

OSHA FALLS PROTECTION TEST REPORT

Rendered to:

STARLIGHT SKYLIGHTS

SERIES/MODEL: Architectural Glass Glazed

PRODUCT TYPE: Fixed Skylight

Report No: A4844.01-109-44

Test Date: 10/21/10

Report Date: 11/15/10

Expiration Date: 10/21/14

OSHA FALLS PROTECTION TEST REPORT

Rendered to:

STARLIGHT SKYLIGHTS
304 Broad Street
Hurlock, Maryland 21643

Report No: A4844.01-109-44
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Project Summary: Architectural Testing, Inc. was contracted by Starlight Skylights to perform testing on one Series/Model Architectural Glass Glazed, fixed skylight. The test specimen description and results are reported herein. The test sample was provided by the client.

Test Specification: The test specimen was tested to assess compliance with Occupational Safety and Health Administration/U.S. Department of Labor Regulations (Standards- 29 CFR)- 1910.23(e)(8). A 200 lbf weight, fabricated from a bag filled with sand, was placed on the center of the dome for a minimum of 60 seconds and then dropped from varying heights above the skylight starting at 2' until permanent visible damage was noted. The highest impact load resulting in damage was recorded.

Test Specimen Description:

Series/Model: Architectural Glass Glazed

Product Type: Fixed Skylight

Overall Size: 51-1/8" wide by 99-1/8" high

Fixed Daylight Opening Size: 46-3/4" wide by 94-3/4" high

Overall Area: 35.19 ft²

Finish: All aluminum was painted.

Weatherstripping: No weatherstripping was utilized.

Test Specimen Description: (Continued)

Glazing Detail: The unit was glazed with a sheet of 1-1/8" thick insulating glass. The insulating glass was constructed of a sheet of 1/4" thick clear tempered glass outboard and 3/8" thick laminated glass inboard separated by an aluminum spacer system. The laminated glass was constructed of two sheets of 1/8" thick clear tempered glass and a 0.030" thick PBV interlayer. The glass was set from the exterior onto a custom-cut Kerf-mounted gasket and secured with a gasket and an extruded aluminum pressure plate. A wood spacer was utilized to fill the exterior glazing pocket and was sealed with a Kerf-mounted gasket on either side and silicone on the interior side. The extruded aluminum pressure plate was secured to the frame with 1/4" x 2" long bolts with neoprene washers located 3" from each end and spaced 10" on center at the jambs and spaced 8-1/2" on center at the head and sill (Reference Drawing #Section 1 101).

Frame Construction: The frame was constructed of extruded aluminum members. The corners were coped and butted. The jambs utilized an aluminum bracket secured to the jambs with four 1/4" x 1" long bolts and secured to the head and sill with four 1/4" x 1" long bolts.

Installation: Test specimen was laid horizontally on the ground during testing.

Test Results: The results are tabulated as follows:

OSHA Safety Test

<u>Test Method</u>	<u>Load Location</u>	<u>Results</u>
200 lbf	Center of glass	No visible damage

Note: The 200 lbf weight was gently applied perpendicular to the center of the dome. After 60 seconds of rest time, there was no visible damage to the skylight.

OSHA Safety Drop Test

<u>Test Method</u>	<u>Load Location</u>	<u>Results</u>
400 lbf-ft (2' drop height)	Center of glass	No visible damage
800 lbf-ft (4' drop height)	Center of glass	No visible damage
1000 lbf-ft (5' drop height)	Center of glass	No visible damage
1200 lbf-ft (6' drop height)	Center of glass	No visible damage
1400 lbf-ft (7' drop height)	Center of glass	See Note #1

Note #1: At the 7' drop height, the interior laminated glass fractured. The glazing cap screws at the head disengaged. The bag did not fall through the skylight.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. 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 specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:

Russell W. Clark
Technician

Michael D. Stremmel, P.E.
Senior Project Engineer

RWC:dem

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Test Equipment (1)
- Appendix-B: Photographs (2)
- Appendix-C: Drawings (4)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	11/15/10	N/A	Original report issue

Appendix A
Test Equipment

Instrument	Manufacturer	Asset #
Force Gauge	Viking	005608

Appendix B
Photographs

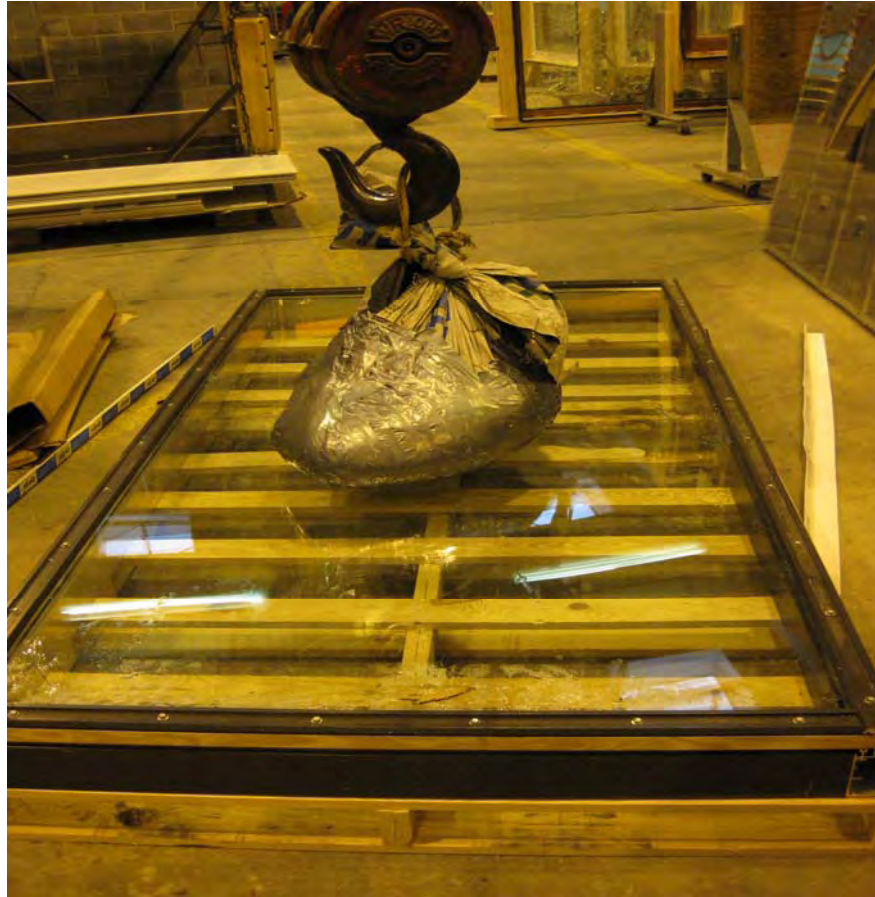


Photo No. 1
200 lb. Static Load



Photo No. 2
Laminated Glass Fracture at 7' Drop

Appendix C

Drawings

OSHA TESTING BILL OF MATERIALS

	DESIGNATION	QTY	DESCRIPTION	UNIT A
1	C1,C2	4	4" Aluminum Extruded Rafter	24' (perimeter)
2	C3	4	Alum. extruded glazing bar	24' (Perimeter)
3	C4	4	Alum. Extruded snap cap	24' (Perimeter)
4	C5	4	1"x1" Alum. tube spacer	24' (Perimeter)
5	C6	16	Neophrene glazing gasket	384'-0"
6	C7	40	#14 x 2" SSHH Glazing bar Screws	40 aprox.
7	C8	1	Insulated Glass Unit	48" x 96"



Architectural Testing

Test sample complies with these details.

Deviations are noted.

Report # A4844.01

Date 11/8/10 Tech R. Clark

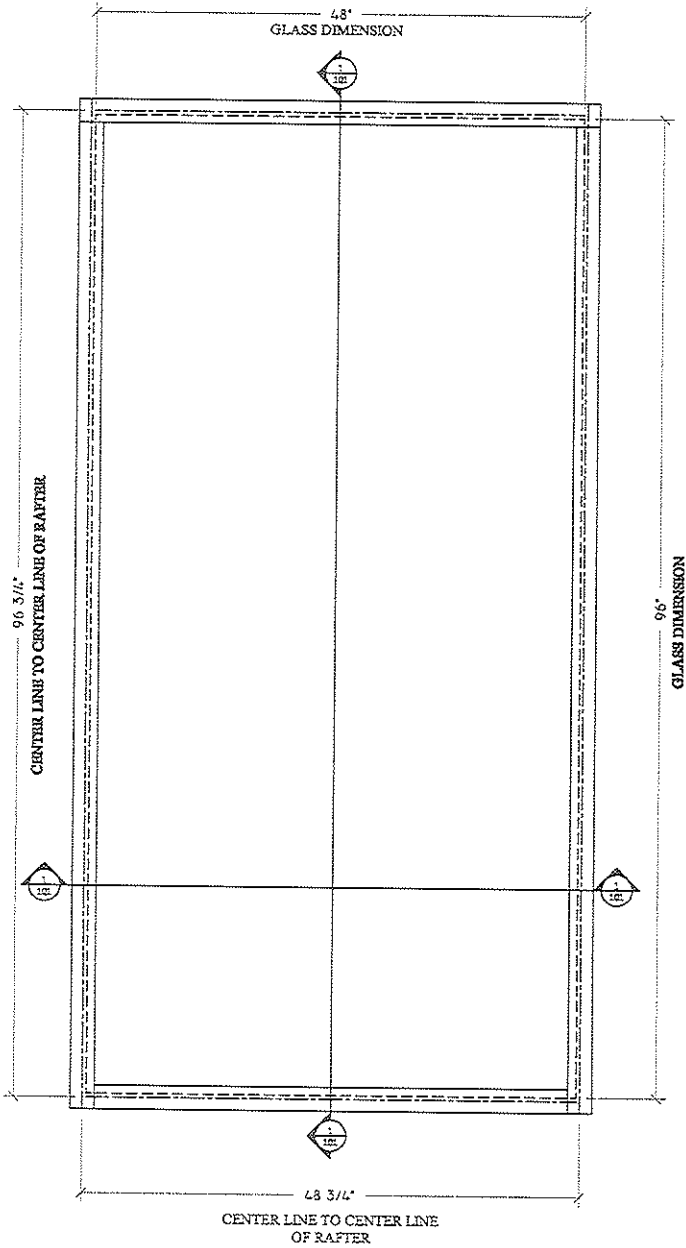


Architectural Testing

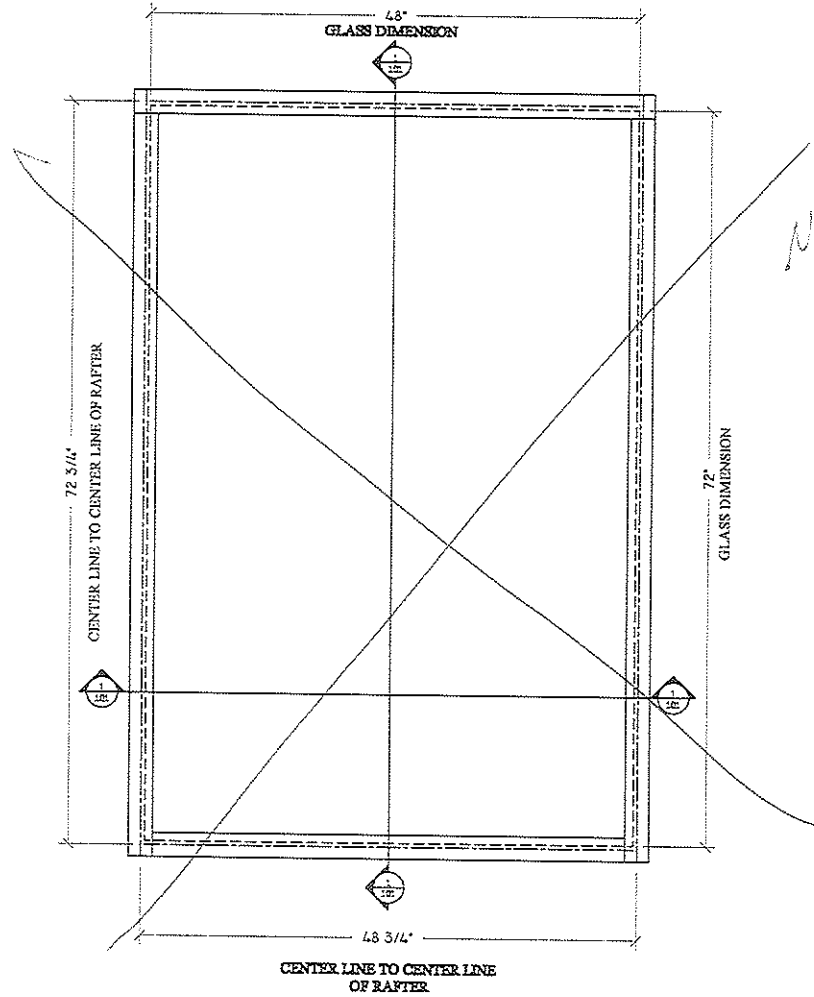
Test sample complies with these details.
Deviations are noted.

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Date 11/8/10 Tech RC

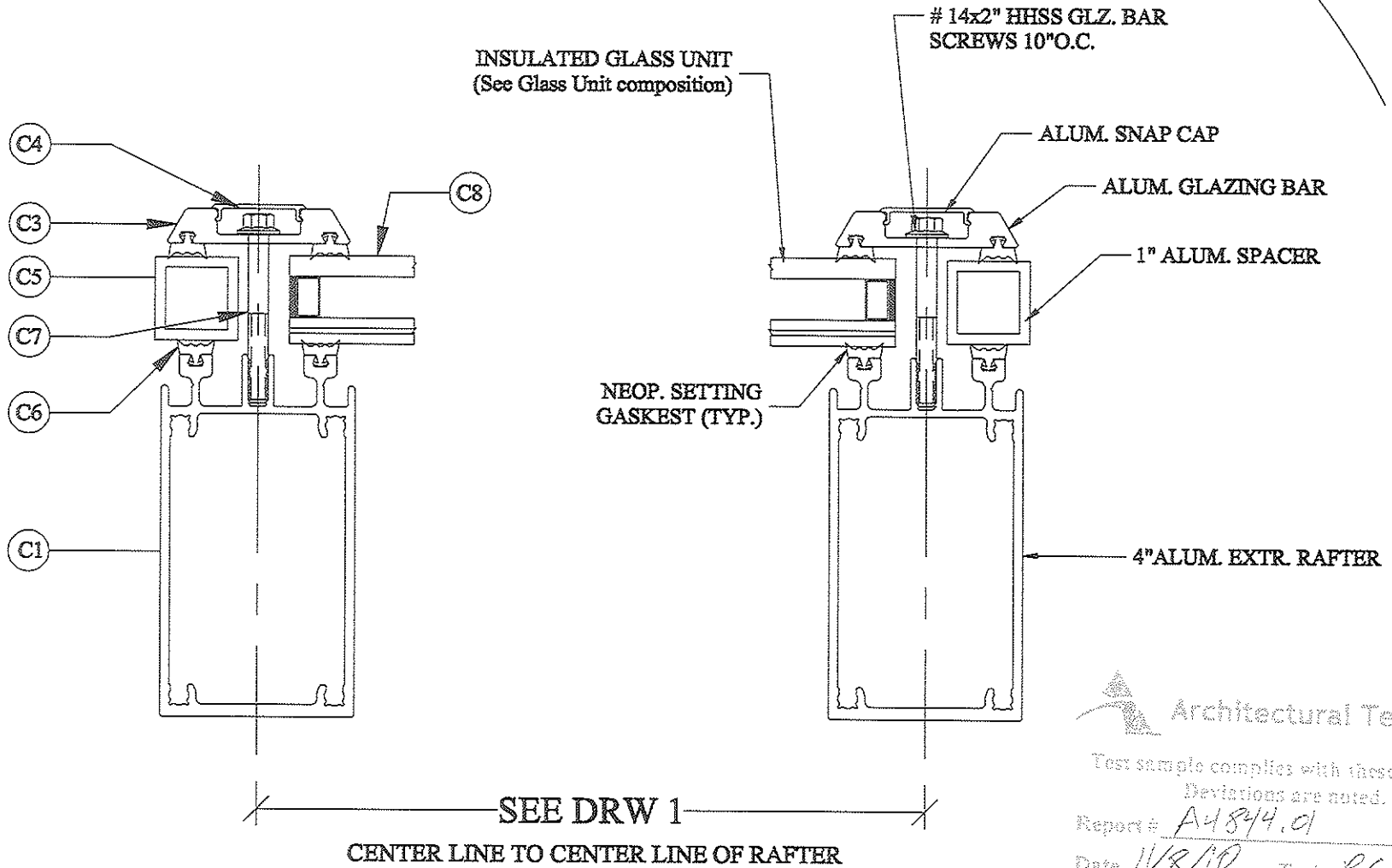


UNIT A



RC
Not tested

UNIT B



Architectural Testing

Test sample complies with these details.
Deviations are noted.

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Date 11/8/10 Tech R Clark

1 SECTION

101


Scale: 1:1

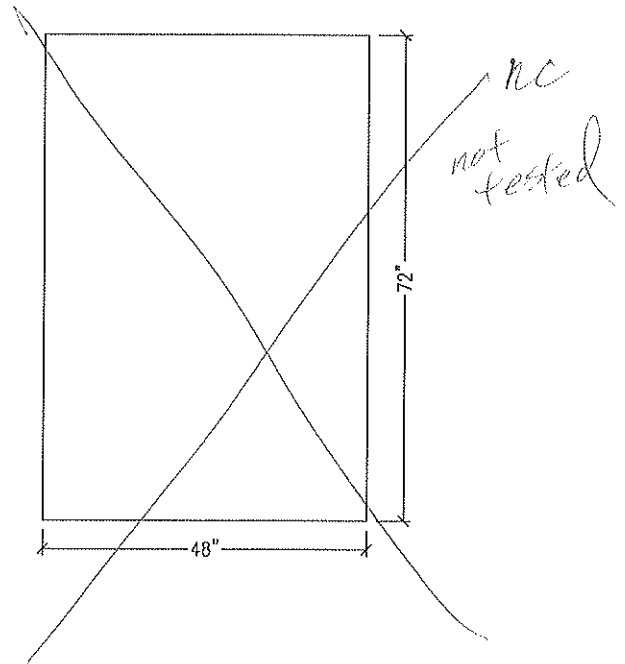
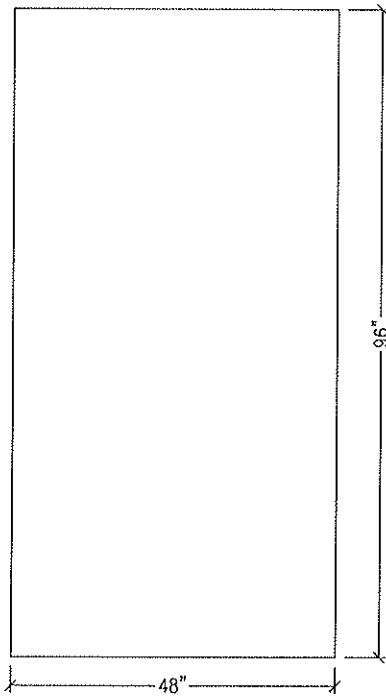
ORCA Manufacturing, Inc.
 P.O. Box 2186
 Easton, MD 21601
 Phone: 800-776-1539

GLASS ORDER

VENDOR: Oldcastle Glass		Purchase Order #	
ATTN: Jackie	PH:	FAX:	
DATE: May 07, 2010	PROJECT: OSHA TESTING		

PLAN VIEW

 **Architectural Testing**
 Test sample complies with these details.
 Deviations are noted.
 Report # A4844.01
 Date 11/8/10 Tech R.Clark



CS GLASS DIMENSION - OSHA TESTING
 Scale: 1:1

NOTES:	GLAZING UNIT COMPOSITION:
SKYLIGHT # 4	O.A = 1-1/4" LOW-E INSULATED GLASS CONSISTING OF
pg: 1 OF 1	1/4" GREY HS 1/2" DUAL EDGE SEALED AIR SPACE 1/2" LOW-E HS LAMINATED WITH 0.03" POLYVINYL BUTYRAL (PVB) INTERLAYER