SECTION 08500 - METAL WINDOWS

Include the following information into specifications prepared for use on University of Cincinnati projects. This information is supplemental and not intended to be a complete specification.

PART 1 - GENERAL

1.0  PERFORMANCE REQUIREMENTS

A. General: Provide aluminum windows engineered, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading without failure, as demonstrated by testing manufacturer's standard window assemblies representing types, grades, classes, and sizes required for Project according to test methods indicated.

B. Test Criteria: Testing shall be performed by qualified independent testing agency based on the following criteria:

1. Design Wind Velocity: 10 mph.

2. Height of window units above grade at window centerline can be determined from the Drawings.

3. Test Procedures: Test window units according to ASTM E 283 for air infiltration, both ASTM E 331 and ASTM E 547 for water penetration, and ASTM E 330 for structural performance.

The following performance requirements are based on Heavy-Commercial grade windows; adjust requirements to suit project requirements.

C. Performance Requirements:

1. Air Infiltration Rate for Fixed Windows: Not more than 0.15 cfm/ft. of area for and inward pressure of 6.24 lbs/sq. ft.

2. Air Infiltration Rate for Operating Units: Not more than 0.37 cfm/ft. of area for an inward pressure of 6.24 lbs/sq. ft.

3. Water Penetration: No water penetration as defined in the test method at an inward test pressure of 15 percent of the design pressure.

4. Structural Performance: No failure or permanent deflection in excess of 0.4 percent of any member’s span after removing the imposed load, for a positive (inward) and negative (outward) test pressure of 60 lbf./sq. ft.

5. Condensation Resistance: Provide units tested for thermal performance according to AAMA 1503.1 showing a condensation resistance factor (CRF) of 45.

6. Thermal Transmittance: Provide window units with a U value maximum of 0.69 Btu/sq. ft. x hx °F at 15 mph exterior wind velocity, when tested according to AAMA 1503.1.

7. Forced-Entry Resistance: Comply with Performance Level 10 requirements when tested according to ASTM F 588.

8. Thermal Movements: Provide window units that allow thermal movement resulting from ambient temperature change of 120°F: 180°F material surface change, when engineering, fabricating and installing windows to prevent buckling, opening of joints, and overstressing of...
components, connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to solar heat gain and nighttime sky heat loss.

1.0  SUBMITTALS

A. Test Reports: Submit reports from a qualified independent testing agency indicating that each type, grade, and size of window unit complies with performance requirements indicated based on comprehensive testing of current window units within the last 5 years. Test results based on use of down-sized test units will not be accepted.

1.0  WARRANTY

A. Provide a written warranty signed by window manufacturer and installer stating that all parts of the installation will meet specified performance requirements and will be free from defects in materials and workmanship for warranty period. Warranty shall certify that all work is in accordance with the Contract Documents and shall contain a statement that, should any defects develop during the warranty period, caused by improper workmanship or materials, such defects will be repaired or windows will be replaced at no additional cost to the Owner.

1. Warranty period shall be two years from date of Substantial Completion unless otherwise indicated.
2. Warranty period for weatherstripping shall be five years from date of Substantial Completion.

B. The warranty specified in this article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made under the requirements of the Contract Documents.

END OF SECTION