Part 1 General

1.1 GENERAL REQUIREMENTS

.1 This includes all labour and materials required to complete conformance testing on the curtain wall and air barrier membrane installation to meet criteria as referenced by NBC Appendix Part 5. Air-leakage testing on the installation shall consist of periodic qualitative air-leakage examination of the curtain wall and Air Barrier System.

1.2 RELATED SECTIONS

.1 Section 07270 : Air/Vapour Barrier System

.2 Section 08900 : Aluminum Curtain Walls

1.3 REFERENCES

.1 American Society for Testing and Materials (ASTM).

.1 ASTM D4541-02 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

.2 ASTM E330-02 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.

.3 ASTM E283-04 Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

.4 ASTM E783-02 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows.

.5 ASTM E1186-03 Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems.

.2 Canadian Standards Association (CSA)

.1 CMHC Guidelines for Delivery Effective Air Barrier Systems.

.3 ASTM STP 1422 New Protocol for the Inspection and Testing of Building Envelope Air Barrier Systems.

.4 Canadian General Standards Board (CGSB).

1.4 QUALITY ASSURANCE

.1 Testing Agency

.1 Contractor shall notify the Testing Agency in writing of the construction and testing schedule prior to the start of work.

.2 On-site testing and reporting of the Contractor's work shall be carried out by the following company.

.1 UNIES Ltd.
2nd Floor – 1666 Dublin Avenue
Winnipeg, MB, R3H 0H1
Contact: Bert Phillips, P. Eng.
Phone: 633-6363

Part 2 Execution

2.1 EXECUTION

.1 Curtain Wall Performance Verification

.1 Curtain wall system shall not be supplied and installed to the suite until verification of performance requirements is confirmed with Owner, Consultant and Testing Agency.

.2 Curtain Wall Testing

.1 The test shall be completed twice in order to differentiate between curtain wall component leakage and the rough opening leakage. The components may be required to be sealed to eliminate air leakage through the frame and glazing components in order to evaluate the rough opening air leakage.

Utilizing the relevant ASTM standards, air leakage through the rough opening shall be qualitatively determined. The installer, with the assistance of the manufacturer, shall install terminations in the curtain wall framing to prevent extraneous leakage through the interior components which may affect the results.

The standard acceptance shall be based on NBC A 5.4.1.2 in which the maximum air leakage through the components and/or rough opening shall be 0.15 L/(second/square meter) at a 75 Pa pressure differential.

.2 Qualitative Testing: qualitative airtightness testing of the curtain wall system shall be carried out by the selected Testing Agency in accordance with CAN/CGSB 149.10-M, ASTM-E783 and ASTM-E1186. The

Testing Agency will carry out periodic smoke testing and visual examination at interior and exterior surfaces of exterior walls, building corners and typical locations designated by the Consultant.

.2 Air Barrier Membrane Testing

.1 Qualitative Testing: Two tests, for a total of four pull test samples, shall be completed on each substrate type. A minimum mock-up section of 10 square feet shall be installed in order to complete the mock-up. Membrane sample shall be installed in accordance with manufacturer specifications including specific primer type. The minimum standard of acceptance for the project shall be based on the average value of the four readings minus the standard deviation of the four readings.

.2 If minimum specified values for mock-up are not obtained, Contractor shall contact manufacturer for explanation and determine revisions to installation method to ensure minimum acceptable adhesion values are obtained.

.3 Analysis and Corrective Procedures

.1 Airtightness testing will identify locations of air leakage in curtain wall and air barrier membrane penetrations, and will be reported in writing to the Contractor for correction. Contractor shall re-seal and otherwise correct all leakage sites as identified and as may be required.

.2 Following air leakage corrections, the test area will be retested if deemed necessary.

.3 Do not cover any membrane until the Testing Agency provides a written acceptance report.

.4 Initial Testing will be paid by owner. Cost of defects due to deficient performance will be borne by The General Contractor. Should the Contractor fail to meet the on-site specification requirements, all re-testing required due to deficient work and/or testing procedures will be carried out at the Contractor's sole cost. The Contractor shall implement the necessary repairs to the rough opening in order to meet the specification requirements for rough opening air leakage at no cost to the Owner. Re-testing shall be complete to verify that the specification requirements have been obtained.

.4 Testing Access

.1 Contractor to provide access equipment and all safety requirements for testing.

END OF SECTION