

## SECTION 084413 - GLAZED ALUMINUM CURTAIN WALLS

### 1.1 PRECONSTRUCTION LABORATORY MOCKUPS

- A. Preconstruction Testing Service: Contractor engaged.

### 1.2 WARRANTY

- A. Materials and Workmanship: 10 years.
- B. Finish: 20 years.

### 1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, to design glazed aluminum curtain walls.
- B. General Performance: Comply with performance requirements specified, as determined by testing of glazed aluminum curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
  - 1. Glazed aluminum curtain walls shall withstand movements of supporting structure, including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
  - 2. Failure also includes the following:
    - a. Thermal stresses transferring to building structure.
    - b. Glass breakage.
    - c. Noise or vibration created by wind and thermal and structural movements.
    - d. Loosening or weakening of fasteners, attachments, and other components.
    - e. Failure of operating units.
- C. Structural Loads:
  - 1. Wind Loads: As determined by delegated design qualified professional engineer.
  - 2. Other Design Loads: As determined by delegated design qualified professional engineer.
- D. Deflection of Framing Members Supporting Glass: At design wind load, as follows:
  - 1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches (4.1 m) and to 1/240 of clear span plus 1/4 inch (6.35 mm) for spans of greater than 13 feet 6 inches (4.1 m).
  - 2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components to less than 1/8 inch (3.2 mm).
- E. Structural: Test in accordance with ASTM E330/E330M as follows:

1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

F. Water Penetration under Static Pressure: Test in accordance with ASTM E331 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested in accordance with a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 15 lbf/sq. ft. (720 Pa).
2. Maximum Water Leakage: In accordance with AAMA 501.1. No uncontrolled water penetrating assemblies or water appearing on assemblies' normally exposed interior surfaces from sources other than condensation. Water leakage does not include water controlled by flashing and gutters or water that is drained to exterior.
3. Test Performance: Complying with criteria for passing based on building occupancy type when tested in accordance with AAMA 501.4 at design displacement and 1.5 times the design displacement.
4. Vertical Interstory Movement: Complying with criteria for passing based on building occupancy type when tested in accordance with AAMA 501.7 at design displacement and 1.5 times the design displacement.

G. Energy Performance: Certified and labelled by manufacturer for energy performance as follows:

1. Thermal Transmittance (U-factor):
  - a. Fixed Glazing and Framing Areas: U-factor for the system of not more than 0.38 Btu/sq. ft. x h x deg F (2.16 W/sq. m x K) as determined in accordance with NFRC 100.
2. Solar Heat Gain Coefficient (SHGC):
  - a. Fixed Glazing and Framing Areas: SHGC for the system of not more than 0.29 as determined in accordance with NFRC 200.
3. Air Leakage:
  - a. Fixed Glazing and Framing Areas: Air leakage for the system of not more than 0.06 cfm/sq. ft. (0.30 L/s per sq. m) at a static-air-pressure differential of 1.57 lbf/sq. ft. (75 Pa) when tested in accordance with ASTM E283.
4. Condensation Resistance Factor (CRF):
  - a. Fixed Glazing and Framing Areas: CRF for the system of not less than 80 as determined in accordance with AAMA 1503.

#### 1.4 SYSTEM COMPONENTS

A. Framing Members:

1. Construction: Thermally broken.
2. Glazing System: Gaskets on four sides.
3. Glazing Plane: Front.

B. Insulated Spandrel Panels:

1. Section 074213.19 "Insulated Metal Wall Panels.
2. Laminated, metal-faced flat panels as follows:

- a. Overall Panel Thickness: 1 inch (25.4 mm).
- b. Exterior Skin: Aluminum.
- c. Interior Skin: Aluminum.

C. Glazing: Section 088000 "Glazing."

#### 1.5 ALUMINUM FINISHES

A. Aluminum Finishes: Class II, color anodic.

#### 1.6 SOURCE QUALITY CONTROL

A. Testing Agency: Contractor engaged.

#### 1.7 FIELD QUALITY CONTROL

A. Testing Agency: Contractor engaged.

END OF SECTION 084413