

**BUILDING
ENVELOPE
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INC.**

GLASCURTAIN PERFORMANCE TEST

For: Ferguson
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Mr. Pat Arts
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Our File: J14827 Ferg FCW Test Summary

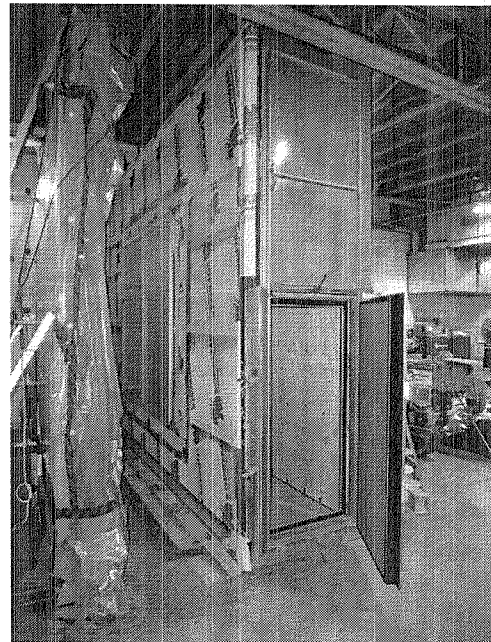




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1.0 INTRODUCTION

In response to the request of Mr. Pat Arts of Ferguson, we observed the Glascurtain Performance Test completed at the Ferguson Plant on April 3, 2014. The purpose of our program was to observe and document the overall results of the Performance Tests. We did not review the frame fabrication or general glazing installations, however portions of assembly were dismantled following testing to note general procedures. Test equipment was provided by Ferguson, and reported to have been recently calibrated (however not verified as part of our program).

The test specimen generally included a custom profile fiberglass curtain wall frame section, with double glazed sealed units, fiberglass pressure plates, and aluminum glazing caps. The general frame configuration consisted of two vision openings in a 'punched' opening. The overall size of the specimen was 2061 mm wide by 2061 mm high. Details of the specimen are provided by the Glascurtain Performance Test Shop Drawings, dated April 2014 (prepared by Ferguson).

The intent of the test program was to produce a sample curtain wall assembly and evaluate the performance based on standardized tests for air and water leakage. Performance criteria was based on current industry test standards for this type of system. Although performance testing does not guarantee a direct correlation between test data and field performance, the results of the testing can be used to confirm system performance under controlled laboratory type conditions.

2.0 TEST PROGRAM

The test specimen was installed in a chamber inside the Ferguson plant, with anchorage and connections to the adjacent wall areas designed to simulate job conditions. The specimen was tested for static pressure air leakage and water penetration, in general conformance with published test standards.

2.1 Test I - Static Air Leakage

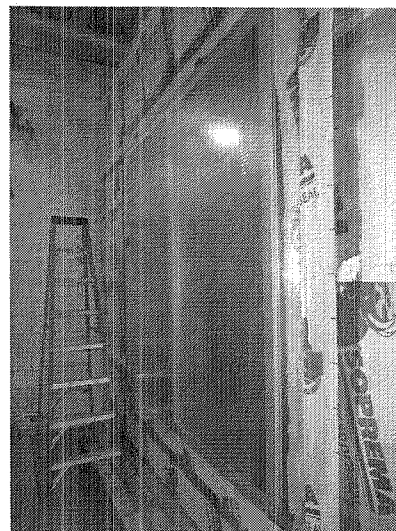
Testing was completed in general accordance with ASTM E283, entitled "Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors". The test generally consists of sealing a test specimen into a chamber, supplying air to or exhausting air from the chamber at the rate required to maintain the specified test pressure difference across the specimen, and measuring the resulting air flow.



This test procedure requires a combined air leakage measurement through both the specimen and chamber, and a subsequent measurement with the specimen covered with a sealed polyethylene sheet (also known as “bagging”, adjacent photograph). The resulting difference between the measurements provides the air leakage rate through the specimen.

Air infiltration and exfiltration through the specimen was recorded at a static pressure of 300 Pa, with the following results:

<u>Infiltration</u>	0 (negligible or not measurable)
<u>Exfiltration</u>	2.21 m³/hr total (equivalent to 0.52 m³/hr/m²)

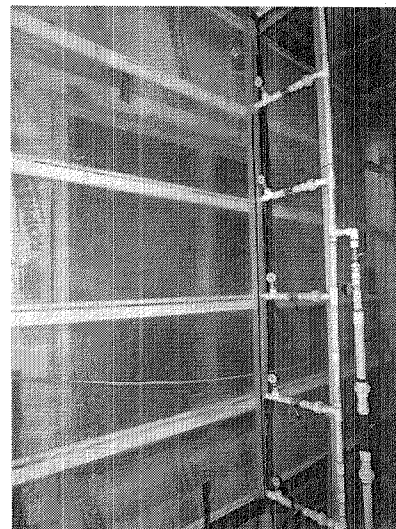


2.2 Test II - Static Water Leakage

Testing was completed in general accordance with ASTM E331, entitled “Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference”. The test generally consists of sealing a test specimen into a chamber, supplying air to or exhausting air from the chamber at the rate required to maintain the specified test pressure difference across the specimen, while spraying water onto the exterior at the required rate and observing any water leakage.

Testing was completed at a pressure of 720 Pa (equivalent to 15 psf or the stagnation pressure of a 120 km/h wind) for 15 minutes.

No sources of water leakage were observed to the interior.





3.0 SUMMARY

The Glascurtain test specimen was tested for static pressure air leakage and water penetration. Air infiltration through the specimen was determined to be negligible, with air exfiltration equivalent to **0.52 m³/hr/m²** recorded at 300 Pa. No water penetration was observed at a static test pressure of 720 Pa.

4.0 CLOSURE

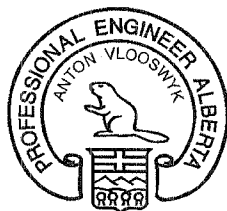
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We trust that this information meets with your present requirements. If you have any questions or if we may be of further service, please contact us at your convenience.

Sincerely yours,
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