polyvinylidene Fluoride (PVF-2), applied in accordance with YKK AP procedures and meeting AAMA 2605 specifications.
2. Colors: Selected by Architect from the following:
a. Standard coating color charts.
b. Custom coating color charts.
c. Color Name and Number:

C. Finishes Testing:
1. Apply 0.5 percent solution NaOh, sodium hydroxide, to small area of finished sample area; leave in place for sixty minutes; lightly wipe off NaOh; Do not clean area further.
2. Submit samples with test area noted on each sample.

PART 2 EXECUTION

2.1 EXAMINATION

A. Do not begin installation until openings have been properly prepared.

B. If opening preparation is the responsibility of another installer, notify Architect of unsatisfactory conditions before proceeding.

C. 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.

2.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
1. Protect aluminum members in contact with masonry, steel, concrete, or dissimilar materials using nylon pads or bituminous coating.
2. Shim and brace aluminum system before anchoring to structure.
3. Seal metal to metal sash joints using sealant recommended by system

A. Field Test: Conduct field test to determine water tightness of storefront and entrance system. Conduct test in accordance with AAMA 501.3-94 at locations selected by Architect.