PART 1 - GENERAL

1.01 Manufactured aluminum window systems (including curtain walls) inclusive of pre-fabricated anodized aluminum windows and frames, closure members, reinforcement, shims, accessories, anchorage devices and miscellaneous fasteners, concealed and non-concealed, and flashing and trim for weather-tight system.

A. Aluminum windows: Heavy duty standard units. Anodized. Glazing per 08 80 00.

B. Operable heavy-duty latch. Screens.

C. Stationary: One color throughout building.

D. Thermal breaks required.

E. Design compliance:
   1. Infiltration: Maximum 0.025 cfm/foot.
   2. Maximum U value at center of glass of .20 BTU/hr-ft²-F
   3. No condensation on the interior windows or frames at the expected interior temperature and humidity and the outside air temperature at -55 degrees F.

1.02 Quality Assurance:

A. Manufacturer's qualifications: Minimum 5 years manufacturing aluminum windows and frames

   1. Test criteria: Qualified independent agency.
      a. Design wind velocity: Per AHJ as required in the building code or per ASCE 7 “Minimum Design Loads for Buildings and Other Structures.”

   2. Compliance: Per AAMA reference standards for type, grade, and performance class of window units required. Tests for:
      a. Air-infiltration rate, operating units: Maximum 0.37 cfm/foot (2.06 cu. m/h per m) of operable sash joint for inward test pressure of 6.24 lbf/square foot (299 Pa).
      b. Air-infiltration rate, non-operating units: Maximum 0.025 cfm/foot (2.74 cu. m/h per m) of area for inward test pressure of 6.24 lbf/square foot (299 Pa).
      c. Water penetration: None at inward test pressure of 20 percent of design pressure.
      d. Structural performance: No failure or permanent deflection in excess of 0.4 percent of any member's span after removing imposed load, for positive (inward)
and negative (outward) test pressure of 30 lbf/square Foot (1437 Pa).

e. Condensation resistance: "Thermally improved" units, tested for a condensation resistance factor (CRF) of 62.

f. Thermal transmittance: Maximum U-value, 0.20 Btu/square foot x h x deg F at 15-mi./h exterior wind velocity per AAMA test.

g. Forced-entry resistance: Performance level 10 per ASTM.

h. Engineered calculation allowance for thermal movement from maximum temperature change (range) of 170 deg F, ambient.

i. If required, certification for minimum 40 rating, Sound transmission class (STC).

1.03 Warranty:

A. Manufacturer's standard: Ten (10) year warranty against material defects in manufacture including hardware failure of any kind: screws stripping, frames and sashes failing during normal use.


2. Insulated glass: Guaranteed against seal failures causing clouding or fogging of any kind between glass for ten (10) years.

B. Contractor's warranty: Warrant aluminum windows and frames and related flashing, sealants, fasteners, and accessories against defective materials and/or workmanship to remain watertight and weatherproof with normal usage for two (2) years following substantial completion date and to repair or replace without additional cost to the Owner any leaks and resulting damage to other materials and building contents as may occur.

PART 2 - PRODUCTS

2.01 Aluminum windows and frames: Heavy-duty anodized aluminum. Frame and sash members, similar construction, designed for removable triple glazing panel. Turn/tilt (dual action), casement, awning, stationary, or other style per design for project.

A. Aluminum frame, sash, and sill extrusions: Alloy and temper per manufacturer recommendations for strength, corrosion resistance, and application of anodized finish. Minimum 22,000-psi (150-MPa) ultimate tensile strength and 0.062 inch (1.6 mm) thick at main frame and sash members.

B. Removable glazing panel: Minimum triple insulating glass glazing, select quality glass. Similar construction as frame and sash
2.02 Manufacturers

A. Overguard

B. EFCO

C. Kawneer

D. No Substitutions

PART 3 – EXECUTION (NOT USED)

END OF SECTION