

**TEST REPORT**

**Report No.:** B9924.01-109-44

**Rendered to:**

ORCA MANUFACTURING, INC.  
dba Starlight Skylights  
Hurlock, Maryland

**PRODUCT TYPE:** Fall Guard/Security Grill  
**SERIES/MODEL:** FGSG

**SPECIFICATION:** Occupational Safety and Health Administration/U.S. Department of  
Labor Regulations (Standards- 29 CFR)- 1910.23(e)(8).

**Test Date:** 06/29/12  
**Report Date:** 08/28/12  
**Test Record Retention Date:** 08/28/16

**1.0 Report Issued To:** ORCA Manufacturing, Inc.  
dba Starlight Skylights  
304 Broad St.  
P. O. Box 992  
Hurlock, Maryland 21643-0992

**2.0 Test Laboratory:** Architectural Testing, Inc.  
130 Derry Court  
York, Pennsylvania 17406-8405  
717-764-7700

**3.0 Project Summary:**

**3.1 Product Type:** Fall Guard/Security Grill

**3.2 Series/Model:** FGSG

**3.3 Compliance Statement:** Results obtained are tested values and were secured by using the designated test method(s).

**3.4 Test Date:** 06/29/2012

**3.5 Test Location:** Architectural Testing, Inc. test facility in York, Pennsylvania.

**3.6 Test Sample Source:** The test specimen was provided by the client. Representative samples of the test specimen(s) will be retained by Architectural Testing for a minimum of four years from the report completion date.

**3.7 Drawing Reference:** The test specimen drawing has been reviewed by Architectural Testing and is representative of the test specimen(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawing located in Appendix B. Any deviations are documented herein or on the drawings.

**3.8 List of Official Observers:**

<u>Name</u>	<u>Company</u>
Michael D. Stremmel, P.E.	Architectural Testing, Inc.
Emily C. Riley	Architectural Testing, Inc.

**4.0 Test Specification(s):**

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 lead shot, was placed on the center of the guard for a minimum of 60 seconds. The bag was removed and the test unit was inspected for any signs of damage or failure. The bag was then dropped from varying heights above the guard starting at 2' until permanent visible damage was noted. The highest impact load resulting in damage was recorded.

## 5.0 Test Specimen Description:

### 5.1 Product Sizes:

Overall Area: 76.9 ft <sup>2</sup>	Width (inches)	Height (inches)
Overall size	94-3/4	116-15/16

### 5.2 Guard/Grill Construction:

Frame Member	Material	Description
Rails	Aluminum	Extruded, "Z" shaped
Grill	Aluminum	1/4" diameter rod, welded to rails at each end and cross members at every other intersection

## 6.0 Installation:

The specimen was installed onto a Spruce-Pine-Fir wood buck.

Location	Anchor Description	Anchor Location
Frame rails	#10 x 1-1/2" long Phillips pan head screws	2" from each end and spaced 8" on center

## 7.0 Test Results: The results are tabulated as follows:

### 7.1 OSHA Safety Test

Test	Load Location	Results
200 lbf	Center of guard/grill	No visible damage

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

### 7.2 OSHA Safety Drop Test

Test Method	Load Location	Results
200 lbf at rest	Center of guard/grill	No visible damage
400 lbf-ft (2' drop height)	Center of guard/grill	No visible damage
800 lbf-ft (4' drop height)	Center of guard/grill	See Note #1

*Note #1: At the 4' drop height, the wood test buck bowed and cracked at the midspan and two welds broke at the impact location. The impact bag did fall through the test specimen.*



The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made. 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.

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Emily C. Riley  
Technician

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

ECR:dem

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

Appendix-A: Photographs (4)

Appendix-B: Drawing (1)

**Appendix A**  
**Photographs**



**Photo No. 1**  
**Fall Guard/Security Grill**



**Photo No. 2**  
**Construction Detail**



**Photo No. 3**  
**200 lb Static Load**



**Photo No. 4**  
**After 2 ft. Drop**



**Photo No. 5**  
**After 2 ft. Drop**



**Photo No. 6**  
**After 4 ft. Drop**



**Photo No. 7**  
**After 4 ft. Drop**

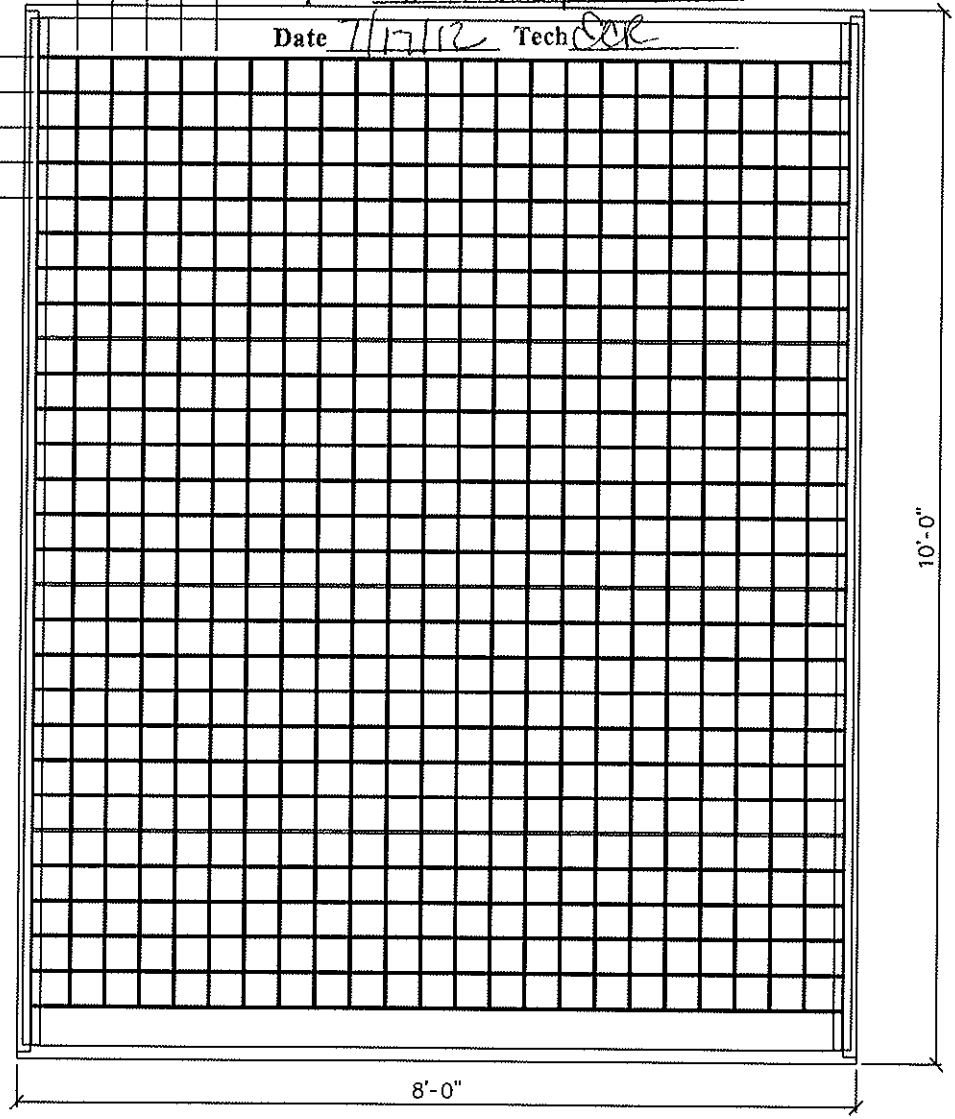


## **Appendix B**

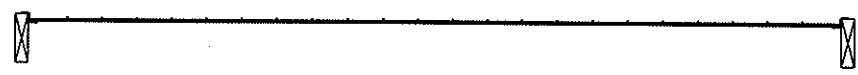
### **Drawing**

4" OC TYPICAL      Test sample complies with these details.  
 Deviations are noted.  
 Report # B9924.01-109-44  
 Date 7/17/12 Tech OK

4" OC TYPICAL



① **FALL GUARD - PLAN VIEW** Scale: nts



② **FALL GUARD - FRONT VIEW** Scale: nts



<b>TITLE:</b> SECURITY GRILL / FALL GUARD OSHA FALL PROTECTION COMPLIANT			
<b>MODEL:</b> Test	<b>DRAWING No.</b> A01	<b>SCALE:</b> As noted	<b>ORCA Manufacturing, Inc.</b> P.O. Box 992 Hurlock, MD 21643 PHONE (800) 776-1539 FAX (410)943-8245 <a href="http://www.starlightskylights.com">www.starlightskylights.com</a>
<b>DRAWN BY:</b> AP	<b>REV.:</b>	<b>ENGINEER:</b> AbeP	
<b>DATE:</b> May 11, 2012	<b>WEIGHT:</b> N/A	<b>SHEET:</b> 1 of 2	