1. Section 084313   
   Aluminum-Framed Storefronts
   1. PART 1  GENERAL
      1. REFERENCE STANDARDS
         1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
         2. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
         3. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
         4. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
      2. SUBMITTALS
         1. See Section 013000 - Administrative Requirements for submittal procedures.
         2. Product Data:  Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
         3. Shop Drawings:  Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
         4. Hardware Schedule:  Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
         5. Specimen warranty.
      3. WARRANTY
         1. See Section 017800 - Closeout Submittals for additional warranty requirements.
         2. Correct defective Work within a five year period after Date of Substantial Completion.
         3. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting.  Include provision for replacement of failed units.
         4. Provide five year manufacturer warranty against excessive degradation of exterior finish.  Include provision for replacement of units with excessive fading, chalking, or flaking.
   2. PART 2  PRODUCTS
      1. MANUFACTURERS
         1. Aluminum-Framed Storefronts:
            1. Kawneer North America​​:  www.kawneer.com/#sle.
            2. Manko Window Systems, Inc​​:  www.mankowindows.com/#sle.
            3. Oldcastle BuildingEnvelope​​:  www.oldcastlebe.com/#sle.
            4. Substitutions:  See Section 016000 - Product Requirements.
      2. ALUMINUM-FRAMED STOREFRONT
         1. Aluminum-Framed Storefront:  Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
            1. Glazing Rabbet:  For 1 inch insulating glazing.
            2. Glazing Position:  Centered (front to back).
            3. Finish:  Superior performing organic coatings.

Factory finish all surfaces that will be exposed in completed assemblies.

Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

* + - * 1. Finish Color:  As selected by Architect from manufacturer's standard line.
        2. Fabrication:  Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
        3. Construction:  Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
        4. System Internal Drainage:  Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
        5. Expansion/Contraction:  Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
        6. Movement:  Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
        7. Perimeter Clearance:  Minimize space between framing members and adjacent construction while allowing expected movement.
      1. Performance Requirements
         1. Wind Loads:  Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.

Member Deflection:  Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.

* + - * 1. Air Leakage:  0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.
    1. COMPONENTS
       1. Aluminum Framing Members:  Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
          1. Glazing Stops:  Flush.
       2. Swing Doors:  Glazed aluminum.
          1. Thickness:  1-3/4 inches.
          2. Top Rail:  4 inches wide.
          3. Vertical Stiles:  4-1/2 inches wide.
          4. Bottom Rail:  10 inches wide.
          5. Glazing Stops:  Square.
          6. Finish:  Same as storefront.
    2. MATERIALS
       1. Extruded Aluminum:  ASTM B221 (ASTM B221M).
       2. Fasteners:  Stainless steel.
       3. Glazing Gaskets:  Type to suit application to achieve weather, moisture, and air infiltration requirements.
    3. HARDWARE
       1. For each door, include weatherstripping, sill sweep strip, and threshold.
       2. Weatherstripping:  Wool pile, continuous and replaceable; provide on all doors.
       3. Sill Sweep Strips:  Resilient seal type, retracting, of neoprene; provide on all doors.
       4. Threshold:  Extruded aluminum, one piece per door opening, ribbed surface; provide on all doors.
       5. Hinges:  Butt type, swing clear; top and bottom.
       6. Exit Devices:  Panic type.
       7. Door Closers:  ​Exposed overhead​.
  1. PART 3  EXECUTION
     1. INSTALLATION
        1. Install wall system in accordance with manufacturer's instructions.
        2. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
        3. Provide alignment attachments and shims to permanently fasten system to building structure.
        4. Align assembly plumb and level, free of warp or twist.  Maintain assembly dimensional tolerances, aligning with adjacent work.
        5. Provide thermal isolation where components penetrate or disrupt building insulation.
        6. Install sill flashings.  Turn up ends and edges; seal to adjacent work to form water tight dam.
        7. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
        8. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
        9. Set thresholds in bed of sealant and  secure.
        10. Install hardware using templates provided.
        11. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.
     2. ADJUSTING
        1. Adjust operating hardware and sash for smooth operation.

1. END OF SECTION

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