



Architectural Testing

TEST REPORT

Rendered to:

GOSEN CORPORATION

For:

WeatherReady™ and WeatherReady™ *Passport* Deck Boards

Report No.: 91189.01-119-19
Report Date: 06/05/09

PERFORMANCE TEST REPORT

Rendered to:

GOSSEN CORPORATION
2030 West Bender Road
Milwaukee, Wisconsin 53209

Report No: 91189.01-119-19
Test Dates: 05/07/09
Through: 05/26/09
Report Date: 06/05/09

1.0 General Information

1.1 Product

WeatherReady™ and WeatherReady™ *Passport* Deck Boards

1.2 Project Description

Architectural Testing, Inc. was contracted by Gossen Corporation to perform testing on their WeatherReady™ and WeatherReady™ *Passport* deck boards. The purpose of the testing is code compliance evaluation in accordance with the following criteria:

ASTM F 1679-04, Standard Test Method for Using a Variable Incidence Tribometer (VIT).

ASTM D 2394-05, Standard Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring

1.3 Qualifications

Architectural Testing, Inc. has demonstrated compliance with ANS/ISO/IEC Standard 17025 and is consequently accredited as a Testing Laboratory (TL-144) by International Accreditation Service, Inc. Architectural Testing, Inc. is accredited to perform all testing reported herein.

1.4 Product Description

WeatherReady™ deck boards are mono-extruded, solid core cellular PVC, rectangular profiles. WeatherReady™ *Passport* deck boards are co-extruded, solid core cellular PVC, rectangular profiles, with a capstock layer approximately 0.015 in thick. The manufactured product is intended for use as an exterior walking deck board. The mixture used in the processing of the product is extruded through a continuous feed system and is produced as a deck board measuring a nominal 1 in thick and 5-1/2 in wide with 3/16 in radius edges and a 3/8 in deep by 0.15 in high longitudinal grooves on each side. Both surfaces have an embossed simulated wood-grain pattern. Test specimens consisted of two different colored products identified by the manufacturer as follows: Sand and London Grey. All WeatherReady™ deck boards were Sand colored, and all WeatherReady™ *Passport* deck boards were London Grey. Reference Appendix A for product drawings that verify the overall dimensions and other pertinent information of the tested product.

1.5 Product Sampling

All specimens were provided by Gossen Corporation.

1.6 Witnessing

No witnesses from Gossen Corporation were present for testing conducted and reported herein.

1.7 Conditions of Testing

Unless otherwise indicated, all testing reported herein was conducted in a laboratory set to maintain temperature in the range of $68 \pm 4^{\circ}\text{F}$ and humidity in the range of $50 \pm 5\% \text{ RH}$. All test specimen materials were stored in the laboratory environment for no less than 40 hours prior to testing.

2.0 ASTM F 1679 Slip Testing

2.1 General

The purpose of this testing is to evaluate slip resistance of the WeatherReady™ and WeatherReady™ *Passport* deck boards for dry and wet conditions.

2.2 Test Specimens

Two sets of tests (dry and wet conditions) were conducted on the WeatherReady™ deck boards, and two sets of tests (dry and wet conditions) were conducted on the WeatherReady™ *Passport* deck boards. Boards were cut to 36 in nominal lengths for testing.

2.3 Test Procedure

Tests were performed on 05/07/09 using an *English XL* Tribometer equipped with a Neolite[®] test foot surface. The test foot material was prepared by gently sanding the surface with 180 grit silicon carbide paper on a flat block, making five circular passes prior to testing and after each dry slip reading was obtained. Testing was performed on the walking surface of each specimen in four directions, starting parallel with the extruded direction of the specimen (0°) and proceeding in subsequent 90° intervals. Slip readings were taken in each direction at randomly selected locations on each specimen. Test readings in the 0° and 180° directions were reported as longitudinal. Test readings in the 90° and 270° directions were reported as transverse. After dry testing was completed, each specimen was retested in a wet condition at new, randomly selected locations.

2.4 Test Results

WeatherReady™ Deck Boards

Dry Conditions						
Direction	Test #1	Test #2	Test #3	Test #4	Test #5	Average
0°	0.725	0.700	0.750	0.650	0.675	0.70
90°	0.725	0.600	0.750	0.750	0.700	0.71
180°	0.825	0.725	0.825	0.950	0.775	0.82
270°	1.000	0.900	0.825	0.900	0.875	0.90

Wet Conditions						
Direction	Test #1	Test #2	Test #3	Test #4	Test #5	Average
0°	0.675	0.675	0.600	0.525	0.675	0.63
90°	0.625	0.750	0.750	0.725	0.750	0.72
180°	0.550	0.675	0.700	0.675	0.625	0.65
270°	0.900	0.850	0.850	0.750	0.800	0.83

2.5 Test Results (Continued)

WeatherReady™ Passport Deck Boards

Dry Conditions						
Direction	Test #1	Test #2	Test #3	Test #4	Test #5	Average
0°	0.850	0.850	0.825	0.875	0.850	0.85
90°	0.850	0.850	0.800	0.850	0.900	0.85
180°	0.750	0.750	0.775	0.800	0.800	0.78
270°	0.825	0.825	0.900	0.850	0.850	0.85

Wet Conditions						
Direction	Test #1	Test #2	Test #3	Test #4	Test #5	Average
0°	0.650	0.700	0.600	0.650	0.600	0.64
90°	0.700	0.675	0.650	0.650	0.600	0.66
180°	0.600	0.600	0.600	0.650	0.675	0.63
270°	0.675	0.650	0.700	0.975	0.625	0.73

2.6 Test Summary

WeatherReady™ Deck Boards

Direction	Condition	Slip Index
Longitudinal	Dry	0.76
	Wet	0.64
Transverse	Dry	0.81
	Wet	0.78

WeatherReady™ Passport Deck Boards

Direction	Condition	Slip Index
Longitudinal	Dry	0.82
	Wet	0.64
Transverse	Dry	0.85
	Wet	0.70

3.0 ASTM D 2394 Slip Resistance Testing

3.1 General

The purpose of this testing is to evaluate slip resistance of the WeatherReady™ and WeatherReady™ *Passport* deck boards for dry and wet conditions.

3.2 Test Specimens

Two sets of tests (dry and wet conditions) were conducted on each of WeatherReady™ and WeatherReady™ *Passport* deck boards. Test specimens were cut to 9 in nominal lengths for testing.

3.3 Test Procedure

Testing was performed on 05/26/09 using the methods described by ASTM D 2394. The deck board was placed on a testing apparatus as prescribed by ASTM D 2394 and placed under a 26.28 lb sled assembly consisting of a 25 lb calibrated weight, a wooden cleated sled, and a 4-1/2 in by 4 in by 1/4 in thick prime grade leather tile. The leather tile was the sliding surface in direct contact with the test board. Prior to each slip load measurement in dry conditions, the leather surface was lightly sanded and dry-brushed clean of debris; the leather surface was sanded only once (prior to testing) for testing in wet conditions. The sanding process was accomplished with 150 grit coarse sandpaper, making five passes in diagonal directions. Testing was performed in a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN Y002011) with a 50 pound load cell, to which the sled was attached with a single steel cable. The sled was then pulled at a constant rate of crosshead motion equal to 0.05 inches per minute until the load to break the static friction was reached. The sled was then pulled at a constant rate of crosshead motion equal to 0.05 inches per minute until the load to break the static friction was reached. This value was recorded as the slip load. Tests were conducted parallel with the deck board (0 degrees), 90 degrees, 180 degrees, and 270 degrees on three dry and three wet specimens. All slip loads were recorded in the unit weight of pound and divided by the sled weight to determine the static coefficient of friction. Test readings in the 0° and 180° directions were reported as longitudinal. Test readings in the 90° and 270° directions were reported as transverse.

3.4 Test Results

WeatherReady™ Deck Boards

Dry Conditions	Direction	Specimen Number			Average	S.C.F. ¹
		#1	#2	#3		
	0°	22.99	24.89	24.42	24.10	0.92
	180°	21.09	21.54	21.50	21.38	0.81
	90°	21.04	24.13	25.37	23.51	0.89
	270°	20.79	21.42	22.04	21.42	0.81

¹ S.C.F. - Static coefficient of friction

Wet Conditions	Direction	Specimen Number			Average	S.C.F. ¹
		#1	#2	#3		
	0°	24.69	23.50	25.15	24.45	0.93
	180°	22.38	21.68	22.75	22.27	0.85
	90°	22.54	22.69	25.49	23.58	0.90
	270°	22.15	23.12	23.06	22.78	0.87

¹ S.C.F. - Static coefficient of friction

WeatherReady™ Passport Deck Boards

Dry Conditions	Direction	Specimen Number			Average	S.C.F. ¹
		#1	#2	#3		
	0°	16.95	16.73	18.03	17.24	0.66
	180°	16.09	15.58	15.94	15.87	0.60
	90°	16.79	18.49	18.36	17.88	0.68
	270°	15.37	16.61	17.05	16.34	0.62

¹ S.C.F. - Static coefficient of friction

Wet Conditions	Direction	Specimen Number			Average	S.C.F. ¹
		#1	#2	#3		
	0°	24.26	22.53	23.57	23.46	0.89
	180°	22.10	20.84	19.81	20.91	0.80
	90°	23.41	23.12	23.49	23.34	0.89
	270°	22.67	21.34	23.11	22.38	0.85

¹ S.C.F. - Static coefficient of friction

4.0 Closing Statement

Detailed drawings, data sheets, representative samples of test specimens, a copy of this test report, and all other supporting evidence 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, said materials shall be discarded without notice, and the service life of this report by Architectural Testing, Inc. shall expire. Results obtained are tested values and were secured using the designated test methods. This report neither constitutes certification of this product nor expresses an opinion or endorsement by this laboratory; it is the exclusive property of the client so named herein and relates only to the tested specimens. 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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Structural Systems Testing

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MCH:mch/nlb

Attachments (pages)

Appendix A - Drawings (2)

Appendix B - Photographs (3)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	06/05/09	N/A	Original report issue

APPENDIX A

Drawings

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

SHOW SURFACE

EMBOSSED SURFACE

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 91189.01-119-19

Date 6/03/09 Tech MCH AREA GAUGE - 6.982 BP

SIGNATURES	DATE	TOLERANCES			1" X 5" DECK BOARD <i>Weather Ready</i>
		<input type="checkbox"/> DOWN TOLERANCE <small>DOWN TOLERANCE +.375 OVER A DISTANCE OF 8"</small>	<input type="checkbox"/> ALL TOLERANCES MEASURED IN INCHES	<small>2000 W. Bander Rd. Milwaukee, WI 53208 (414) 220-9800</small>	<small>SIZE 2</small> <small>SCALE 1/2"=1'</small> <small>DRAWING P-0888</small> <small>DRAWN BY K. KATZNER</small> <small>REV A</small>
<small>CUSTOMER APPROVAL</small> 		<input type="checkbox"/> 80% TOLERANCE <small>80% TOLERANCE -.150 OVER A DISTANCE OF 8"</small>	<input type="checkbox"/> ALL TOLERANCES +/- .000 UNLESS OTHERWISE SPECIFIED		<small>DATE 05-20-2007</small>
<small>FINAL APPROVAL</small> 	<u>6/3/09</u>	<input type="checkbox"/> 0% TOLERANCE <small>0% TOLERANCE +.200</small>			<small>THE STRENGTH AND SOUNDNESS OF ANY PRODUCT OF ECHOLS GROUP IS UNWARRANTED UNLESS PROPERLY INSTALLED AND IS PROVIDEDLY VARYING FROM THE COMPANY</small>

		REVISIONS																							
		REV	DESCRIPTION	DATE	APPROVED																				
		<p>Architectural Testing</p> <p>Test sample complies with these details. Deviations are noted.</p> <p>Report# <u>91189.01-119-19</u></p> <p>Date <u>6/03/09</u> Tech <u>Wett</u></p> <p style="font-size: small;">CELLULAR AREA CALCS = 5.470 IN² RIGID AREA CALCS = .185 IN²</p>																							
SIGNATURES		TOLERANCES																							
DESIGN	DATE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"> </td> <td style="width: 50%; text-align: center;"> ALL TOLERANCES TO DIMENSIONS IN INCHES </td> </tr> <tr> <td style="text-align: center;"> DIMENSIONS ±.005" OVER DISTANCE OF 0" </td> <td style="text-align: center;"> ALL TOLERANCES ±.005" OVER DISTANCE OF 0" </td> </tr> <tr> <td style="text-align: center;"> DIMENSIONS ±.005" OVER </td> <td></td> </tr> </table>			ALL TOLERANCES TO DIMENSIONS IN INCHES	DIMENSIONS ±.005" OVER DISTANCE OF 0"	ALL TOLERANCES ±.005" OVER DISTANCE OF 0"	DIMENSIONS ±.005" OVER		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"> SIZE P </td> <td style="width: 50%; text-align: center;"> SCALE 1:8:1 </td> <td style="width: 50%; text-align: center;"> DRAWING P-0868 </td> <td style="width: 50%; text-align: center;"> DRAWN BY K. KAUFNER </td> <td style="width: 50%; text-align: center;"> REV </td> </tr> <tr> <td colspan="2">QUOTE</td> <td colspan="2">DATE</td> <td style="text-align: center;">A</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">US-20-2307</td> <td></td> </tr> </table>	SIZE P	SCALE 1:8:1	DRAWING P-0868	DRAWN BY K. KAUFNER	REV	QUOTE		DATE		A			US-20-2307		
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		US-20-2307																							
CUSTOMER APPROVAL																									
FINAL APPROVAL	4/27/09																								

1" X 5 1/2" CAPPED DECK BOARD

Passport

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APPENDIX B

Photographs

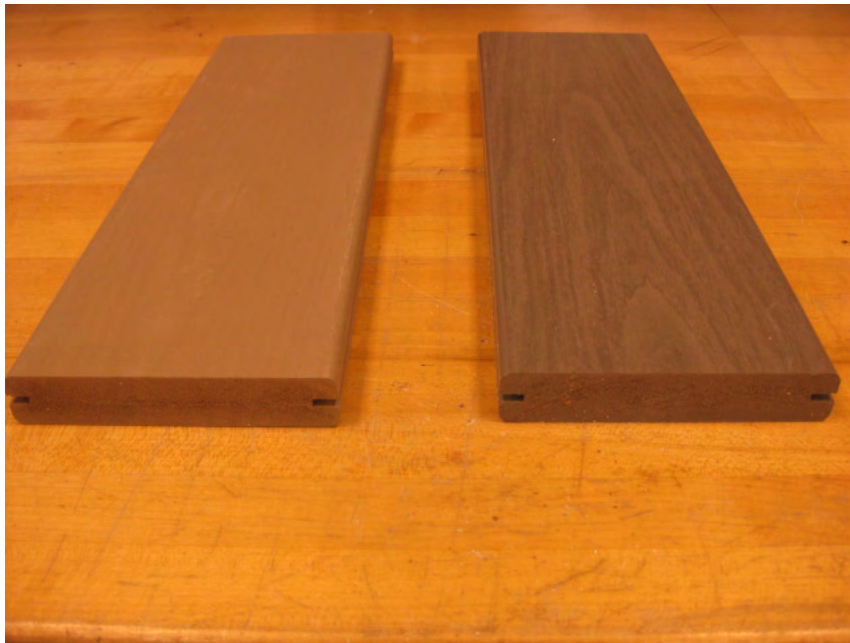


Photo No. 1
WeatherReady™ (Left) and WeatherReady™ *Passport* (Right) deck boards



Photo No. 2
ASTM F 1679 Test Setup (Dry Conditions)



Photo No. 3
ASTM D 2394 Test Setup (Dry Conditions)