

EASTMAN PERFORMANCE FILMS, LLC TEST REPORT

SCOPE OF WORK

ASTM E283, ASTM E330 AND ASTM E331 TESTING ON LLUMAR SCL SR PS8, SAFETY FILM

REPORT NUMBER

I9781.01-109-44

TEST DATE(S)

10/16/18

ISSUE DATE

10/25/18

RECORD RETENTION END DATE

10/16/22

PAGES

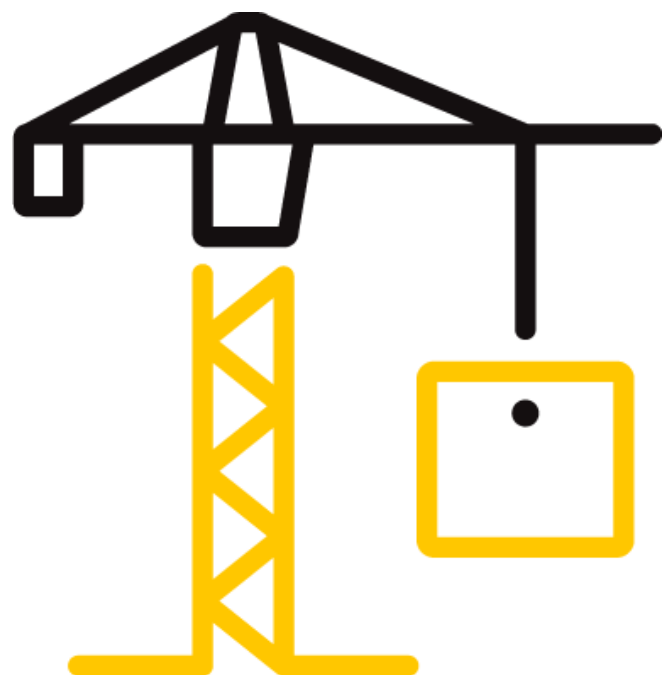
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DOCUMENT CONTROL NUMBER

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TEST REPORT FOR EASTMAN PERFORMANCE FILMS, LLC

Report No.: I9781.01-109-44

Date: 10/25/18

REPORT ISSUED TO

EASTMAN PERFORMANCE FILMS, LLC

4210 The Great Road
Fieldale, Virginia 24089

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Eastman Performance Films, LLC to perform testing in accordance with ASTM E283, ASTM E330/E330M, and ASTM E331, on their LLumar SCL SR PS8, Safety Film. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

TITLE	RESULTS
Design Pressure	±2400 Pa (±50.13 psf)
Air Infiltration	0.5 L/s/m ² (0.09 cfm/ft ²)
Air Exfiltration	0.2 L/s/m ² (0.03 cfm/ft ²)
Water Penetration Resistance Test Pressure	360 Pa (7.52 psf)
Uniform Load Structural Test Pressure	±3600 Pa (±75.19 psf)

For INTERTEK B&C:

COMPLETED BY:	Richard E. Hartman	REVIEWED BY:	Timothy J. McGill
TITLE:	Technician– Product Testing	TITLE:	Manager – Product Testing
SIGNATURE:		SIGNATURE:	
DATE:	10/25/18	DATE:	10/25/18

REH:wml

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SECTION 3

TEST METHOD(S)

The specimen was evaluated in accordance with the following:

ASTM E283-04(2012), *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*

ASTM E330/E330M-14, *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

ASTM E331-00(2016), *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen(s) was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Head, sill, and jambs	1-1/2" x 1-1/2" wood blind stops secured using #8 x 3" flat head screws	Blind stops located at the head, sill, and jambs on the interior and exterior, fasteners located 2" from each end and spaced 6" on center

The specimen was blind stopped into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the window was sealed with sealant.

SECTION 5

EQUIPMENT

Tape measure verification: 63788

Weather station: 63316

Control Panel: 005406

Spray rack: 003956-D

Linear transducer: INT00142

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SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Steve DeBusk	Eastman Performance Films, LLC
Timothy J. McGill	Intertek B&C
Richard E. Hartman III	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Safety Film

Series/Model: LLumar SCL SR PS8

Product Size(s):

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
2.0 m ² (22.0 ft ²)				
Overall size	1219	48	1676	66

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, sill, and jambs	Aluminum	Extruded and thermally broken

	JOINERY TYPE	DETAIL
All corners	Butted	The corners were secured together using two #12 x 1" pan head screws through the jambs and into the head and sill screw bosses

Reinforcement: No reinforcement was utilized.

Weatherstripping: No weatherstripping was utilized.

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Glazing: *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

GLASS TYPE	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
1" IG	Desiccant-filled aluminum box spacer	1/4" annealed 0.008" LLumar SCL SR PS8	1/4" annealed	Exterior glazed against a bead of Dow Corning 995 structural silicone and secured in place using a snap-in aluminum glazing bead at the sill with a vinyl glazing strip against the glazing

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Fixed window	1	1080 x 1543	42-1/2 x 60-3/4	1/2"

Drainage: No drainage was utilized.

Hardware: No hardware was utilized.

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SECTION 8
TEST RESULTS

The temperature during testing was 16 - 17°C (61 - 63°F). The results are tabulated as follows:

TITLE OF TEST	RESULTS	ALLOWED	NOTE
Air Leakage, Infiltration per ASTM E283 at 300 Pa (6.27 psf)	0.5 L/s/m ² (0.09 cfm/ft ²)	Report only	1
Air Leakage, Exfiltration per ASTM E283 at 75 Pa (1.57 psf)	0.2 L/s/m ² (0.03 cfm/ft ²)	Report only	1
Water Penetration, ASTM E331 at 360 Pa (7.52 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E330 Deflections taken at the left jamb and sill corner +2400 Pa (+50.13 psf) -2400 Pa (-50.13 psf)	<0.3 mm (<0.01") 0.5 mm (0.02")	Report only	3, 4
Uniform Load Structural, per ASTM E330 Permanent set taken at the left jamb and sill corner +3600 Pa (+75.19 psf) -3600 Pa (-75.19 psf)	<0.3 mm (<0.01") 0.3 mm (0.01")	Report only	3, 4

General Note: All testing was performed in accordance with the referenced standard(s).

Note 1: Test Date 10/16/18 / Time: 10:25 AM

Note 2: Without insect screen.

Note 3: Loads were held for 10 seconds.

Note 4: Tape and film were not used to seal against air leakage during structural testing.

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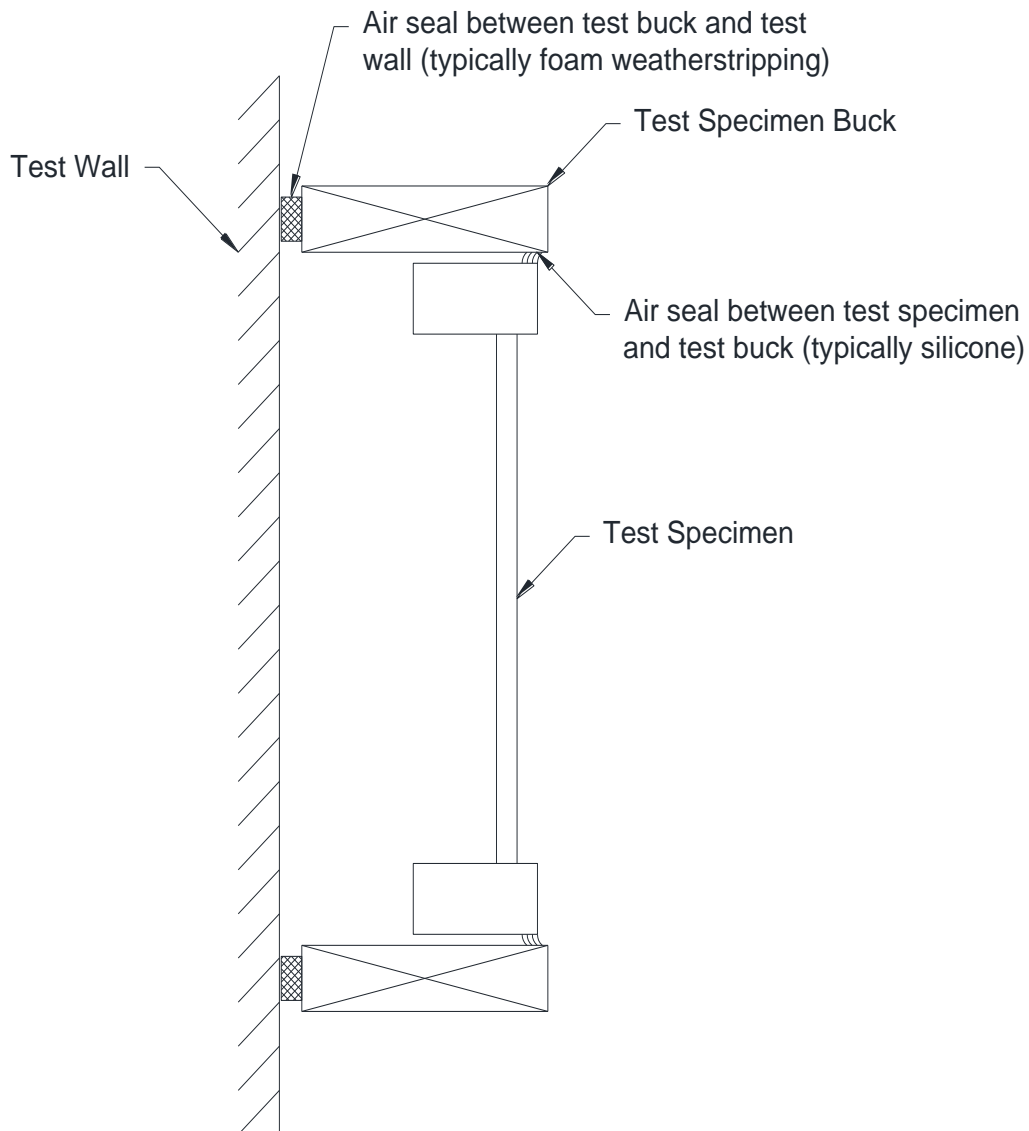
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SECTION 9

LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



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SECTION 10 PHOTOGRAPH



Photo No. 1
Test Specimen After Air, Water, and Structural Testing



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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SECTION 11 DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

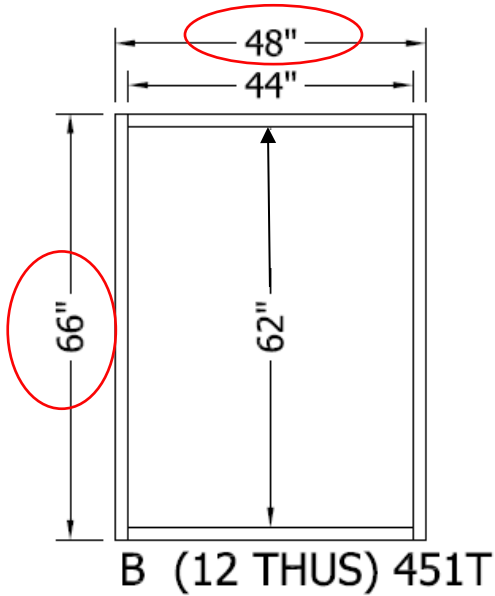
Eastman Performance Films, LLC

Intertek Quote 207215R1

ASTM E1886, E1996, E283, E330, E331 Test Sample Details

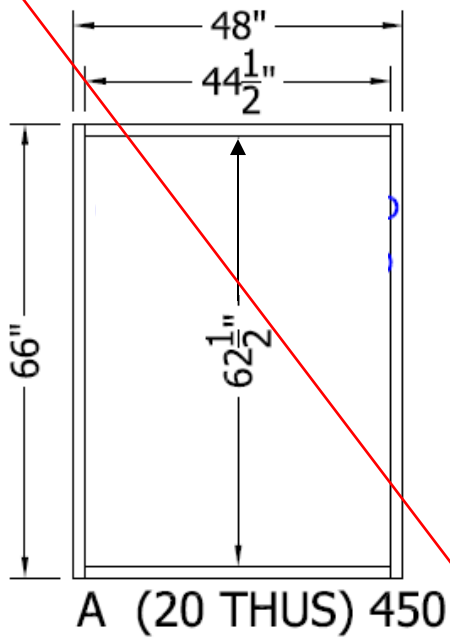
Dual-pane unit frames

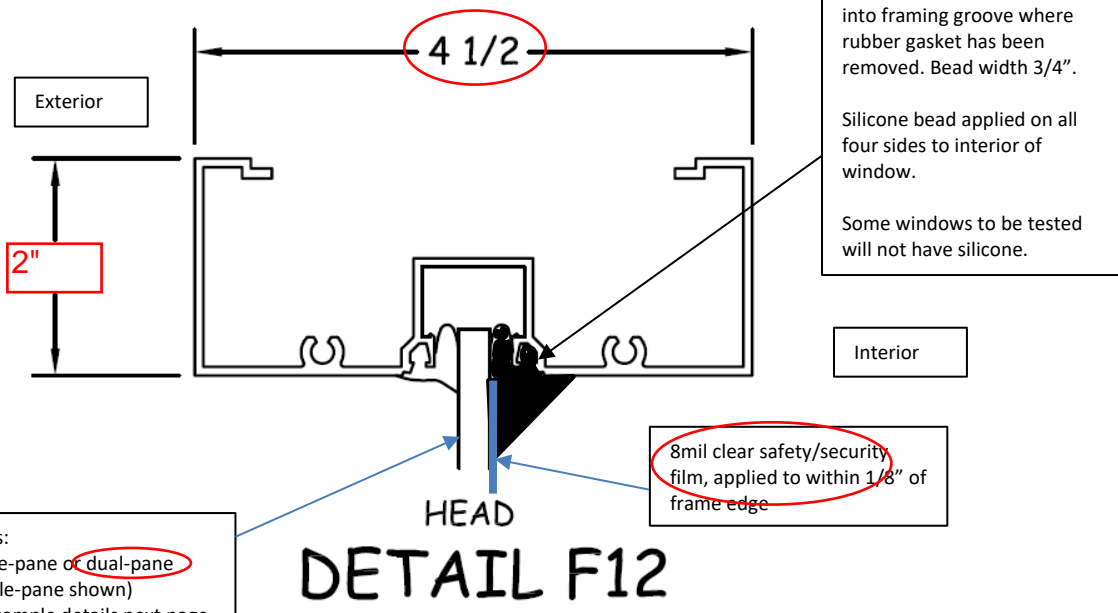
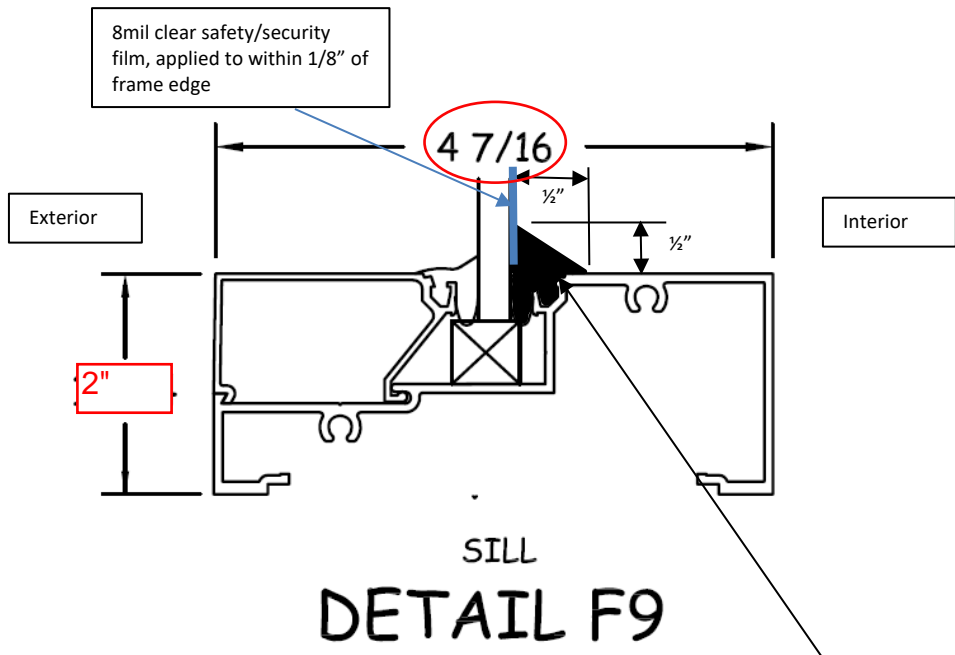
Kawneer 451 Aluminum Framing



Single-pane unit frames

Kawneer 450 Aluminum Framing



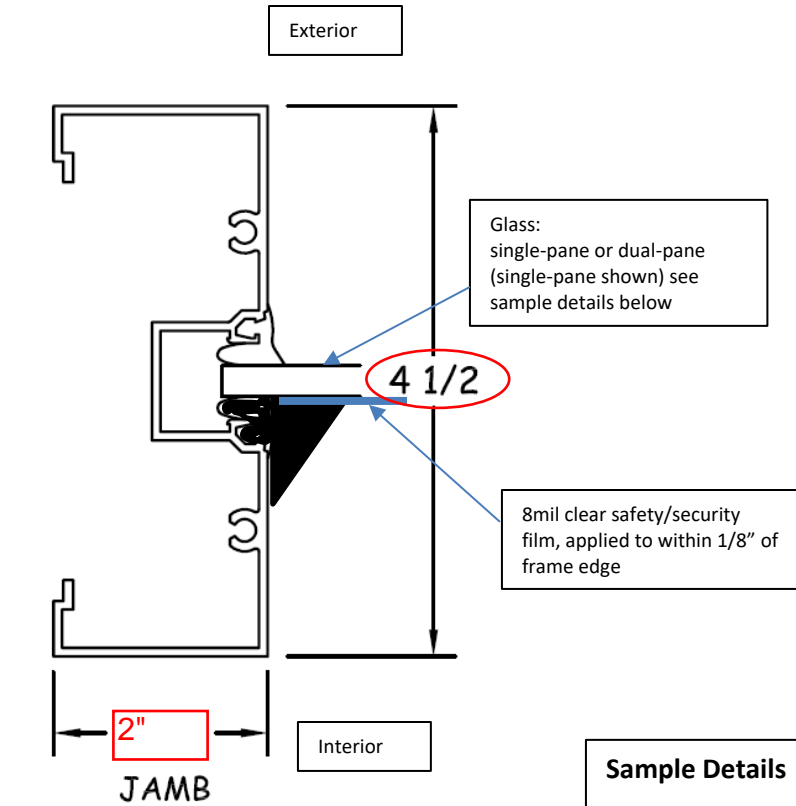


Tremco Proglaze SSG or Dow Corning 995 Structural Silicone caulking, 1/2" onto film, 1/2" onto frame and into framing groove where rubber gasket has been removed. Bead width 3/4".

Silicone bead applied on all four sides to interior of window.

Some windows to be tested will not have silicone.

Glass:
single-pane or dual-pane
(single-pane shown)
See sample details next page



DETAIL F10

Sample Details

<u>Sample ID</u>	<u>Glass Type</u>
43, 44, 45	Single Pane Annealed
31, 32, 33	Single Pane Tempered
4, 5, 6	Dual Pane Annealed
10, 11, 12	Dual Pane Tempered



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SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/25/18	N/A	Original Report Issue