

The Intertek logo consists of the word "Intertek" in white, sans-serif font, centered within a dark blue rounded rectangle.

FIELD TEST REPORT

Rendered to:

REAL ESTATE AND CONSTRUCTION SERVICES

**PROJECT: Senate / New Legislative Office Building
St. Paul, Minnesota**

Consultant's Report

Report No.: E8666.03-201-43
Test Date: 08/27/15
Report Date: 08/28/15

FIELD TEST REPORT

Rendered to:

REAL ESTATE AND CONSTRUCTION SERVICES –
Department of Administration –
State of Minnesota
309 Administration Building, 50 Sherburne Avenue
St. Paul, Minnesota 55155

Report No.: E8666.03-201-43

Test Dates: 08/27/15

Report Date: 08/28/15

Project Identification: Senate / New Legislative Office Building
St. Paul, Minnesota

Project Summary: Architectural Testing, Inc., an Intertek company ("Intertek-ATI"), was contracted to perform on-site testing at the above referenced project. Water penetration and air infiltration tests were conducted on two specimens consisting of a Kawneer 1600 UT Curtain Wall System. The specimens tested met the performance requirements listed herein.

Test Methods: Tests were conducted in accordance with the following:

AAMA 501.2-09, Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems

AAMA 503-14, Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls, and Sloped Glazing Systems

ASTM E 783 – 02 (2010), Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors

ASTM E1105–00 (2008), Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference

Pre-Test Inspection:

A visual inspection of the designated test area was performed prior to testing. The test specimen was compared to other adjacent curtain walls on the project. No obvious deficiencies or anomalies were observed.

Test Procedure:

The perimeter of the chamber was attached and sealed to the precast surrounding the interior of the curtain wall framing.

The chamber was equipped with a centrifugal blower/vacuum pump, air flow meter, and a pressure sensing device to maintain the desired air pressure differential across the assembly.

Air infiltration testing was conducted at 6.24 psf. Water penetration testing was conducted at 15.0 psf pressure differential while simultaneously spraying water on to the exterior face of the assembly at the required rate of 5 gph/ft². During testing, the interior face of the test area was inspected for water leakage. Testing continued for 15 minutes.

Water was applied using a hand held spray assembly employing a type B25 #6.030 nozzle, pressure gauge, control valve and a 3/4" hose. The water flow was adjusted to produce 30 psi at the nozzle. Water was directed at the joint under test, perpendicular to the face of the specimen. The nozzle was moved slowly back and forth above the joint, at a distance of one foot, for a period of five minutes for each five feet of joint. An observer on the inside checked for water leakage and documented the results.

Performance Criteria: Provided by Real Estate and Construction Services—Department of Administration—State of Minnesota per job specification section 08-4003-5 and 08-4003-6

Maximum Allowable Air Infiltration at 6.24 psf: 0.09 cfm/ft²

Water Leakage: (Field Water Definition)

TEST RESULTS

Date: 08/27/15

Ambient Exterior Air Temperature: 73°F

Barometric Pressure: 30.05 in. Hg

General Note #1: All locations referenced are as viewed from the interior unless otherwise noted.

General Note #2: Unless specifically noted within this report, atmospheric conditions at the time of testing did not have an adverse impact on the results of the test. These environmental conditions are recorded for informational use only to confirm that the conditions will not have a negative impact on testing.

General Note #3: The test area(s) were chosen by the client or client representative.

Test Specimen #1: (AAMA 503-14)

Manufacturer: Kawneer 1600 UT

Description: Aluminum curtain wall system, CW4

Overall Size: 8' wide by 8' high

Location: South elevation, south plaza, first floor, CW4, first lite from east, one lite high

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Air Infiltration @ 6.24 psf	< 0.01 cfm/ft ²	0.09 cfm/ft ²
Water Penetration @ 15.0 psf	No water leakage	No water leakage

Test Specimen #2: (AAMA 501.2)

Manufacturer: Kawneer 1600 UT

Description: Aluminum curtain wall system, CW4

Overall Size: 22' wide by 48' high

Location: South elevation, south plaza, first floor, CW4, both jambs, 4th and 5th lites up from bottom by 2 lites wide from west. 150' of total curtain wall tested.

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Water Penetration @ 30 psi Nozzle pressure	No Water Leakage	No water leakage

Witnesses: The following representatives witnessed all or part of the testing.

<u>Name</u>	<u>Company</u>
Jacob Schneider	M. A. Mortenson Construction
Jake Bauer	CPMI
Steve Flaherty	InterClad
Dan Waarvik	Inspec
Mike Geisler	Intertek-ATI
Dax Stoehr	Intertek-ATI

Intertek-ATI will service this report for a period of four years from the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report is intended to help in the client's quality assurance program, but it does not represent a continuous or exhaustive evaluation of the specimen tested or of other products or materials that were not evaluated. The statements and data provided herein do not constitute approval, disapproval, certification, or acceptance of performance or materials.

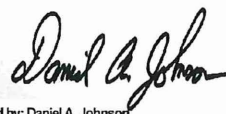
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For INTERTEK-ATI:



Digitally Signed by: Dax Stoehr

Dax R. Stoehr
Technician



Digitally Signed by: Daniel A. Johnson

Daniel A. Johnson
Director-Regional Operations

DRS/jb

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Photograph (1 page)



Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	08/27/15	N/A	Original report issue.



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APPENDIX A

Photograph



Photo No. 1 - Interior view of test area CW4 performing AAMA 503-14 testing.