

PERFORMANCE TEST REPORT

Rendered to:

SAINT-GOBAIN SOLAR GARD LLC

PRODUCT: Solar Gard Armorcoat Safety Film

Report No.: C9680.01-106-37

Report Date: 01/03/14

Test Record Retention Date: 11/27/17

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Rendered to:

SAINT-GOBAIN SOLAR GARD LLC
 4540 Viewridge Avenue
 San Diego, California 92123-1637

Report No.: C9680.01-106-37
 Test Dates: 07/09/13
 Through: 11/27/13
 Report Date: 01/03/14
 Test Record Retention Date: 11/27/17

Product: Solar Gard Armorcoat Safety Film

Project Summary: Architectural Testing, Inc. was contracted by Saint-Gobain Solar Gard LLC to evaluate organic coated glass samples in accordance with ANSI Z97.1-2009, *Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test*, and CPSC 16 CFR 1201. The evaluation consisted of 3,000 hours of accelerated weathering and subsequent inspection of the laminate assembly for adhesion and tensile properties.

Product Description: All tested specimens reported herein were prepared by Saint-Gobain Solar Gard LLC and submitted directly to Architectural Testing.

Test Results Summary: Performance results of the evaluated specimens are contained in the following table:

Test Results Summary			
Evaluated Property	% of Controls		Pass/Fail
	Results	Requirement	
Adhesion	>100 %	Minimum 75 %	Pass
Tensile Strength	90 %		Pass

Test Specifications: The laminated glass samples were evaluated in accordance with, and met the requirements of, the following:

ANSI Z97.1-2009, *Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test (Incl ANSI Z97.1 - 2009 Errata dated June 23, 2010)*

ASTM G 155-05, *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials*

Test Specimen Description: The test specimens were provided to Architectural Testing by Saint-Gobain Solar Gard LLC with nominal dimensions of 2" wide x 6" long x 1/8" thick, and were filmed on one side with a 1/8" edge deletion.

Test Procedures and Results: The individual test procedures and results are reported below.

**Accelerated Weathering (3,000 hours)
ANSI Z97.1/CPSC 16 CFR 1201, ASTM D2565/G155**

Test Procedure: The accelerated weathering was performed on the glass side of four samples exposed to the accelerated weathering in an Atlas Ci5000 Weatherometer (ICN 005154) utilizing Cycle 1 of ASTM D 2565 and an irradiance level of 0.35 W/m² at 340 nm wavelength. The conditioning chamber was controlled at 42 °C and the black panel thermometer was set to 63 °C. Relative humidity was maintained at 50 %. Borosilicate "S" type inner and outer filters were used to simulate normal daylight sun conditions.

**Adhesion Testing
ANSI Z97.1/CPSC 16 CFR 1201**

Test Procedure: Testing and evaluation was performed in accordance with ANSI Z97.1-2009, Sections 5.4.2.2.1.1 - 5.4.2.2.1.4. Specimens were prepared by an Architectural Testing, Inc. for testing with an Instron Model 3369 Universal Test Machine (ICN 005740) controlled at a rate of 12 inches per minute.

Test Results: Individual results of test performance are contained in the following tables:

Adhesion Testing Results (Controls)

Specimen ID	Average Peel Strength (lb _f /in)
Control #1	4.20
Control #2	4.76
Control #3	4.59
Control #4	5.97
Average	4.88

Adhesion Testing Results (Weathered)

Specimen ID	Average Peel Strength (lb _f /in)
Weathered #1	7.02
Weathered #2	6.94
Weathered #3	7.36
Weathered #4	7.16
Average	7.12

Test Procedures and Results: (Continued)

**Tensile Strength Testing
ANSI Z97.1/CPSC 16 CFR 1201**

Test Procedure: Testing and evaluation was performed in accordance with ANSI Z97.1-2009, Sections 5.4.2.2.2.1 - 5.4.2.2.2.4. Specimens were prepared by an Architectural Testing, Inc. for testing with an Instron Model 3369 Universal Test Machine (ICN 005740) controlled at a rate of 12 inches per minute.

Test Results: Individual results of test performance are contained in the following tables:

Tensile Strength Testing Results (Controls)

Specimen ID	Peak Load (lb_f)
Control #1	43.4
Control #2	37.8
Control #3	47.4
Control #4	53.5
Average	45.5

Tensile Strength Testing Results (Weathered)

Specimen ID	Peak Load (lb_f)
Weathered #1	54.8
Weathered #2	36.2
Weathered #3	34.8
Weathered #4	38.2
Average	41.0

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period.

Results obtained are tested values and were secured 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 specimens 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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Revision Log

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0	01/03/14	N/A	Original report issue