

NORX, LLC TEST REPORT

SCOPE OF WORK ICC-ES AC174 AND AC524 COMPLIANCE EVALUATION ON COMPOSITE DECKING AND CLADDING

REPORT NUMBER P0941.01-119-19 R0

TEST DATES 09/08/23 - 04/12/24

ISSUE DATE 08/08/24

PAGES 83

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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

REPORT ISSUED TO

NORX, LLC 20807 Biscayne Blvd. Unit 304 Aventura, FL 33180

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Norx, LLC to perform testing in accordance with ICC-ES[™] AC174 on their composite decking and cladding products. This report is in conjunction with Intertek Report No.'s G104973944RK-001, which includes the test plan, G105164339, which includes sampling information, P0941.03-109-40 through P0941.06-109-40, which include cladding wind load performance test results, and P0941.07-121-24 and P0941.08-121-24, which includes flame spread test results. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

Intertek B&C in York, Pennsylvania has demonstrated compliance with ISO/IEC International Standard 17025 and is consequently accredited as a Testing Laboratory (TL-144) by International Accreditation Service, Inc. (IAS). Intertek B&C is accredited to perform all testing reported herein.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity. Intertek will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C: Scott T. Gladfelter Virgal T. Mickley, Jr., P.E. COMPLETED BY: **REVIEWED BY:** TITLE: Senior Project Engineer Senior Staff Engineer TITLE: **SIGNATURE: SIGNATURE:** DATE: 08/08/24 08/08/24 DATE: STG:vtm/aas

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SECTION 2

SUMMARY OF TEST RESULTS

ICC-E	S™ AC174 - DECKING	RESULTS
3.4	Deck Board Flexural Tests	Paris Solid - Avg. Mu = 2894 in·lb
	Flexural Properties	Avg. EI = 169000 lb·in ²
		Paris Grooved - Avg. Mu = 2727 in·lb
		Avg. El = 172000 lb·in ²
		Rio Solid - Avg. Mu = 1726 in·lb
		Avg. EI = 153800 lb·in ²
		<i>Rio</i> Grooved - Avg. Mu = 1830 in lb
		Avg. El = 155400 lb·in ²
3.4	Deck Board Flexural Tests	Paris and Rio Solid and Grooved:
4.1.3	Span/Load Rating with No	Span/Load Rating = 16/100
2.4	Residential End-Use Limitation	16.0 in Span; 100 pst Live Load
3.4	Deck Board Flexural Tests	Paris and Rio Solid: 7.0 in Max. Span (2-Span
4.1.3	Stair Tread With No Residential	Application)
36	Temperature Effect	Paris Solid - 26% Reduction / Bending Strength (Mu)
5.0		37% Reduction / Bending Stiffness (FI)
		<i>Rio</i> Solid - 27% Reduction / Bending Strength (Mu)
		44% Reduction / Bending Stiffness (EI)
3.6	Moisture Effect	See ICC-ES™ AC524 Section 3.4
3.7	UV Resistance	5% Reduction / Bending Strength (Apparent MOR)
		7% Reduction / Bending Stiffness (Apparent MOE)
3.8	Freeze-Thaw Resistance	See ICC-ES™ AC524 Section 3.6
3.10	Flame Spread	Flame Spread Index, FSI = 80
		- See Intertek B&C Report No. P0941.07-121-24
3.11	Duration of Load	No evidence of tertiary creep and no failures
4.0	Deck Board Performance	91% Average Recovery
5.4	ASTM D7032, Creep-Recovery	Average Total Deflection = 0.097 in
		Max. Unrecovered Deflection = 0.015 in
4.0	Deck Board Performance	<i>Rio</i> solid deck board with two #8 x 1-5/8" stainless steel
5.5	ASTM D7032/ASTM D1761	screws per Joist at 16.0 Span
	Mechanical Fastener by Pull	Allowable Fastener Capacity / Pull Through
	Inrough and Withdrawai	= 164 ID/SCREW
	Resistance	- 72 lb/ccrow
		- 75 ID/SCIEW Allowable Unlift Canacity - 220 nsf (based on NDS
		Strength)
10	Deck Board Performance ASTM	Big grooved deck board with Plastic T-Clip hidden
4.0	F330 Mechanical Fastener by	fastener system with one #8 by 1-5/8" stainless steel
	Wind Unlift Resistance	screw: 16.0 Span
		Allowable Uplift Capacity = 145 psf
		Rio grooved deck board with Stainless Steel T-Clin
		hidden fastener system with one #8 by 1-5/8" stainless
		steel screw; 16.0 Span
		Allowable Uplift Capacity = 78 psf



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ICC-E	ES™ AC524 - CLADDING	RESULTS
3.3	Deck Board Flexural Tests	Los Angeles - Avg. Mu = 828 in·lb
	Flexural Properties	Avg. El = 39290 lb·in ²
	-	London - Avg. Mu = 3099 in·lb
		Avg. EI = 217600 lb·in ²
		<i>New York</i> - Avg. Mu = 534 in·lb
		Avg. EI = 53280 lb·in ²
		Rome - Avg. Mu = 3060 in·lb
		Avg. EI = 206300 lb·in ²
3.4	Temperature Effect	See ICC-ES™ AC174 Section 3.6
3.4	Moisture Effect	16% Reduction / Bending Strength (Mu)
		24% Reduction / Bending Stiffness (EI)
3.5	UV Resistance	No Change / Bending Strength (Apparent MOR)
		2% Increase / Bending Stiffness (Apparent MOE)
3.6	Freeze-Thaw Resistance	2% Reduction / Bending Strength (Mu)
		2% Reduction / Bending Stiffness (EI)
3.8	Wind Resistance	London Collection, Vertical Cladding
		Max Sustained Negative = 113.3 psf
		Max Sustained Positive = 150.0 psf
		See Intertek B&C Report No. P0941.03-109-40
		Los Angeles Collection, Horizontal Cladding
		Max Sustained Negative = 138.3 psf
		Max Sustained Positive = 200.0 psf
		See Intertek B&C Report No. P0941.04-109-40
		New York Collection, Horizontal Cladding
		Max Sustained Negative = 196.7 psf
		Max Sustained Positive = 200.0 psf
		See Intertek B&C Report No. P0941.05-109-40
		Rome Collection, Vertical Cladding
		Max Sustained Negative = 121.7 psf
		Max Sustained Positive = 150.0 psf
		See Intertek B&C Report No. P0941.06-109-40
3.9	Flame Spread	Flame Spread Index, FSI = 85
		- See Intertek B&C Report No. P0941.08-121-24



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SECTION 3

TEST METHODS

The purpose of the testing was code compliance evaluation in accordance with the following criteria:

ICC-ES[™] AC174 (approved January 2012, editorially revised April 2021), Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails)

ICC-ES[™] AC524 (approved June 2021), Acceptance Criteria for Wood-Plastic Composite Products Used as Exterior Siding (unaccredited)

AC174 and AC524 were developed by the ICC Evaluation Service, LLC. (ICC-ES[™]) as acceptance criteria to evaluate compliance with the following building codes:

2021 International Building Code[®], International Code Council

2021 International Residential Code[®], International Code Council

The specimens were evaluated in accordance with the following:

ANSI/AWC NDS-2020, National Design Specification (NDS) for Wood Construction

ASTM D790-17, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

ASTM D1761-20, Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials

ASTM D2565-16, Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications

ASTM D5206-19, Standard Test Method for Windload Resistance of Rigid Plastic Siding

ASTM D6109-19, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastic Lumber and Related Products

ASTM D7031-11 (Reapproved 2019), Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products

ASTM D7032-14, Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, and Handrails

ASTM E84-23b, Standard Test Method for Surface Burning Characteristics of Building Materials

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



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SECTION 4

MATERIAL SOURCE/INSTALLATION

The specimens were selected by Intertek B&C personnel. The specimens were tagged prior to shipment on 02/14/23, (Reference Intertek B&C Test Specimen Selection Report No. G105164339, dated 02/14/23). Representative samples of the test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Jordan M. Gault	Intertek B&C
Scott T. Gladfelter	Intertek B&C
Adam J. Schrum	Intertek B&C
Shawn E. Beamer	Intertek B&C
Scott A. McMaster	Intertek B&C

SECTION 6

GENERAL DESCRIPTION

Paris and *Rio* deck boards are an extruded composite material composed of part plastic and part wood fiber. 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 1/8 in radius edges. The top surface has an embossed simulated wood-grain pattern. Grooved specimens included a 1/4 in high by 5/16 deep groove on each edge. *Rio* specimens included three, 3/8 in high by 1-1/8 in wide scallops on the bottom surface. The *Paris* specimens consisted of four different colored products identified by the manufacturer as follows: Louvre, Eiffel, Elysees, and Triomphe. The *Rio* specimens consisted of four different colored products identified by the manufacturer as follows: Copacabana, Corcovado, Ipanema, and Leblon.

Los Angeles, London, New York, and Rome cladding boards are an extruded composite material composed of part plastic and part wood fiber. The manufactured product is intended for use as an exterior cladding board. The mixture used in the processing of the product is extruded through a continuous feed system and is produced as a tongue and groove board measuring a nominal 1/2 in thick and 5-1/2 in wide (*Los Angeles*), 1 in thick and 8-1/2 in wide (*London*), 13/16 in thick and 6-1/8 in wide (*New York*), or 1 in thick and 7 in wide (*Rome*). The *Los Angeles* specimens consisted of two different colored products identified by the manufacturer as follows: Hollywood and Santa Monica. The *London* specimens consisted of two different colored products identified by the manufacturer as follows: Hyde Park and Mayfair. The *New York* specimens consisted of two different colored products identified by the manufacturer as follows: Brooklyn and Empire State.



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The *Rome* specimens consisted of two different colored products identified by the manufacturer as follows: Colosseum and Pantheon.

See photographs in Section 23 and drawings are included in Section 24 to verify the overall dimensions and other pertinent information of the tested product, its components, and any constructed assemblies.

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

SECTION 7

TEMPERATURE EFFECT

Re: ICC-ES[™] AC174, Section 3.6

General

The purpose of this testing was to evaluate the effect of temperature conditions on the performance of the product. Samples of manufactured products were subjected to specified exposures of high temperature and low temperature. Flexural tests were performed on each sample set and compared to identical tests performed on a set of control specimens.

Test Specimens

Six sets of ten full cross section *Paris* and *Rio* decking specimens were cut to 20 in lengths from production length solid deck boards and labelled for high temperature (125°F), low temperature (-20°F), and control.

Test Procedure

Testing was performed using the methods described by ASTM D6109. Ten *Paris* and ten *Rio* decking specimens were pre-conditioned in an oven at 125°F for a minimum period of five hours prior to testing. Ten *Paris* and ten *Rio* decking specimens were pre-conditioned in a freezer at - 20°F for a minimum period of five hours prior to testing. Control specimens were conditioned for a minimum of 40 hours at standard laboratory conditions. Testing was performed in a computer-monitored and -controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine with a four point loading arrangement. An insulated enclosure was used to condition and maintain the air temperature at the specified conditions during the flexural tests. The specimens were supported on 5/8 in radius support noses. The loading span was one-third of the bending span and utilized 5/8 in radius loading noses. Mid-span deflection was measured with a 2-inch travel Instron[®] Model 3540-200T-ST deflectometer. See photographs in Section 23 for test setup.



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Test Results

Stiffness properties were derived from a least square fit of load / deflection data between 10% and 40% of the maximum test load. Peak load and Mu were defined at ultimate bending strength. Reported peak loads were not limited by an outer surface strain of 0.03 in/in as referenced in Section 10.1.7 of ASTM D6109.

Test Series No. 1 - Paris Solid Decking

Control Set (Standard Lab Conditions)

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min Test Date: 09/29/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	El
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)
1	2.76	1104	2219	2944	161300
2	2.74	1020	2269	2720	164900
3	2.73	1047	2267	2792	164800
4	2.77	1102	2372	2939	172400
5	2.74	1087	2237	2899	162600
6	2.75	1094	2227	2917	161800
7	2.73	1087	2252	2899	163700
8	2.77	1161	2248	3096	163400
9	2.77	1143	2259	3048	164200
10	2.76	1093	2358	2915	171400
	Minimum:	1020	2219	2720	161300
	Maximum:	1161	2372	3096	172400
	Average:	1094	2271	2917	165100
	Standard Deviation:	41	52	108	3805

2.3%

3.7%

2.3%

Coefficient of Variation: 3.7%



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High Temperature Set (Tested at 125°F)

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min

Test Date: 10/18/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	EI
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)
1	2.64	804	1487	2144	108100
2	2.64	782	1439	2085	104600
3	2.64	777	1420	2072	103200
4	2.76	818	1406	2181	102200
5	2.76	811	1474	2163	107100
6	2.76	827	1451	2205	105500
7	2.64	800	1412	2133	102600
8	2.64	796	1403	2123	102000
9	2.64	817	1423	2179	103400
10	2.76	851	1504	2269	109400
	Minimum:	777	1403	2072	102000
	Maximum:	851	1504	2269	109400
	Average:	808	1442	2155	104800
	Standard Deviation:	22	36	58	2621

2.5%

2.7%

2.5%

Coefficient of Variation: 2.7%

Low Temperature Set (Tested at -20°F)

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min Test Date: 10/16/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	El
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)
1	2.64	1400	2912	3733	211600
2	2.76	1257	2911	3352	211600
3	2.64	1314	2781	3504	202100
4	2.64	1331	2840	3549	206400
5	2.64	1344	2866	3584	208300
6	2.76	1407	2690	3752	195500
7	2.64	1347	2805	3592	203900
8	2.76	1282	2835	3419	206100
9	2.76	1520	3097	4053	225100
10	2.64	1515	3008	4040	218600
	Minimum:	1257	2690	3352	195500
	Maximum:	1520	3097	4053	225100
	Average:	1372	2874	3658	208900
	Standard Deviation:	90	116	239	8409
	Coefficient of Variation:	6.5%	4.0%	6.5%	4.0%



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Control Set (Standard Conditions) vs. High Temperature Set (125°F)

	Mu (in·lb)			El (lb·in²)		
	CTRL	HIGH TEMP	% DIFF	CTRL	HIGH TEMP	% DIFF
Average:	2917	2155	-26.1%	165100	104800	-36.5%

Control Set (Standard Conditions) vs. Low Temperature Set (-20°F)

	Mu (in·lb)			El (lb·in²)		
	CTRL	HIGH TEMP	% DIFF	CTRL	HIGH TEMP	% DIFF
Average:	2917	3658	25.4%	165100	208900	26.6%

Test Series No. 2 - *Rio* Solid Decking

Control Set (Standard Lab Conditions)

Support Span = 16.0 in and Crosshead Speed = 0.52 in/min Test Date: 09/29/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	EI		
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)		
1	2.13	603	2219	1608	161300		
2	2.15	645	2215	1720	161000		
3	2.15	598	2162	1595	157200		
4	2.14	653	2274	1741	165300		
5	2.15	579	2223	1544	161600		
6	2.15	642	2192	1712	159400		
7	2.09	686	2135	1829	155200		
8	2.09	696	2110	1856	153400		
9	2.14	642	2281	1712	165800		
10	2.15	620	2219	1653	161300		
	Minimum:	579	2110	1544	153400		
	Maximum:	696	2281	1856	165800		
	Average:	636	2203	1697	160200		
	Standard Deviation:	37	55	100	3990		
	Coefficient of Variation:	5.9%	2.5%	5.9%	2.5%		



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High Temperature Set (Tested at 125°F)

Support Span = 16.0 in and Crosshead Speed = 0.52 in/min

Test Date: 10/18/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	El
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)
1	2.04	482	1248	1285	90710
2	2.04	460	1394	1227	101400
3	2.16	469	1309	1251	95170
4	2.04	454	1330	1211	96680
5	2.04	514	1212	1371	88130
6	2.04	439	1233	1171	89630
7	2.16	465	1075	1240	78130
8	2.04	432	1222	1152	88820
9	2.04	472	1087	1259	79010
10	2.04	445	1270	1187	92290
	Minimum:	432	1075	1152	78130
	Maximum:	514	1394	1371	101400
	Average:	463	1238	1235	90000
	Standard Deviation:	24	100	63	7255

8.1%

5.1%

8.1%

Coefficient of Variation: 5.1%

Low Temperature Set (Tested at -20°F)

Support Span = 16.0 in and Crosshead Speed = 0.52 in/min Test Date: 10/16/23

SPECIMEN	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE	Mu	El
ID	(lb)	(lb)	(lbf/in)	(in·lb)	(lb∙in²)
1	2.04	703	2554	1875	185600
2	2.04	685	2584	1827	187900
3	2.04	696	2555	1856	185800
4	2.16	677	2661	1805	193400
5	2.04	757	2591	2019	188300
6	2.04	624	2619	1664	190400
7	2.04	741	2622	1976	190600
8	2.16	716	2766	1909	201100
9	2.04	743	2768	1981	201200
10	2.04	730	2862	1947	208000
	Minimum:	624	2554	1664	185600
	Maximum:	757	2862	2019	208000
	Average:	707	2658	1886	193200
	Standard Deviation:	39	105	105	7635
	Coefficient of Variation:	5.6%	4.0%	5.6%	4.0%



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Control Set (Standard Conditions) vs. High Temperature Set (125°F)

	Mu (in·lb)			El (lb·in ²)		
	CTRL	HIGH TEMP	% DIFF	CTRL	HIGH TEMP	% DIFF
Average:	1697	1235	-27.2%	160200	90000	-43.8%

Control Set (Standard Conditions) vs. Low Temperature Set (-20°F)

	Mu (in·lb)			EI (Ib·in²)			
	CTRL HIGH TEMP		% DIFF	CTRL HIGH TEMP		% DIFF	
Average:	1697	1886	11.1%	160200	193200	20.7%	

SECTION 8

MOISTURE EFFECT

Re: ICC-ES[™] AC524, Section 3.4

General

The purpose of the following tests was to evaluate the effect of moisture conditions on the performance of the product. Samples of manufactured products were subjected to a minimum of 48 hours submersion in water. Flexural tests were then performed on the moisture-soaked specimens, and test results were compared to identical tests performed on a match-marked set of control specimens.

Test Specimens

Two sets of ten full cross section *New York* cladding specimens were cut to 20 in lengths from production length cladding boards and labelled for moisture effect testing.

Test Procedure

Testing was performed using the methods described by ASTM D6109. The specimens were submerged in water for a minimum of 48 hours prior to flexural testing. Testing commenced immediately upon removal from the water and was performed in a computer-monitored and - controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine with a four point loading arrangement. The specimens were supported on 5/8 in radius support noses. The loading span was one-third of the bending span and utilized 5/8 in radius loading noses. Midspan deflection was measured with a 2-inch travel Instron[®] Model 3540-200T-ST deflectometer. See photographs in Section 23 for test setup.



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Test Results

Stiffness properties were derived from a least square fit of load/deflection data between 10% and 40% of the maximum test load. Peak load and Mu were defined at ultimate bending strength. Reported peak loads were not limited by an outer surface strain of 0.03 in/in as referenced in Section 10.1.7 of ASTM D6109.

Control Set (Standard Lab Conditions) Support Span = 16.0 in and Crosshead Speed = 0.55 in/min Test Date: 12/28/23

SPECIME	N	WEIGHT PER LINEAL FOOT	PEAK LOAD	SLOPE (lbf/in)	Mu (in·lb)	El (lb·in²)
ID	COLOR	(lb)	(lb)			
1		1.24	213	658	568	47870
2		1.23	203	609	541	44250
3	Empire State	1.24	209	617	557	44860
4	-	1.24	212	632	565	45930
5		1.24	208	643	555	46770
6		1.21	205	601	547	43710
7		1.21	203	620	541	45070
8	Brooklyn	1.23	205	597	547	43410
9		1.19	196	563	523	40900
10		1.20	204	554	544	40270
		Minimum:	196	554	523	40270
Maximum:			213	658	568	47870
Average:			206	609	549	44300
	Standard Deviation:			33	13	2389
	Coefficier	nt of Variation:	2.4%	5.4%	2.4%	5.4%



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Moisture Effect Set

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min

est Date: 12/28/23									
SPECIME	N	WEIGHT PER	PEAK	SLOPE	Mu	El			
		LINEAL FOOT	LOAD	(lbf/in)	(in·lb)	(lb∙in²)			
D	COLOR	(lb)	(lb)						
1		1.27	172	469	459	34060			
2		1.27	174	450	464	32680			
3	Empire State	1.27	182	480	485	34860			
4		1.27	184	483	491	35110			
5		1.26	167	466	445	33890			
6		1.25	170	460	453	33470			
7		1.25	171	442	456	32110			
8	Brooklyn	1.28	176	496	469	36080			
9		1.24	166	447	443	32530			
10		1.24	169	455	451	33040			
		Minimum:	166	442	443	32110			
Maximum: Average: Standard Deviation:			184	496	491	36080			
			173	465	462	33780			
			6	17	16	1270			
	Coefficient of Variation:			3.8%	3.5%	3.8%			

Control Set (Standard Conditions) vs. Moisture Set

SPECIM	EN	Mu (in·	b)		El (lb·in ²		
ID	COLOR	CTRL	MOISTURE	% DIFF	CTRL	MOISTURE	% DIFF
1		568	459	-19.2%	47870	34060	-28.8%
2		541	464	-14.3%	44250	32680	-26.1%
3	Empire State	557	485	-12.9%	44860	34860	-22.3%
4		565	491	-13.2%	45930	35110	-23.6%
5		555	445	-19.7%	46770	33890	-27.5%
6		547	453	-17.1%	43710	33470	-23.4%
7		541	456	-15.8%	45070	32110	-28.8%
8	Brooklyn	547	469	-14.2%	43410	36080	-16.9%
9		523	443	-15.3%	40900	32530	-20.5%
10		544	451	-17.2%	40270	33040	-18.0%
Minimum:		523	443	-19.7%	40270	32110	-28.8%
Maximum:		568	491	-12.9%	47870	36080	-16.9%
	Average:	549	462	-15.9%	44300	33780	-23.6%



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 9

ULTRAVIOLET RESISTANCE

Re: ICC-ES[™] AC174, Section 3.7 and ICC-ES[™] AC524, Section 3.5

General

The purpose of the test was to evaluate the effect of weathering on the performance of the product. Material samples were taken from manufactured products and subjected to specified exposures of artificial weathering. Flexural tests were performed on the artificially weathered sample set and compared to identical tests performed on a set of control specimens (non-weathered).

Test Specimens

Twelve sets of ten to twenty test specimens were cut from production length solid deck and cladding boards and labeled as control (standard conditions) and artificially weathered specimens. Specimens were approximately 1 in wide by 10 in long by 1/2 in thick or product thickness.

Test Procedure

Artificial Weathering Procedure

Artificially weathered specimens were subjected to 2000 hours of Xenon-Arc exposure from 10/13/23 through 01/24/24 in an Atlas Ci4000 or Ci5000 Xenon Weather-Ometer[®] in accordance with ASTM D2565 using Test Cycle 1. Exposure conditions were as follows:

Cycle: 102 minutes of light only followed by 18 minutes of light with water spray Black Panel Temp: $63 \pm 2^{\circ}$ C Irradiance: $0.35 \pm 0.02 \text{ W/m}^2$ at 340 nm

Flexural Test Procedure

Flexural testing was performed using the methods described by Procedure A of ASTM D790. Specimens were conditioned at standard laboratory conditions for a minimum of 40 hours prior to flexural testing. All specimens were individually tested in a computer-monitored and - controlled Instron Model 3369 Universal Testing Machine using a three-point loading setup. Support and loading noses were 1/8 in radius steel rods. Deflections were continuously recorded during the loading process using the crosshead movement of the test machine. Artificially weathered specimens were tested with the exposed surface down (in tension). See photographs in Section 23 for individual test setups.

TEST SERIES	1	2	3	4	5	6
SUPPORT SPAN (in)	8	7.5	8	2.5	4.5	2.5
LOADING RATE (in/min)	0.213	0.201	0.213	0.066	0.113	0.071



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Results

Stiffness properties were derived from a least square fit of load/deflection data between 10% and 40% of the maximum test load. Peak load and MOR were defined at ultimate bending strength. Reported peak loads were not limited by an outer surface strain of 0.05 in/in as referenced in Section 10.1.8 of ASTM D790.

Test Series No. 1 - Paris Decking

SPECIMEN	COLOR	WIDTH	DEPTH	PEAK LOAD	APPARENT	1
ID		(in)	(in)	(lb)	MOR (psi)	MOE (psi)
4-PAR-S-D		0.998	0.494	101.32	4992	530100
4-PAR-S-D		0.995	0.504	101.01	4796	507500
8-PAR-S-D	Elysees	0.997	0.505	103.12	4867	502300
8-PAR-S-D		1.005	0.497	100.34	4850	469600
12-PAR-S-D		1.001	0.495	96.40	4716	465300
2-PAR-S-R		1.002	0.503	100.65	4764	483400
2-PAR-S-R		1.001	0.492	93.34	4622	502000
2-PAR-S-R	Eiffel	0.990	0.500	102.27	4958	490900
2-PAR-S-R		0.990	0.494	99.02	4918	515000
2-PAR-S-R		1.000	0.498	99.81	4829	494900
1-PAR-S-B		0.998	0.498	97.52	4728	497200
5-PAR-S-B		1.000	0.496	100.03	4879	490900
9-RAR-S-B	Triomphe	1.000	0.498	106.14	5136	540200
11-PAR-S-B		0.996	0.502	99.75	4769	496100
13-PAR-S-B		1.000	0.502	104.84	4992	490700
3-PAR-S-G		0.996	0.500	103.60	4993	520200
3-PAR-S-G		0.992	0.492	101.43	5069	507100
7-PAR-S-G	Louvre	0.996	0.501	104.25	5024	497000
7-PAR-S-G		0.997	0.500	101.79	4901	516900
7-PAR-S-G		0.982	0.501	96.30	4688	491500
				Minimum:	4622	465300
				Maximum:	5136	540200
Average:					4875	500400
			Standa	rd Deviation:	137	18270
		C	oefficient	of Variation:	2.8%	3.7%

Control Set (Non-Weathered) Test Date: 01/25/24

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01/25/24 **SPECIMEN** COLOR WIDTH DEPTH **PEAK LOAD APPARENT¹** ID (in) (in) (lb) **MOR** (psi) **MOE (psi)** 0.998 0.513 92.65 4233 4-PAR-S-D 424800 4-PAR-S-D 1.017 0.507 94.63 4344 437400 8-PAR-S-D Elysees 1.002 0.504 91.54 4316 466000 8-PAR-S-D 1.001 0.502 98.02 4663 457800 4392 12-PAR-S-D 0.998 0.510 95.01 431100 2-PAR-S-R 0.996 0.498 99.54 4836 467000 2-PAR-S-R 0.996 0.496 93.78 4593 483100 Eiffel 93.99 4575 2-PAR-S-R 0.990 0.499 474900 1.004 0.498 96.92 4671 504800 2-PAR-S-R 4859 2-PAR-S-R 0.982 0.499 99.01 482100 1-PAR-S-B 0.996 0.503 98.54 4693 474400 0.994 0.497 98.43 4811 455800 5-PAR-S-B 9-RAR-S-B Triomphe 1.000 0.496 93.32 4552 473100 11-PAR-S-B 0.997 0.501 98.00 4699 487400 13-PAR-S-B 1.001 0.498 101.90 4926 469500 1.001 0.502 97.69 4647 475900 3-PAR-S-G 1.001 99.01 4710 3-PAR-S-G 0.502 466500 7-PAR-S-G 0.998 0.498 96.05 4657 466300 Louvre 7-PAR-S-G 1.000 0.498 95.91 4641 449200 7-PAR-S-G 4739 1.001 0.496 97.25 497500 Minimum: 4233 424800 4926 Maximum: 504800 4628 467200 Average: Standard Deviation: 185 20490 Coefficient of Variation: 4.0% 4.4%

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Match-Marked Specimen Comparison Data

Control Set vs. Artificially Weathered Set

SPECIMEN		MOR (psi)			MOE (psi)		
ID	COLOR	CONTROL	ARTIFICIALLY	% DIFF	CONTROL	ARTIFICIALLY	% DIFF
			WEATHERED			WEATHERED	
4-PAR-S-D		4992	4233	-15.2%	530100	424800	-19.9%
4-PAR-S-D		4796	4344	-9.4%	507500	437400	-13.8%
8-PAR-S-D	ies	4867	4316	-11.3%	502300	466000	-7.2%
8-PAR-S-D	lyse	4850	4663	-3.9%	469600	457800	-2.5%
12-PAR-S-D	EI	4716	4392	-6.9%	465300	431100	-7.4%
2-PAR-S-R		4764	4836	1.5%	483400	467000	-3.4%
2-PAR-S-R		4622	4593	-0.6%	502000	483100	-3.8%
2-PAR-S-R		4958	4575	-7.7%	490900	474900	-3.3%
2-PAR-S-R	ffel	4918	4671	-5.0%	515000	504800	-2.0%
2-PAR-S-R	Ē	4829	4859	0.6%	494900	482100	-2.6%
1-PAR-S-B		4728	4693	-0.8%	497200	474400	-4.6%
5-PAR-S-B	e	4879	4811	-1.4%	490900	455800	-7.2%
9-RAR-S-B	hdr	5136	4552	-11.4%	540200	473100	-12.4%
11-PAR-S-B	ion	4769	4699	-1.5%	496100	487400	-1.8%
13-PAR-S-B	ιŢ	4992	4926	-1.3%	490700	469500	-4.3%
3-PAR-S-G		4993	4647	-6.9%	520200	475900	-8.5%
3-PAR-S-G		5069	4710	-7.1%	507100	466500	-8.0%
7-PAR-S-G	P	5024	4657	-7.3%	497000	466300	-6.2%
7-PAR-S-G	vno	4901	4641	-5.3%	516900	449200	-13.1%
7-PAR-S-G	Γc	4688	4739	1.1%	491500	497500	1.2%
М	inimum:	4622	4233	-15.2%	465300	424800	-19.9%
Ma	aximum:	5136	4926	1.5%	540200	504800	1.2%
l l	Average:	4875	4628	-5.0%	500400	467200	-6.5%



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Series No. 2 - Rio Solid Decking

Control Set (Non-Weathered)

Test Date: 01/25/24

SPECIMEN ID	COLOR	WIDTH	DEPTH	PEAK LOAD	APPARENT ¹	!
		(in)	(in)	(lb)	MOR (psi)	MOE (psi)
4-RIO-S-R		1.005	0.466	84.25	4343	617200
8-RIO-S-R		1.001	0.467	85.02	4382	602100
12-RIO-S-R	Ipanema	1.003	0.467	85.15	4379	638200
36-RIO-S-R		1.005	0.471	82.29	4152	590000
37-RIO-S-R		1.002	0.460	82.60	4383	616900
3-RIO-S-O		1.001	0.471	86.94	4404	575400
7-RIO-S-O		1.001	0.468	89.34	4584	607000
11-RIO-S-O	Leblon	1.003	0.456	84.02	4532	636200
34-RIO-S-O		1.004	0.470	93.81	4759	620400
35-RIO-S-O		1.001	0.470	85.82	4366	590100
1-RIO-S-G		1.011	0.463	91.73	4762	625800
5-RIO-S-G		0.998	0.469	89.59	4591	603000
9-RIO-S-G	Copacabana	1.001	0.463	91.05	4774	650900
13-RIO-S-G		1.006	0.469	94.21	4790	615700
32-RIO-S-G		1.010	0.467	95.39	4872	620200
2-RIO-S-B		1.002	0.465	85.75	4452	639200
6-RIO-S-B	Corcovado	1.005	0.465	84.98	4399	634800
10-RIO-S-B	CUICUVAUU	1.004	0.464	84.80	4413	633700
14-RIO-S-B		1.004	0.466	86.72	4475	630300
				Minimum:	4152	575400
				Maximum:	4872	650900
Average:					4516	618300
		d Deviation:	194	19730		
		of Variation:	4.3%	3.2%		

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01	est Date: 01/25/24								
SPECIMEN	COLOR	WIDTH	DEPTH	PEAK LOAD	APPARENT ²	1			
ID		(in)	(in)	(lb)	MOR (psi)	MOE (psi)			
4-RIO-S-R		1.009	0.485	80.52	3816	533800			
8-RIO-S-R		1.008	0.467	85.48	4375	595400			
12-RIO-S-R	Ipanema	1.001	0.464	81.30	4244	631600			
36-RIO-S-R		1.004	0.462	76.80	4032	585700			
37-RIO-S-R		1.003	0.470	62.51	3174	410300			
3-RIO-S-O		1.002	0.465	81.17	4215	593500			
7-RIO-S-O		1.002	0.466	89.58	4632	580900			
11-RIO-S-O	Leblon	1.001	0.466	78.82	4079	580500			
34-RIO-S-O		1.006	0.469	90.41	4596	626600			
35-RIO-S-O		1.002	0.470	79.87	4059	584800			
1-RIO-S-G		0.998	0.463	91.23	4798	614300			
5-RIO-S-G		0.997	0.459	84.68	4535	624500			
9-RIO-S-G	Copacabana	1.003	0.465	88.56	4594	608500			
13-RIO-S-G		0.996	0.465	86.07	4496	618600			
32-RIO-S-G		0.997	0.467	89.44	4628	601400			
2-RIO-S-B		1.001	0.466	86.80	4492	621300			
6-RIO-S-B		0.997	0.464	86.00	4507	633500			
10-RIO-S-B	Corcovado	0.988	0.471	86.62	4446	608000			
14-RIO-S-B		0.988	0.467	82.86	4326	625500			
33-RIO-S-B		0.993	0.455	82.98	4541	654500			
				Minimum:	3174	410300			
				Maximum:	4798	654500			
				Average:	4329	596700			
			Standa	rd Deviation:	368	51080			
		C	oefficient	of Variation:	8.5%	8.6%			

¹ MOR and MOE are apparent values because test specimens were not homogenous

Specimen Comparison Data Control Set vs. Artificially Weathered Set

	MOR (psi)			MOE (psi)			
	CONTROL ARTIFICIALLY		% DIFF	CONTROL	ARTIFICIALLY WEATHERED	% DIFF	
Average:	4516	4329	-4.1%	618300	596700	-3.5%	



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Series No. 3 - Los Angeles Cladding

Control Set (Non-Weathered)

Test Date: 01/25/24

SPECIMEN	COLOR	WIDTH	DEPTH	PEAK	APPARENT	1
ID		(in)	(in)	LOAD	MOR	MOE (psi)
				(lb)	(psi)	
43-LA-0		0.999	0.491	85.37	4254	697900
44-LA-0		1.000	0.495	97.71	4785	766000
45-LA-0	Hollywood	0.998	0.492	86.25	4284	709300
46-LA-0		0.998	0.490	90.98	4556	734900
47-LA-0		1.000	0.490	88.63	4430	702800
29-LA-B		1.002	0.497	94.84	4598	766500
30-LA-B		0.992	0.494	95.98	4758	781600
31-LA-B	Santa Monica	1.002	0.488	87.81	4416	704400
32-LA-B		0.998	0.489	87.16	4383	714400
33-LA-B		0.998	0.490	85.58	4286	694800
			N	/linimum:	4254	694800
Maximum:					4785	781600
Average:					4475	727300
		eviation:	193	32620		
		Coe	efficient of \	/ariation:	4.3%	4.5%

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01/25/24 SPECIMEN COLOR WIDTH DEPTH **APPARENT¹** PEAK ID (in) (in) LOAD MOR **MOE (psi)** (lb)(psi) 43-LA-0 1.002 0.497 93.98 4557 754800 44-LA-0 0.997 0.489 85.16 4287 696900 45-LA-0 Hollywood 1.001 0.485 90.08 4591 831700 46-LA-0 1.006 0.502 91.32 4323 734800 47-LA-0 0.998 0.503 94.73 4502 740800 29-LA-B 0.990 0.489 83.75 4245 751800 30-LA-B 0.997 0.486 83.44 4252 974200 0.997 0.495 93.61 4598 769000 31-LA-B Santa Monica 32-LA-B 1.001 0.498 93.11 4501 758200 33-LA-B 1.006 0.488 93.15 4666 780100 4245 696900 Minimum: Maximum: 4666 974200 Average: 4452 779200 Standard Deviation: 76660 160 Coefficient of Variation: 3.6% 9.8%

¹ MOR and MOE are apparent values because test specimens were not homogenous

SPECIMEN	J	MOR (psi)			MOE (psi)		
ID	COLOR	CONTROL	ARTIFICIALLY	% DIFF	CONTROL	ARTIFICIALLY	% DIFF
			WEATHERED			WEATHERED	
43-LA-0		4254	4557	7.1%	697900	754800	8.2%
44-LA-0		4785	4287	-10.4%	766000	696900	-9.0%
45-LA-0	Hollywood	4284	4591	7.2%	709300	831700	17.3%
46-LA-0		4556	4323	-5.1%	734900	734800	0.0%
47-LA-0		4430	4502	1.6%	702800	740800	5.4%
29-LA-B		4598	4245	-7.7%	766500	751800	-1.9%
30-LA-B		4758	4252	-10.6%	781600	974200	24.6%
31-LA-B	Santa Monica	4416	4598	4.1%	704400	769000	9.2%
32-LA-B		4383	4501	2.7%	714400	758200	6.1%
33-LA-B		4286	4666	8.9%	694800	780100	12.3%
Minimum		4254	4245	-10.6%	694800	696900	-9.0%
	Maximum:	4785	4666	8.9%	781600	974200	24.6%
	Average:	4475	4452	-0.2%	727300	779200	7.2%

Match-Marked Specimen Comparison Data



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Series No. 4 - London Cladding

Control Set (Non-Weathered)

Test Date: 01/26/24

SPECIMEN	COLOR	WIDTH	WIDTH DEPTH PEAK LOAD			L
ID		(in)	(in)	(lb)	MOR (psi)	MOE (psi)
1-L-B		0.995	0.160	33.17	4883	460600
2-L-B		0.977	0.155	26.90	4297	449000
3-L-B	Hyde Park	0.992	0.160	28.14	4155	423000
4-L-B		0.991	0.156	24.72	3844	447000
5-L-B		0.996	0.152	32.33	5268	473800
15-L-O		0.995	0.157	31.88	4874	453900
16-L-O		0.995	0.157	33.20	5076	489700
17-L-O	Mayfair	0.993	0.161	33.02	4811	441800
18-L-O		0.993	0.155	33.26	5228	500200
19-L-O		0.993	0.161	32.88	4790	459200
				Minimum:	3844	423000
				Maximum:	5268	500200
				Average:	4723	459800
Standard Deviation: 473					473	22890
Coefficient of Variation:						5.0%

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01/26/24 SPECIMEN COLOR WIDTH DEPTH PEAK LOAD **APPARENT¹** ID (in) (in) (lb) MOR (psi) MOE (psi) 1-L-B 0.999 0.160 30.22 4431 385000 2-L-B 0.999 0.160 28.60 4193 373400 3-L-B 4012 Hyde Park 0.997 0.159 26.97 483100 4-L-B 3894 437000 0.994 0.160 26.42 467600 5-L-B 0.992 0.153 30.96 5000 15-L-O 0.991 0.162 31.56 4551 413800 16-L-O 0.996 0.157 32.74 5001 464100 17-L-O Mayfair 4703 0.978 0.158 30.62 476300 18-L-O 0.993 4916 438400 0.156 31.68 4882 19-L-O 0.993 0.154 30.66 492900 Minimum: 3894 373400 Maximum: 5001 492900 Average: 4558 443200 Standard Deviation: 413 41330 Coefficient of Variation: 9.1% 9.3%

¹ MOR and MOE are apparent values because test specimens were not homogenous

SPECIME	N	MOR (psi)			MOE (psi)		
ID	COLOR	CONTROL	ARTIFICIALLY	% DIFF	CONTROL	ARTIFICIALLY	% DIFF
			WEATHERED			WEATHERED	
1-L-B		4883	4431	-9.3%	460600	385000	-16.4%
2-L-B		4297	4193	-2.4%	449000	373400	-16.8%
3-L-B	Hyde Park	4155	4012	-3.4%	423000	483100	14.2%
4-L-B		3844	3894	1.3%	447000	437000	-2.2%
5-L-B		5268	5000	-5.1%	473800	467600	-1.3%
15-L-O		4874	4551	-6.6%	453900	413800	-8.8%
16-L-O		5076	5001	-1.5%	489700	464100	-5.2%
17-L-O	Mayfair	4811	4703	-2.2%	441800	476300	7.8%
18-L-O		5228	4916	-6.0%	500200	438400	-12.4%
19-L-O		4790	4882	1.9%	459200	492900	7.3%
	Minimum:	3844	3894	-9.3%	423000	373400	-16.8%
	Maximum:	5268	5001	1.9%	500200	492900	14.2%
	Average:	4723	4558	-3.3%	459800	443200	-3.4%

Match-Marked Specimen Comparison Data



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Series No. 5 - New York Cladding

Control Set (Non-Weathered)

Test Date: 01/26/24

SPECIMEN	COLOR	WIDTH	DEPTH	PEAK	APPARENT	1	
ID		(in)	(in)	LOAD	MOR	MOE (psi)	
				(lb)	(psi)		
57-NY-B		0.995	0.296	54.01	4182	585700	
58-NY-B		1.007	0.300	54.58	4065	565200	
59-NY-B	Empire State	1.000	0.296	54.30	4183	560200	
60-NY-B		0.999	0.299	55.55	4199	574500	
61-NY-B		0.999	0.301	53.47	3988	546500	
71-NY-O		1.000	0.294	53.19	4154	538400	
72-NY-O		1.000	0.295	54.65	4239	601200	
73-NY-O	Brooklyn	0.995	0.299	54.51	4136	609200	
74-NY-O		1.002	0.290	52.29	4189	552100	
75-NY-O		1.001	0.294	54.89	4282	607800	
				Minimum:	3988	538400	
				Maximum:	4282	609200	
				Average:	4162	574100	
	Standard Deviation: 84.1 25880						
	Coefficient of Variation: 2.0%						

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01/26/24 SPECIMEN COLOR WIDTH DEPTH **APPARENT¹** PEAK ID (in) (in) LOAD MOR **MOE (psi)** (lb)(psi) 0.299 57-NY-B 1.002 55.05 4148 556300 58-NY-B 1.018 0.305 57.77 4117 529900 59-NY-B **Empire State** 1.011 0.297 54.99 4162 571200 0.296 60-NY-B 1.003 55.02 4226 588500 61-NY-B 1.059 0.301 57.38 4037 537900 71-NY-O 0.996 0.301 51.82 3877 557900 72-NY-O 1.001 0.294 51.50 4018 541000 73-NY-O 0.985 0.304 52.99 3930 578200 Brooklyn 74-NY-O 0.945 0.295 49.51 4063 559500 75-NY-O 0.970 0.296 4179 52.62 554300 3877 529900 Minimum: Maximum: 4226 588500 Average: 4076 557500 Standard Deviation: 112.4 18290 Coefficient of Variation: 2.8% 3.3%

¹ MOR and MOE are apparent values because test specimens were not homogenous

SPECIMEN	J	MOR (psi)			MOE (psi)		
ID	COLOR	CONTROL	ARTIFICIALLY	% DIFF	CONTROL	ARTIFICIALLY	% DIFF
			WEATHERED			WEATHERED	
57-NY-B	e	4182	4148	-0.8%	585700	556300	-5.0%
58-NY-B	Stat	4065	4117	1.3%	565200	529900	-6.2%
59-NY-B	e	4183	4162	-0.5%	560200	571200	2.0%
60-NY-B	idu	4199	4226	0.6%	574500	588500	2.4%
61-NY-B	Ē	3988	4037	1.2%	546500	537900	-1.6%
71-NY-O		4154	3877	-6.7%	538400	557900	3.6%
72-NY-O	c	4239	4018	-5.2%	601200	541000	-10.0%
73-NY-O	klyı	4136	3930	-5.0%	609200	578200	-5.1%
74-NY-O	õ	4189	4063	-3.0%	552100	559500	1.3%
75-NY-O	BI	4282	4179	-2.4%	607800	554300	-8.8%
N	linimum:	3988	3877	-6.7%	538400	529900	-10.0%
М	aximum:	4282	4226	1.3%	609200	588500	3.6%
	Average:	4162	4076	-2.0%	574100	557500	-2.7%

Match-Marked Specimen Comparison Data



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Series No. 6 - Rome Cladding

Control Set (Non-Weathered)

Test Date: 01/26/24

SPECIMEN	COLOR	WIDTH	WIDTH DEPTH PEAK LOAD			APPARENT ¹		
ID		(in)	(in)	(lb)	MOR (psi)	MOE (psi)		
85-ROM-B		0.994	0.147	24.75	4322	370600		
86-ROM-B		0.998	0.147	28.57	4967	504400		
87-ROM-B	Pantheon	0.994	0.143	28.56	5269	491300		
88-ROM-B		0.999	0.144	28.69	5194	503900		
89-ROM-B		0.996	0.145	28.65	5131	485300		
99-ROM-O		0.998	0.149	28.31	4792	455800		
100-ROM-O		0.994	0.148	27.51	4739	410400		
101-ROM-O	Colosseum	0.986	0.149	27.18	4656	423300		
102-ROM-O		0.998	0.146	25.58	4508	431700		
103-ROM-O		0.997	0.144	27.14	4922	458300		
				Minimum:	4322	370600		
				Maximum:	5269	504400		
				Average:	4850	453500		
Standard Deviation:					305.7	44370		
		6.3%	9.8%					

¹ MOR and MOE are apparent values because test specimens were not homogenous



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Artificially Weathered Set (2000 Hours of Xenon-Arc Exposure)

Test Date: 01/26/24 **SPECIMEN** COLOR WIDTH DEPTH PEAK LOAD **APPARENT¹** ID (in) (in) (lb) MOR (psi) **MOE (psi)** 85-ROM-B 0.992 0.147 39.92 6984 711300 86-ROM-B 0.997 0.146 24.42 4309 367900 87-ROM-B Pantheon 0.995 0.142 26.48 4949 436400 88-ROM-B 0.995 0.143 27.09 4992 466900 438700 89-ROM-B 0.994 0.142 25.94 4854 99-ROM-O 0.999 0.147 25.89 4498 388500 100-ROM-O 0.997 0.146 28.26 4987 458400 0.998 27.41 482500 101-ROM-O Colosseum 0.143 5037 102-ROM-O 1.000 27.35 472300 0.144 4946 1.000 28.56 103-ROM-O 0.143 5237 505400 Minimum: 4309 367900 Maximum: 6984 711300 Average: 5079 472800 Standard Deviation: 721.8 93620 Coefficient of Variation: 14.2% 19.8%

¹ MOR and MOE are apparent values because test specimens were not homogenous

SPECIMEN		MOR (psi)			MOE (psi)		
ID	COLOR	CONTROL	ARTIFICIALLY	% DIFF	CONTROL	ARTIFICIALLY	% DIFF
			WEATHERED			WEATHERED	
85-ROM-B		4322	6984	61.6%	370600	711300	91.9%
86-ROM-B	Ľ	4967	4309	-13.2%	504400	367900	-27.1%
87-ROM-B	hec	5269	4949	-6.1%	491300	436400	-11.2%
88-ROM-B	antl	5194	4992	-3.9%	503900	466900	-7.3%
89-ROM-B	P	5131	4854	-5.4%	485300	438700	-9.6%
99-ROM-O		4792	4498	-6.1%	455800	388500	-14.8%
100-ROM-O	шп	4739	4987	5.2%	410400	458400	11.7%
101-ROM-O	ssei	4656	5037	8.2%	423300	482500	14.0%
102-ROM-O		4508	4946	9.7%	431700	472300	9.4%
103-ROM-O	Ŭ	4922	5237	6.4%	458300	505400	10.3%
	Minimum:	4322	4309	-13.2%	370600	367900	-27.1%
	Maximum:	5269	6984	61.6%	504400	711300	91.9%
	Average:	4850	5079	5.6%	453500	472800	6.7%

Match-Marked Specimen Comparison Data



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Conclusion

	Average MOR (psi) % Diff.	Average MOE (psi) % Diff.
Paris Decking	-5.0	-6.5
<i>Rio</i> Decking	-4.1	-3.5
Average:	-4.6	-5.0

	Average MOR (psi) % Diff.	Average MOE (psi) % Diff.
Los Angeles Cladding	-0.2	+7.2
London Cladding	-3.3	-3.4
New York Cladding	-2.0	-2.7
Rome Cladding	+5.6	+6.7
Average:	0.0	+2.0

SECTION 10

FREEZE-THAW RESISTANCE

Re: ICC-ES[™] AC524, Section 3.6

General

The purpose of this test was to evaluate the effect of freeze-thaw cycles on the performance of the product. Samples were subjected to Hygrothermal Cycling in accordance with Section 4.7 of ASTM D7032. Flexural tests were then performed on each sample, and results were compared to identical tests performed on a match-marked set of control specimens.

Test Specimens

Two sets of five full cross section *New York* cladding specimens were cut to 20 in lengths from production length cladding boards and labelled for control and freeze-thaw resistance testing.

Test Procedure

Hygrothermal Cycling Procedure (Freeze-Thaw)

Hygrothermal cycling was performed using the methods described by ASTM D7032. Specimens were submerged in water for a period of 24 hours. Immediately after removing the specimens from the water, each specimen's outer surface was wiped down with a dry cloth and then placed in a freezer at -20°F for 24 hours. The specimens were returned to lab conditions for 24 hours. This process was repeated two more times for a total of three cycles of water submersion, freezing, and thawing.



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Flexural Test Procedure

Flexural testing was performed using the methods described by ASTM D6109 in a computermonitored and -controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine with a four-point loading arrangement. The specimens were supported on 5/8 in radius support noses. The loading span was one-third of the bending span and utilized 5/8 in radius loading noses. Midspan deflection was measured with a 2-inch travel Instron[®] Model 3540-200T-ST deflectometer. See photographs in Section 23 for test setup.

Test Results

Stiffness properties were derived from a least square fit of load / deflection data between 10% and 40% of the maximum test load. Peak load and Mu were defined at ultimate bending strength. Reported peak loads were not limited by an outer surface strain of 0.03 in/in as referenced in Section 10.1.7 of ASTM D6109.

WATER AB	WATER ABSORPTION / HYGROTHERMAL CYCLES								
SPECIMEN	CYCLE 1		CYCLE 2		CYCLE 3		MAX. GAIN		
ID	WEIGHT (g)		WEIGHT (g)		WEIGHT (g)				
	INITIAL	24-HR	INITIAL	24-HR	INITIAL	24-HR	WEIGHT	%	
		SOAK		SOAK		SOAK	(g)		
57-NY-B	939.8	947.3	941.7	949.1	942.4	952.9	13.1	1.4%	
58-NY-B	935.7	943.3	937.1	944.6	938.3	948.5	12.8	1.4%	
59-NY-B	934.2	941.5	936.0	943.3	936.7	946.9	12.7	1.4%	
71-NY-O	921.1	928.5	922.8	930.2	923.7	933.5	12.4	1.3%	
72-NY-O	913.3	921.0	915.1	922.3	916.0	925.9	12.6	1.4%	

Test Dates: 10/17/23 through 11/03/23

Control Set (Standard Lab Conditions)

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min

Test Date: 12/28/23 SAMPLE WEIGHT PER MU COLOR ULTIMATE EI NO. LINEAL FOOT (Ib) (in·lb) LOAD (lb) (lb·in²) 57-NY-B 1.24 213 568 47130 1.24 44050 58-NY-B **Empire State** 209 557 59-NY-B 212 1.24 565 46100 71-NY-O 1.22 208 555 45800 Brooklyn 1.22 72-NY-O 203 541 42220 Minimum: 203 541 42220 Maximum: 213 568 47130 209 557 45060 Average: 4 Standard Deviation: 11 1936 Coefficient of Variation: 1.9% 4.3% 1.9%



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Freeze-Thaw Resistance Set

Support Span = 16.0 in and Crosshead Speed = 0.55 in/min

Test Date: 12/28/23

Test Dute.	2/20/23				
SAMPLE	COLOR	WEIGHT PER	ULTIMATE	MU	EI
NO.		LINEAL FOOT (lb)	LOAD (lb)	(in·lb)	(lb∙in²)
57-NY-B		1.25	203	541	43540
58-NY-B	Empire State	1.24	207	552	44860
59-NY-B		1.24	204	544	43130
71-NY-O	Brooklyn	1.22	207	552	45940
72-NY-O	ыоокіуп	1.21	201	536	43940
		Minimum:	201	536	43130
		Maximum:	207	552	45940
		Average:	204	545	44280
	S	tandard Deviation:	3	7	1127
	Coeff	icient of Variation:	1.3%	1.3%	2.5%

Match-Marked Sample Comparison Data

Control Set	vs. Freeze-T	haw Resistance Set

SAMPLE COLOR		MU (in·lb)			El (lb·in²)			
NO.		CONTROL	FREEZE-THAW	DIFF.	CONTROL	FREEZE-THAW	DIFF.	
57-NY-B	Farming	568	541	-4.7%	47130	43540	-7.6%	
58-NY-B	Empire	557	552	-1.0%	44050	44860	1.8%	
59-NY-B	51810	565	544	-3.8%	46100	43130	-6.4%	
71-NY-O	Prooklyn	555	552	-0.5%	45800	45940	0.3%	
72-NY-O	ыооктуп	541	536	-1.0%	42220	43940	4.1%	
	Minimum:	541	536	-4.7%	42220	43130	-7.6%	
	Maximum:	568	552	-0.5%	47130	45940	4.1%	
	Average:	557	545	-2.2%	45060	44280	-1.6%	



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 11

FLAME SPREAD

Re: ICC-ES[™] AC174, Section 3.10 and ICC-ES[™] AC524, Section 3.9

General

The flame spread evaluation was performed by Intertek B&C Inc. and is accredited to perform testing per ASTM E84.

Test Specimens

Eight full cross-sections by 12 ft long grooved *Paris* deck boards and *New York* cladding boards were tested.

Summary of Test Results

Test Series No. 1 - Paris Grooved Decking

Flame Spread Index (FSI) = 80 (Reference Intertek B&C Report No. P0941.07-121-24)

Test Series No. 2 - New York Cladding

Flame Spread Index (FSI) = 85 (Reference Intertek B&C Report No. P0941.08-121-24)



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 12

END-USE ADJUSTMENTS

Re: ICC-ES[™] AC174, Sections 3.6 - 3.8 and ICC-ES[™] AC524, Sections 3.4 - 3.6

General

Data from hot, cold, moisture, UV resistance and freeze-thaw end-use effects testing reported herein were used for determination of applicable end-use adjustment factors.

END-USE FACTORS	COMPARISON (% CHANGE)WITH STANDARD (CONTROL)CONDITIONSSTRENGTH 2STIFFNESS 3		ASTM D7032 CRITERIA (AS REFERENCED BY AC174)	ADJUSTMENT FACTORS STRENGTH STIFFNES	
UV	-5.0%	-6.5%	Loss ≤ 10%	1.00	1.00
Freeze-Thaw	-2.2%	-1.6%	Loss ≤ 10%	1.00	1.00
Greatest of: +125°F -20°F Moisture	-26.1% +25.4% -15.9%	-36.5% +26.6% -23.6%	100% of Worst Effect	0.74	0.63
	0.74	0.63			
Creep Recovery	1.00	1.00			

Paris Decking End-Use Adjustment Factors

Creep Recovery and Duration of Load End-Use Adjustment Factors *: 1.00 1.00

¹Based on UV and Freeze-Thaw results

² Moment or MOR (Modulus of Rupture)

³ EI (the product of MOE and the Moment of Inertia) or MOE (Modulus of Elasticity)



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Rio Decking End-Use Adjustment Factors

END-USE FACTORS	ACTORS COMPARISON (% CHANGE) ACTORS WITH STANDARD (CONTROL) CONDITIONS		ASTM D7032 CRITERIA (AS REFERENCED BY	ADJUSTMENT FACTORS		
	STRENGTH ²	STIFFNESS ³	AC174)	STRENGTH	STIFFNESS	
UV	-4.1%	-3.5%	Loss ≤ 10%	1.00	1.00	
Freeze-Thaw	-2.2%	-1.6%	Loss ≤ 10%	1.00	1.00	
Greatest of: +125°F -20°F Moisture	-27.2% +11.1% -15.9%	-43.8% +20.7% -23.6%	100% of Worst Effect	0.73	0.56	
	0.73	0.56				
Creep Recovery	1.00	1.00				

Creep Recovery and Duration of Load End-Use Adjustment Factors ¹: 1.00

¹Based on UV and Freeze-Thaw results

² Moment or MOR (Modulus of Rupture)

³ EI (the product of MOE and the Moment of Inertia) or MOE (Modulus of Elasticity)

Cladding End-Use Adjustment Factors

END-USE FACTORS	COMPARISON (% CHANGE) WITH STANDARD (CONTROL) CONDITIONS		ASTM D7032 CRITERIA (AS REFERENCED BY	ADJUSTMENT FACTORS		
	STRENGTH ¹	STIFFNESS ²	AC174)	STRENGTH	STIFFNESS	
UV ³	0.0%	+2.0%	Loss ≤ 10%	1.00	1.00	
Freeze-Thaw	-2.2%	-1.6%	Loss ≤ 10%	1.00	1.00	
Greatest of:			100%			
+125°F ⁴	-27.2%	-43.8%	100%	0.73	0.56	
-20°F ⁴	+11.2%	+20.7%	Worst Effect			
Moisture	-15.9%	-23.6%				
	0.73	0.56				

¹ Moment or MOR (Modulus of Rupture)

² *EI* (the product of MOE and the Moment of Inertia) or MOE (Modulus of Elasticity)

³ Average from all products

⁴ Worst-case from decking products



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 13

FLEXURAL TESTING

Re: ICC-ES[™] AC174, Section 3.4 (Decking) and ICC-ES[™] AC524, Section 3.3 (Cladding)

General

Flexural testing was performed in accordance with Section 4.4 of ASTM D7032 to establish unadjusted flexural strength and stiffness values for span/load ratings and for comparison with future production and quality control audits.

Test Specimens

Six sets of twenty-eight test specimens were cut to 20 in lengths from production length solid and grooved deck boards and cladding boards. Test specimens were conditioned for a minimum of 40 hours at standard laboratory conditions.

Test Procedure

Testing was performed using the methods described by ASTM D6109 in a computer-monitored and -controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine with a four point loading arrangement. The specimens were supported on 5/8 in radius support noses. The loading span was one-third of the bending span and utilized 5/8 in radius loading noses. Midspan deflection was measured with either a 2-inch travel Instron[®] Model 3540-200T-ST deflectometer (Test Series 3-6; Cladding) or a dial indicator suspended with a yoke apparatus (Test Series 1A, 2A, 1B, and 2B; Decking). See photographs in Section 23 for test setup.

TEST SERIES	1A	1B	2A	2B	3	4	5	6
SUPPORT SPAN (in)	16	16	16	16	16	16	16	16
LOADING RATE (in/min)	0.55	0.51	0.52	0.51	0.91	0.45	0.55	0.46
NOMINAL DEFL. AT 3%	1.88	1.94	1.80	1.78	3.16	1.57	1.90	1.58
STRAIN								

Test Parameters

Test Results

Stiffness properties were derived from load/deflection data recorded during the loading process using the mid span deflection and a least square fit between 10% and 40% of the maximum test load. Peak load and Mu were defined at ultimate bending strength. Reported peak loads were not limited by an outer surface strain of 0.03 in/in as referenced in Section 10.1.7 of ASTM D6109.



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

TEST SERIES NO. 1A - <i>PARIS</i> SOLID DECK BOARDS STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)									
SPE	COL					(lb)			
10-PAR-S-B		5.484	0.866	2.74	1057	213	2387	2819	173500
11-PAR-S-B		5.477	0.870	2.76	1093	244	2236	2915	162500
9-PAR-S-B	he	5.486	0.878	2.77	1099	255	2285	2931	166100
13-PAR-S-B	Ш	5.473	0.851	2.77	1015	258	2553	2707	185600
14-PAR-S-B	Tric	5.465	0.860	2.77	1161	258	2331	3096	169500
1-PAR-S-B		5.473	0.875	2.73	1087	220	2323	2899	168900
5-PAR-S-B		5.467	0.879	2.77	1102	249	2419	2939	175800
7-PAR-S-G	vre	5.438	0.875	2.73	1047	208	2344	2792	170400
3-PAR-S-G	Lou	5.455	0.881	2.74	1087	224	2342	2899	170200
2-PAR-S-R	Eiffel	5.496	0.868	2.77	1143	246	2327	3048	169200
12-PAR-S-D		5.439	0.876	2.74	1084	235	2290	2891	166500
4-PAR-S-D	ees	5.471	0.879	2.75	1094	199	2314	2917	168200
6-PAR-S-D	=l/s	5.439	0.895	2.76	1104	235	2124	2944	154400
8-PAR-S-D		5.431	0.881	2.74	1020	224	2264	2720	164600
Minimum					1015	199	2124	2707	154400
Maximum:					1161	258	2553	3096	185600
Average:					1085	233	2324	2894	169000
Standard Deviation:					41	19	96	108	6993
Coefficient of Variation:				4%	8%	4%	4%	4%	


TEST REPORT FOR NORX, LLC

TEST SERIES NO. 1B - PARIS GROOVED DECK BOARDS									
STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)									
TEST DATE: 0 NBECIMEN		9/23 WIDTH (in)	DEPTH (in)	WEIGHT PER LINEAL FOOT (Ib)	ULTIMATE LOAD (lb)	LOAD AT L/180 DEFLECTION (Ib)	SLOPE (lbf/in)	Mu (in∙lb)	El (lb·in²)
26-PAR-G-D	SS	5.481	0.879	2.67	987	207	2347	2632	170600
22-PAR-G-D	ysee	5.491	0.845	2.69	1023	222	2424	2728	176200
18-PAR-G-D	Ť	5.570	0.870	2.71	1038	219	2405	2768	174800
15-PAR-G-B	he	5.506	0.855	2.65	1019	210	2389	2717	173600
23-PAR-G-B	dmo	5.495	0.869	2.66	855	209	2352	2280	171000
19-PAR-G-B	Tri	5.491	0.870	2.67	961	230	2648	2563	192500
27-PAR-G-R		5.504	0.838	2.66	967	232	2464	2579	179100
24-PAR-G-R	_	5.511	0.851	2.64	1145	217	2296	3053	166900
28-PAR-G-R	iffe	5.490	0.865	2.68	1184	233	2251	3157	163700
20-PAR-G-R	ш	5.596	0.870	2.68	1085	205	2267	2893	164800
16-PAR-G-R		5.569	0.876	2.74	1018	232	2349	2715	170700
25-PAR-G-G	e	5.497	0.873	2.69	1025	225	2299	2733	167100
21-PAR-G-G	IVN	5.506	0.882	2.68	1039	244	2311	2771	168000
12-PAR-G-G	Ľ	5.501	0.879	2.69	971	243	2331	2589	169500
				Minimum:	855	205	2251	2280	163700
				Maximum:	1184	244	2648	3157	192500
Average:					1023	223	2367	2727	172000
Standard Deviation:					81	13	101	215	7320
		Co	efficient	of Variation:	8%	6%	4%	8%	4%



TEST REPORT FOR NORX, LLC

TEST SERIES NO. 2A - <i>RIO</i> SOLID DECK BOARDS									
STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)									
SPECIMEN SPECIMEN	COLOR	9/23 WIDTH (in)	DEPTH (in)	WEIGHT PER LINEAL FOOT (Ib)	ULTIMATE LOAD (lb)	LOAD AT L/180 DEFLECTION (Ib)	SLOPE (lbf/in)	Mu (in∙lb)	El (lb·in²)
2-RIO-S-B	qo	5.486	0.916	2.13	603	196	2000	1608	145400
6-RIO-S-B	ovac	5.524	0.911	2.15	645	190	2072	1720	150600
14-RIO-S-B	orco	5.490	0.920	2.14	653	194	2060	1741	149700
10-RIO-S-B	ŭ	5.533	0.910	2.14	642	225	2148	1712	156100
11-RIO-S-O	u	5.495	0.914	2.15	598	279	2800	1595	203500
3-RIO-S-O	eblo	5.490	0.902	2.15	642	220	2116	1712	153800
7-RIO-S-O	Ľ	5.880	0.915	2.10	694	192	1992	1851	144800
4-RIO-S-R	na	5.528	0.914	2.15	579	197	1928	1544	140100
8-RIO-S-R	aner	5.516	0.910	2.15	620	195	2176	1653	158200
12-RIO-S-R	lp	5.817	0.910	2.15	611	197	2164	1629	157300
5-RIO-S-G	na	5.453	0.938	2.09	686	182	1937	1829	140800
1-RIO-S-G	abaı	5.459	0.893	2.09	696	224	2080	1856	151200
9-RIO-S-G	pac	5.475	0.930	2.09	689	239	2160	1837	157000
13-RIO-S-G	ő	5.457	0.918	2.10	705	186	1987	1880	144500
				Minimum:	579	182	1928	1544	140100
Maximum:					705	279	2800	1880	203500
Average:					647	208	2116	1726	153800
			Standar	d Deviation:	41	26	214	111	15560
		Co	efficient	of Variation:	6%	13%	10%	6%	10%



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TEST REPORT FOR NORX, LLC

TEST SERIES NO. 2B - <i>RIO</i> GROOVED DECK BOARDS									
STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)									
SPECIMEN ID ID	COLOR	WIDTH (in)	DEPTH (in)	WEIGHT PER LINEAL FOOT (Ib)	ULTIMATE LOAD (lb)	LOAD AT L/180 DEFLECTION (Ib)	SLOPE (lbf/in)	Mu (in∙lb)	El (lb∙in²)
27-RIO-G-G	na	5.604	0.923	2.07	670	216	2048	1787	148900
19-RIO-G-G	abai	5.624	0.916	2.08	688	209	1829	1835	132900
15-RIO-G-G	pac	5.593	0.928	2.07	688	244	2064	1835	150000
23-RIO-G-G	ပိ	5.579	0.903	2.06	656	186	2004	1749	145700
17-RIO-G-O	u	5.503	0.916	2.07	734	214	2296	1957	166900
25-RIO-G-O	pla	5.479	0.922	2.07	685	211	2208	1827	160500
21-RIO-G-O	۲e	5.500	0.921	2.07	744	208	2312	1984	168100
26-RIO-G-R	па	5.498	0.916	2.07	732	212	2296	1952	166900
18-RIO-G-R	aner	5.550	0.929	2.07	719	197	2168	1917	157600
22-RIO-G-R	g	5.508	0.919	2.07	704	217	2316	1877	168400
28-RIO-G-B	0	5.551	0.947	2.13	659	195	2084	1757	151500
24-RIO-G-B	vad	5.546	0.917	2.12	667	198	2092	1779	152100
20-RIO-G-B	orco	5.551	0.937	2.13	580	175	2108	1547	153200
16-RIO-G-B	ŭ	5.549	0.922	2.12	683	216	2100	1821	152700
				Minimum:	580	175	1829	1547	132900
				Maximum:	744	244	2316	1984	168400
Average:					686	207	2137	1830	155400
Standard Deviation:					42	17	139	111	10130
		Co	efficient	of Variation:	6%	8%	7%	6%	7%



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TEST REPORT FOR NORX, LLC

TEST SERIES NO. 3 - LOS ANGELES CLADDING									
STRENGTH A	ND S	TIFFNESS	/ BENDI	NG (STANDAF	RD LAB COND	DITIONS)			
TEST DATE: 0	9/13	3/23							
N N N N N N N N N N N N N N N N N N N		WIDTH	DEPTH	WEIGHT	ULTIMATE	LOAD AT	SLOPE	Mu	EI
Σ	R	(in)	(in)	PER LINEAL	LOAD (lb)	L/180	(lbf/in)	(in·lb)	(lb∙in²)
DEC 0	orc			FOOT (lb)		DEFLECTION			
	Ŭ					(Ib)			
50-LA-O		5.545	0.518	1.38	308	35	520	821	37810
47-LA-0		5.541	0.510	1.38	320	38	550	853	39970
46-LA-O		5.525	0.497	1.38	310	38	555	827	40340
45-LA-O		5.550	0.509	1.38	311	36	549	829	39930
44-LA-O		5.571	0.498	1.38	317	38	548	845	39810
43-LA-O	po	5.566	0.509	1.38	321	40	553	856	40200
49-LA-O	Ň	5.536	0.499	1.38	310	38	554	827	40240
51-LA-O	olly	5.574	0.505	1.32	330	41	559	880	40650
52-LA-O	Т	5.559	0.505	1.31	302	39	523	805	38020
53-LA-O		5.579	0.519	1.32	314	41	539	837	39150
54-LA-O		5.578	0.511	1.36	313	41	549	835	39880
55-LA-O		5.548	0.502	1.33	312	41	542	832	39370
55-LA-O		5.579	0.512	1.37	318	39	545	848	39610
48-LA-O		5.564	0.502	1.36	314	37	528	837	38350
38-LA-B		5.538	0.500	1.33	299	37	512	797	37220
39-LA-B		5.562	0.504	1.34	314	43	555	837	40330
40-LA-B		5.552	0.499	1.35	313	42	538	835	39140
41-LA-B		5.550	0.523	1.36	315	42	550	840	39980
42-LA-B		5.519	0.508	1.32	294	40	532	784	38660
32-LA-B	nic	5.548	0.516	1.32	310	41	543	827	39500
33-LA-B	Mo	5.523	0.515	1.35	307	41	540	819	39260
34-LA-B	ta l	5.557	0.519	1.38	312	39	541	832	39350
35-LA-B	San	5.530	0.508	1.37	305	41	536	813	38950
36-LA-B	0,	5.508	0.502	1.34	301	41	530	803	38490
37-LA-B		5.508	0.512	1.35	304	40	534	811	38800
29-LA-B		5.549	0.504	1.37	312	41	555	832	40340
31-LA-B		5.535	0.418	1.32	294	40	523	784	38000
30-LA-B		5.524	0.509	1.34	313	41	531	835	38630
				Minimum:	294	35	512	784	37220
Maximum					330	43	559	880	40650
Average:					310	40	540	828	39290
Standard Deviation:					8	2	12	21	892
Coefficient of Variation:					3%	5%	2%	3%	2%



TEST REPORT FOR NORX, LLC

TEST SERIES NO. 4 - LONDON CLADDING										
STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)										
TEST DATE: 09/11/23										
Z		WIDTH	DEPTH	WEIGHT	ULTIMATE	LOAD AT	SLOPE	Mu	El	
Σ	R	(in)	(in)	PER LINEAL	LOAD (lb)	L/180	(lbf/in)	(in·lb)	(lb∙in²)	
EC				FOOT (lb)		DEFLECTION				
SP D	S					(lb)				
25-L-O		8.607	1.033	1.87	1200	214	3076	3200	223600	
22-L-O		8.613	1.044	1.87	1225	215	3054	3267	222000	
21-L-O		8.612	1.026	1.87	1194	213	3075	3184	223600	
28-L-O		8.609	1.036	1.88	1220	165	3045	3253	221300	
18-L-O		8.606	1.041	1.88	1230	131	3057	3280	222200	
24-L-O	. _	8.603	1.039	1.87	1202	220	3000	3205	218100	
23-L-O	yfai	8.612	1.035	1.88	1202	226	3060	3205	222400	
17-L-O	Aa	8.665	1.030	1.88	1196	157	3059	3189	222400	
20-L-O	_	8.670	1.033	1.87	1188	217	3083	3168	224100	
19-L-O		8.631	1.032	1.87	1068	209	3078	2848	223800	
15-L-O		8.672	1.042	1.89	1199	223	3066	3197	222900	
16-L-O		8.635	1.033	1.87	1225	174	3028	3267	220100	
27-L-O		8.670	1.032	1.87	1242	183	3014	3312	219100	
26-L-O		8.602	1.030	1.87	1230	184	3025	3280	219900	
2-L-B		8.617	1.035	1.91	1110	72	2823	2960	205200	
14-L-B		8.600	1.033	1.91	1132	42	2832	3019	205800	
13-L-B		8.606	1.038	1.88	1205	188	3027	3213	220000	
12-L-B		8.623	1.035	1.87	1214	185	3002	3237	218200	
10-L-B		8.603	1.033	1.91	1027	70	3021	2739	219600	
9-L-B	논	8.581	1.030	1.90	1019	78	2863	2717	208100	
8-L-B	Pa	8.616	1.040	1.87	1225	70	2983	3267	216900	
7-L-B	yd€	8.607	1.035	1.88	1211	161	2958	3229	215000	
1-L-B	Т	8.625	1.037	1.88	1186	159	2960	3163	215200	
3-L-B		8.611	1.044	1.91	1110	82	2707	2960	196700	
11-L-B		8.607	1.027	1.91	917	46	2923	2445	212500	
6-L-B		8.621	1.035	1.89	1184	180	2963	3157	215400	
5-L-B		8.618	1.036	1.88	1216	176	2972	3243	216100	
4-L-B		8.613	1.032	1.91	964	92	3056	2571	222100	
				Minimum:	917	42	2707	2445	196700	
Maximum:					1242	226	3083	3312	224100	
	Average:					155	2993	3099	217600	
Standard Deviation:					87	60	91.3	232	6643	
		Co	efficient	of Variation:	7%	39%	3%	7%	3%	



TEST REPORT FOR NORX, LLC

TEST SERIES NO. 5 - NEW YORK CLADDING									
STRENGTH A	ND S	TIFFNESS	/ BENDI	NG (STANDAF	RD LAB COND	DITIONS)			
TEST DATE: 0	09/13	3/23	-					-	r
EN		WIDTH	DEPTH	WEIGHT	ULTIMATE	LOAD AT	SLOPE	Mu	EI
M	R	(in)	(in)	PER LINEAL	LOAD (Ib)	L/180	(lbf/in)	(in·lb)	(lb·in²)
PEC	OLO			FOOT (Ib)		DEFLECTION			
	Ŭ	6.1.10	0.056	4.2.4	100	(10)	6.4.0	500	46550
70-NY-B		6.140	0.856	1.24	198	41	640	528	46550
58-NY-B	_	6.151	0.849	1.23	205	62	687	547	49940
57-NY-B		6.145	0.851	1.25	218	72	779	581	56650
68-NY-B	_	6.143	0.853	1.23	197	63	711	525	51690
60-NY-B	a	6.143	0.851	1.25	204	64	707	544	51420
61-NY-B	tat	6.145	0.850	1.24	210	70	769	560	55880
59-NY-B	e S	6.136	0.861	1.23	207	54	741	552	53830
66-NY-B	pi	6.147	0.859	1.24	208	58	744	555	54070
65-NY-B	ШЧ	6.149	0.862	1.25	203	61	729	541	52970
64-NY-B		6.138	0.857	1.24	207	40	696	552	50570
63-NY-B		6.121	0.850	1.24	205	68	760	547	55210
67-NY-B		6.126	0.850	1.23	201	62	757	536	55020
69-NY-B		6.137	0.856	1.23	203	64	753	541	54710
62-NY-B		6.133	0.866	1.25	195	61	787	520	57210
76-NY-0		6.097	0.834	1.20	183	48	686	488	49890
77-NY-0		6.110	0.842	1.22	198	70	788	528	57250
83-NY-0		6.087	0.840	1.22	190	68	755	507	54890
79-NY-O		6.097	0.840	1.22	184	79	764	491	55520
80-NY-0		6.103	0.850	1.22	179	69	787	477	57230
81-NY-0	c	6.125	0.843	1.21	185	65	757	493	55000
82-NY-O	kl v	6.105	0.867	1.21	194	46	760	517	55260
75-NY-O	roc	6.103	0.843	1.21	202	45	702	539	51010
71-NY-O	В	6.103	0.836	1.21	207	48	729	552	53030
73-NY-O		6.101	0.849	1.22	210	54	707	560	51410
74-NY-O		6.081	0.835	1.20	202	48	684	539	49730
72-NY-O		6.089	0.847	1.20	206	53	720	549	52320
84-NY-O		6.112	0.840	1.21	204	37	723	544	52530
78-NY-O		6.107	0.850	1.21	207	43	700	552	50910
				Minimum:	179	37	640	477	46550
Maximum:					218	79	788	581	57250
Average:					200	58	733	534	53280
Standard Deviation:					9	11	37	25	2714
		Co	efficient	of Variation:	5%	19%	5%	5%	5%



TEST REPORT FOR NORX, LLC

TEST SERIES NO. 6 - ROME CLADDING										
STRENGTH A	STRENGTH AND STIFFNESS / BENDING (STANDARD LAB CONDITIONS)									
TEST DATE: 0	9/08	3/23								
EN		WIDTH	DEPTH	WEIGHT	ULTIMATE	LOAD AT	SLOPE	Mu	EI	
N N N N N N N N N N N N N N N N N N N	R	(in)	(in)	PER LINEAL	LOAD (Ib)	L/180	(lbf/in)	(in·lb)	(lb∙in²)	
DEC	OLO			FOOT (lb)		DEFLECTION				
SI ID	Ŭ					(Ib)				
95-Rom-B		6.946	1.023	1.59	1135	144	2844	3027	206700	
93-Rom-B		6.958	1.024	1.59	1154	155	2820	3077	205000	
88-Rom-B		6.949	1.028	1.59	1138	163	2852	3035	207300	
87-Rom-B		6.951	1.025	1.59	1130	182	2831	3013	205800	
91-Rom-B		6.950	1.025	1.59	1158	196	2829	3088	205600	
90-Rom-B	ч	6.952	1.033	1.59	1149	209	2804	3064	203800	
89-Rom-B	he.	6.964	1.026	1.60	1145	209	2834	3053	206000	
86-Rom-B	ant	6.954	1.022	1.60	1119	137	2832	2984	205900	
96-Rom-B	<u>ط</u>	6.953	1.026	1.59	1130	166	2801	3013	203600	
97-Rom-B		6.938	1.039	1.60	1116	121	2801	2976	203600	
92-Rom-B		6.942	1.024	1.59	1133	141	2805	3021	203900	
98-Rom-B		6.938	1.029	1.60	1157	162	2780	3085	202100	
94-Rom-B		6.937	1.026	1.60	1126	167	2785	3003	202500	
		6.953	1.030	1.58	1113	163	2534	2968	184200	
102-Rom-O		6.962	1.023	1.60	1163	44	2906	3101	211200	
99-Rom-O		6.946	1.056	1.60	1191	204	2907	3176	211300	
107-Rom-O		6.969	1.033	1.59	1174	213	2888	3131	210000	
108-Rom-O		6.956	1.038	1.60	1169	219	2911	3117	211600	
105-Rom-O		6.956	1.024	1.60	1171	209	2899	3123	210800	
101-Rom-O	Ē	6.955	1.043	1.60	1159	194	2868	3091	208500	
100-Rom-O	ser	6.958	1.032	1.60	1165	204	2869	3107	208500	
104-Rom-O	los	6.975	1.026	1.60	1189	211	2846	3171	206900	
104-Rom-O	ပိ	6.975	1.026	1.60	1066	169	2902	2843	211000	
110-Rom-O		6.978	1.027	1.60	1164	201	2875	3104	209000	
111-Rom-O		6.947	1.043	1.61	1168	189	2865	3115	208200	
112-Rom-O		6.958	1.034	1.60	1163	176	2859	3101	207800	
109-Rom-O		6.977	1.036	1.60	1168	181	2878	3115	209200	
106-Rom-O		6.950	1.029	1.58	1115	215	2838	2973	206300	
Minimum:					1066	44	2534	2843	184200	
Maximum					1191	219	2911	3176	211600	
Average:					1147	177	2838	3060	206300	
Standard Deviation:					27	37	71	72	5148	
		Co	efficient	of Variation:	2%	21%	2%	2%	2%	



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 14

DECK BOARD UNIFORM LOAD RATING

Re: ICC-ES[™] AC174, Section 4.0

General

The following analysis using the test results substantiates a 16/100, span/load rating in accordance with ICC-ES[™] AC174 for the *Paris* and *Rio* solid and grooved deck boards. The span-load rating was calculated using the worst-case strength and stiffness data determined from the testing conducted on the solid and grooved decking products.

Test Series No. 1 - Paris Decking

Average Ultimate Test Load = 1023 lb 1023 / 2.5 = 409 lb 5% Nonparametric Ultimate Load = 855 lb 855 / 2.1 = 407 lb < 409 lb ∴ Nonparametric governs

Equivalent Uniform Load Using Equivalent Bending Moments: For: P = total test load (Ib) and W = total load, uniformly distributed load (Ib)

$$M(unif.) = \frac{Wl}{8}, M(3rd - pt.) = \frac{Pl}{6}$$

$$\frac{Wl}{8} = \frac{Pl}{6} \therefore W = \frac{4P}{3}$$

 $W(unadjusted) = \frac{4P}{3} = \frac{4(407)}{3} = 543 \ lb$

Strength Adjustment Factor = 0.74 (See Section 12)

 $W(adjusted) = 543 \times 0.74 = 402 \ lb$



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Load at L/180 Deflection: 16.0/180 = 0.089 in Average Test Load at 0.089 in Deflection = 223 lb

Equivalent Uniform Load Using Equivalent Deflections: For: P = total test load (Ib) and W = total load, uniformly distributed load (Ib)

$$\Delta(unif) = \frac{5Wl^3}{384 EI}, \Delta(3rd - pt) = \frac{23Pl^3}{1296 EI}$$
$$\frac{5Wl^3}{384 EI} = \frac{23Pl^3}{1296 EI} \therefore W = \frac{184P}{135}$$
$$W(unadjusted) = \frac{184P}{135} = \frac{184(223)}{135} = 304 \, lb$$

Stiffness Adjustment Factor = 0.63 (See Section 12)

W(*adjusted*) = 304 x 0.63 = 192 *lb* < 402 *lb* ∴ deflection governs

Convert to lb/ft² (psf):

For W = total load (lb) and w = uniform load (psf),

w = W / Tributary Area / one deck board

Tributary Area = $(5.5 + 0.19) \times 16.0 \div 144 = 0.632 \text{ ft}^2$

Maximum uniform load rating for 16.0 in span, $w = \frac{192 lb}{0.632 ft^2} = 304 psf$

Test Series No. 2 - Rio Decking

Average Ultimate Test Load = 647 lb 647 / 2.5 = 259 lb 5% Nonparametric Ultimate Load = 579 lb 579 / 2.1 = 276 lb > 259 lb ∴ Average governs

Equivalent Uniform Load Using Equivalent Bending Moments: For: *P* = total test load (Ib) and *W* = total load, uniformly distributed load (Ib)

$$M(unif.) = \frac{Wl}{8}, M(3rd - pt.) = \frac{Pl}{6}$$
$$\frac{Wl}{8} = \frac{Pl}{6} \therefore W = \frac{4P}{3}$$
$$W(unadjusted) = \frac{4P}{3} = \frac{4(259)}{3} = 345 \ lb$$
Strength Adjustment Factor = 0.73 (See Section 12)

 $W(adjusted) = 345 \times 0.73 = 252 \ lb$



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Load at L/180 Deflection: 16.0/180 = 0.089 in Average Test Load at 0.089 in Deflection = 207 lb

Equivalent Uniform Load Using Equivalent Deflections: For: *P* = total test load (Ib) and *W* = total load, uniformly distributed load (Ib)

$$\Delta(unif) = \frac{5Wl^3}{384 EI}, \Delta(3rd - pt) = \frac{23Pl^3}{1296 EI}$$
$$\frac{5Wl^3}{384 EI} = \frac{23Pl^3}{1296 EI} \therefore W = \frac{184P}{135}$$
$$W(unadjusted) = \frac{184P}{135} = \frac{184(207)}{135} = 282 \ lb$$

Stiffness Adjustment Factor = 0.56 (See Section 12)

W(*adjusted*) = 282 x 0.56 = 158 *lb* < 252 *lb* ∴ deflection governs

Convert to lb/ft² (psf):

For W = total load (lb) and w = uniform load (psf),

w = W / Tributary Area / one deck board

Tributary Area = $(5.5 + 0.19) \times 16.0 \div 144 = 0.632 \text{ ft}^2$

Maximum uniform load rating for 16.0 in span, $w = \frac{158 lb}{0.632 ft^2} = 250 psf$



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 15

DECK BOARD STAIR TREAD TESTING

Re: ICC-ES[™] AC174, Section 4.0

General

The purpose of this testing was to evaluate the requirements for stair tread applications. The design load was a 300 lb concentrated load applied to a 4 square inch area at the mid-span of the stair tread (bending). The application was limited to a continuous deck board used over two adjacent spans (three supports) measuring 7 inches on-center.

Test Specimens

Twenty-eight full cross-section specimens were cut from production length *Rio* solid deck boards and were conditioned for a minimum of 40 hours at standard laboratory conditions.

Test Procedure

Testing was performed in a computer-monitored and -controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine with a three-point loading arrangement. Test specimens were supported on two 5/8 in radius steel support noses set at a 7.0 in span. The test load was applied at the leading edge of the specimen mid-distance between supports through a 2 inch square (4 square inch area) steel plate using a test speed of 0.082 in/min. Midspan deflection was measured using the crosshead movement of the test machine. Load and deflection were continuously recorded by the test machine. Deflection at 300 lb (design load) and ultimate test load were recorded. See photograph in Section 23 for test setup.



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Results

SOLID PROFILE STAIR TREAD - TESTED AT 7.0 IN SINGLE SPAN								
TEST DATE: 04/12/24		1						
SPECIMEN NO.	DEFLECTION AT 300 LB (in)	ULTIMATE LOAD (lb)						
1	0.038	1067						
2	0.039	844						
3	0.031	970						
4	0.038	891						
5	0.036	873						
6	0.037	911						
7	0.036	978						
8	0.039	950						
9	0.034	841						
10	0.037	900						
11	0.037	1186						
12	0.036	1050						
13	0.036	867						
14	0.035	845						
15	0.038	1010						
16	0.039	1045						
17	0.035	877						
18	0.035	915						
19	0.040	844						
20	0.038	882						
21	0.035	727						
22	0.036	844						
23	0.037	793						
24	0.038	876						
25	0.038	976						
26	0.040	919						
27	0.037	886						
28	0.038	903						
Minimum:	0.031	727						
Maximum:	0.040	1186						
Average:	0.037	917						
Standard Deviation:	0.002	94						
Coefficient of Variation:	5%	10%						



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 16

DECK BOARD STAIR TREAD RATING

Re: ICC-ES[™] AC174, Section 4.0

General

The following analysis using the test results evaluates a 300 lb stair tread design load for a *Rio* solid deck board installed over two or more continuous spans of 7.0 in or less. See Section 15 for test loads.

Average Ultimate Test Load = 917 lb 917 / 2.5 = 367 lb

5% Nonparametric Ultimate Load = 727 lb

727 / 2.1 = 346 lb < 367 lb \therefore Nonparametric governs

P (unadjusted) = 346 lb

Strength Adjustment Factor = 0.73 (See Section 12)

ICC-ES[™] AC174 specifies a 23% increase in allowable strength if a single span was tested.

P (adjusted) = 0.73 x 346 x 1.23 = 311 lb ≥ 300 lb ... ok

Average Deflection at 300 lb = 0.037 in

Stiffness Adjustment Factor = 0.56 (See Section 12)

ICC-ES[™] AC174 specifies a 39% stiffness adjustment if a single span was tested

Adjusted deflection = 0.037 in / 0.56 / 1.39 = 0.048 in

Allowable deflection = 0.125 in \ge 0.048 in \therefore **ok**



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 17

CREEP RECOVERY

Re: ICC-ES[™] AC174, Section 4.0

General

The purpose of this testing was to evaluate creep-recovery in accordance with Section 5.4 of ASTM D7032.

Test Specimens

Three full cross-section test specimens were cut to 20 in lengths from production length *Rio* grooved deck boards.

Test Setup

Each test specimen was tested with a four point loading arrangement. The specimens were supported on two 1/2 inch radius steel rods placed at a 16.0 inch span. The loading span was one-third of the bending span and utilized 1/2 inch radius loading noses. The load was applied with measured dead weights. Midspan deflection was measured with a dial indicator accurate to 0.001 in. See photograph in Section 23 for test setup.

Test Procedures

Testing was performed using the methods described by ASTM D7032. Test load was applied to impose a bending stress equal to or greater than the stress at two-times the design load (100 psf) and increased for applicable test load adjustment factors. After holding two times the adjusted design load for 24 hours, the load was removed to check recovery.

Derivation of Test Load

A conservative end-use adjustment factor of 0.70 was used for testing prior to the completion of the actual end-use adjustment factor testing. Actual strength end-use adjustment factor was 1.00.

Unadjusted design load = 100 psf

Strength end-use adjustment factor = 0.70 (See Section 12)

Adjusted design load = 100 psf ÷ 0.70 = 143 psf

Test load for bending stress at two-times the adjusted design load:

Uniform Load Bending Moment, $M = wL^2 \div 8$

$$M = 2x \frac{\frac{143}{144} x (5.5 + 0.19) x 16.0^2}{8} = 362 \text{ in} \cdot lb$$



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Load for Third-Point Loading (M = PL/6)

$$M = \frac{PL}{6} \therefore P = \frac{6M}{L} = \frac{6 \times 362}{16} = 136 \ lb$$

The actual test loads used were 138 lb.

Test Results

SPECIMEN NO. 1 - 16-RIO-G-B							
TEST LOAD	DEFLECTION (in)	NOTES					
Zero Load	0.000	Initial reading					
2x Design Load (138 lb)	0.065	Initial application of load					
2x Design Load (138 lb)	0.098	After 24 hours					
Zero Load	0.004	96% recovery after 24 hours					

SPECIMEN NO. 2 - 17-RIO-G-O							
TEST LOAD	DEFLECTION (in)	NOTES					
Zero Load	0.000	Initial reading					
2x Design Load (138 lb)	0.060	Initial application of load					
2x Design Load (138 lb)	0.093	After 24 hours					
Zero Load	0.008	91% recovery after 24 hours					

SPECIMEN NO. 3 - 18-RIO-G-R							
TEST LOAD	DEFLECTION (in)	NOTES					
Zero Load	0.000	Initial reading					
2x Design Load (138 lb)	0.066	Initial application of load					
2x Design Load (138 lb)	0.099	After 24 hours					
Zero Load	0.015	85% recovery after 24 hours					

Test Conclusion

The test specimens recovered an average 91% of the test load deflection (\geq 75%), and the maximum unrecovered deflection did not exceed 1/16 in.



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 18

DURATION OF LOAD

Re: ICC-ES[™] AC174, Section 3.11

General

The purpose of this testing was to evaluate duration of load effect in accordance with Section 3.11 of ICC-ES[™] AC174 and Section 5.10.2 of ASTM D7031. Under a constant test load, deflection was measured and graphed with respect to time (creep) for 90 days. Conditions of acceptance are no failures and no sign of tertiary creep.

Test Specimens

Fifteen full cross-section test specimens were cut to 20 in lengths from production length *Rio* grooved deck boards.

Test Setup

Each test specimen was tested with a four point loading arrangement. The specimens were supported on two 1/2 inch radius steel rods placed at a 16 inch span. The loading span was one-third of the bending span and utilized 1/2 inch radius loading noses. The load was applied with measured dead weights. Midspan deflection was measured with a dial indicator accurate to 0.001 in. See photographs in Section 23 for test setup.

Test Procedure

Test load was applied to impose a bending stress equal to or greater than the stress at two-times the design load (100 psf) and increased for applicable test load adjustment factors. The test load was held for 90 days from 01/08/24 through 04/08/24. Deflection measurements were recorded at regular intervals to adequately describe the creep curve for the duration of testing.

Test Load

Test load for bending stress at two-times the adjusted design load = 136 lb Reference Section 17, Creep Recovery for derivation of test load. Actual test loads were 138 lb.



TEST REPORT FOR NORX, LLC

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Test Results









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Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Conclusion

Test data does not reflect any evidence of tertiary creep (i.e. increasing creep rate), and there were no failures.

SECTION 19

MECHANICAL FASTENER BY PULL THROUGH RESISTANCE

Re: ICC-ES[™] AC174, Section 4.1.4

General

The purpose of this testing was to determine the product's fastener pull-through resistance, or the direct force required to pull a fastener head through the deck board. This value is used in conjunction with the fastener withdrawal value recognized for the support framing material to establish wind uplift resistance. Testing was conducted using the methods described in ASTM D1761.

Test Specimens

Ten test specimens were cut from *Rio* solid deck boards. One #8 x 1-5/8" Stainless Steel Screw (9 TPI, 1.592 in overall length, 0.160 in major dia., 0.099 in minor dia., 0.116 in shank dia., 0.225 in head dia., star drive, trim head, type 17 point) was placed in each test specimen, mid-width (through minimum thickness) so that its head was flush with the top edge (walking surface) of the specimen.

Test Procedure

Mechanical fastener pull-through testing was performed using the methods described by ASTM D1761. Testing was performed in a computer-monitored and -controlled SATEC Unidrive, Model MII 50 UD Universal Testing Machine. Each specimen was rigidly restrained in the test machine, and the fastener was placed in tension until it pulled entirely through the specimen's depth or until the specimen no longer sustained applied load. The test speed was controlled by using a loading rate of 0.10 in/min. See photograph in Section 23 for typical test setup.



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Results

#8 X 1-5/8" Stainless Steel Deck Screw								
Test Date: 12/29/23								
SPECIMEN ID	ULTIMATE	DEVIATION	MODE OF FAILURE					
	LOAD (lb)	FROM AVERAGE						
1-Rio-S-G	493	-0.4%						
2-Rio-S-B	487	+0.8%						
3-Rio-S-O	492	-0.2%	Screw nead started pulling through					
4-Rio-S-R	474	+3.4%	began decreasing					
5-Rio-S-G	494	-0.7%						
6-Rio-S-B	487	+0.8%						
7-Rio-S-O	504	-2.7%	Deck board broke along the longitudinal axis					
8-Rio-S-R	483	+1.6%	Screw head started pulling through					
9-Rio-S-G	492	-0.2%	each board and then applied load					
10-Rio-S-B	502	-2.3%	began decreasing					
Average:	491							
Allowable Capacity ¹ :	164							

¹ Allowable fastener pull-through capacity in accordance with Section 5.5 of ASTM D7032 = Average ultimate load divided by a factor of 3.0.

Wind Uplift Resistance Analysis

The purpose of this analysis was to determine the wind uplift resistance of Solid Deck Boards using the allowable fastener pull-through capacities determined from testing, compared to the allowable withdrawal value, calculated in accordance with the NDS as well as the allowable strength value determined by flexural testing.

Based on two fasteners per deck board, per each support, the tributary deck area per fastener (A_t) is as follows:

 $A_t = W_t \times S / 2$, where:

Tributary width, $(W_t) = 5.5$ in (deck board width) + 0.19 in (gap) = 5.69in Span, (S) = 16.0 in

 A_t = 5.69 in x 16.0 in / 2 / 144 in²/ft² = 0.316 ft²

Maximum wind uplift rating based on pull-through testing, w_{pt}:

w_{pt} = 164 lb / 0.316 ft² = 519 psf



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Maximum wind uplift rating based on NDS calculated withdrawal values, wadjusted:

Calculated withdrawal values for wood screws,

W = 2850 $G^2 D$ (equation 12.2-2 of NDS), where:

Bulk Specific Gravity of Wood, (G) = 0.55 for Southern Pine from Table 12.3.3A

Major Diameter of Fastener, (D) = 0.160 in

W = 138 lb/in

Penetration Depth, (P) = $L_{fastener} - T_{board} = 1.59$ in - 0.92 in = 0.67 in

Uniform Load, $(w_{calculated}) = W \times P / A_t = 138 \text{ lb/in } \times 0.67 \text{ in } / 0.316 \text{ ft}^2 = 293 \text{ psf}$

NDS Adjustment Factors from Table 11.3.1:

Load Duration (C_D) = 1.6 from 11.3.2 & Table 2.3.2, Footnote 2

Wet Service (C_m) = 0.7 from 11.3.3 & Table 11.3.3, Footnote 2

Temperature (Ct) = 0.7 from 11.3.4 & Table 11.3.4 for wet in-service conditions up to $$125^\circ F$$

w_{adjusted} = 293 x 1.6 x 0.7 x 0.7 = 230 psf

Maximum uniform load rating based on deck board strength, w_{strength} (See Section 13 for deck board strength test data):

Average Ultimate Test Load = 647 lb 647 / 2.5 = 259 lb 5% Nonparametric Ultimate Load = 579 lb 579 / 2.1 = 276 lb > 259 lb ∴ Average governs

Equivalent Uniform Load Using Equivalent Bending Moments:

For: P = total test load (lb) and W = total load, uniformly distributed load (lb)

$$M(unif.) = \frac{Wl}{8}, M(3rd - pt.) = \frac{Pl}{6}$$
$$\frac{Wl}{8} = \frac{Pl}{6} \therefore W = \frac{4P}{3}$$
$$W(unadjusted) = \frac{4P}{3} = \frac{4(259)}{3} = 345 \ lb$$

Strength Adjustment Factor = 0.73 (See Section 12 for Deck Board End-Use Adjustments)

 $W(adjusted) = 345 \times 0.73 = 252 \ lb$

Tributary Area = $(5.5 + 0.19) \times 16.0 \div 144 = 0.632 \text{ ft}^2$

w_{strength} = 252 lb / 0.632 ft² = 399 psf



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

w_{adjusted} < w_{strength} < w_{pt} ... NDS Strength Governs

Maximum Wind Uplift Rating Using #8 X 1-5/8" Stainless Steel Face Fasteners = 230 psf

Allowable Fastener Capacity (based on w_{pt} and $w_{adjusted}$) = 230 psf x 0.316 ft² = 73 lb / screw

SECTION 20

MECHANICAL FASTENER BY WIND UPLIFT RESISTANCE

Re: ICC-ES[™] AC174, Section 4.1.4

General

The purpose of this testing was to determine the ultimate uplift resistance of installed *Rio* grooved deck boards using the Plastic T-Clip or the Stainless Steel T-Clip hidden fastener systems. The outboard edge of the first deck board was fastened with the Decking Starter Clip and the outboard edge of the last deck board was face fastened with one #10 x 3" coated steel screw per joist. Testing was conducted in accordance with Section 4.1.4 of AC174 using the methods described in ASTM E330.

Test Specimens

Two sets of fifteen full cross-section specimens were cut to lengths of 51 in from production length *Rio* grooved deck boards to address a three-span application using four support joists on 16.0 in centers for testing.

Test Setup

Six deck mock-ups were constructed from 2x8 MCA preservative-treated Southern Yellow Pine lumber. Each mock-up was fabricated as a three-span condition with four 34 in long joists spaced at 16.0 in on center, was approximately 37 in by 49-1/2 in, and contained five deck boards each (51 in long) with 1/16 in (stainless steel T-Clip) or 3/16 in (Plastic T-Clip) spacing between boards. To maintain air pressure on the deck boards during testing, a layer of 4-mil thick polyethylene plastic was loosely draped between the joists of the mock-up prior to securing the deck boards to the deck mock-up. Deck boards were fastened to the deck mock-up in accordance with the manufacturer's installation instructions. The outboard edge of the first deck board was fastened with the Decking Starter Clip, installed using the included #8 x 1-5/8" Stainless Steel Screw (9 TPI, 1.592 in overall length, 0.160 in major dia., 0.099 in minor dia., 0.116 in shank dia., 0.225 in head dia., star drive, trim head, type 17 point), and the outer edge of the last deck board was face fastened with one #10 x 3" coated steel screw (9 TPI, 3.039 in overall length, 0.200 in major dia., 0.136 in minor dia., 0.150 in shank dia., 0.348 in head dia., star drive, trim head, type 17 point) per joist. At all other deck board to joist locations either one Plastic T-Clip (three deck mock ups) or Stainless Steel T-Clip (three deck mock ups) hidden deck fasteners were installed using the included #8 x 1-5/8" Stainless Steel Screw. Refer to drawings in Section 24 and photographs in Section 23 for additional details.



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Test Procedures

Artificial Weathering Procedure

Plastic T-Clip specimens were subjected to 2000 hours of Xenon-Arc artificial weathering exposure from 10/13/23 through 01/24/24 in an Atlas Ci4000 or Ci5000 Xenon Weather-Ometer[®] in accordance with ASTM D2565 using Test Cycle 1. Exposure conditions were as follows:

Cycle: 102 minutes of light only followed by 18 minutes of light with water spray Black Panel Temp: $63 \pm 2^{\circ}$ C Irradiance: 0.35 $\pm 0.02 \text{ W/m}^2$ at 340 nm

Uplift testing was performed in factory ambient conditions. Test specimens were assembled to the deck mock-ups and tested within two hours of removal from the laboratory conditions. For the Plastic T-Clip hidden fastener system, the deck board specimens were installed with both weathered (half the required clips) and un-weathered (remaining half of required clips) Plastic T-Clips. The mock-up deck assembly was inverted and placed upside down on a vacuum chamber constructed of structural steel channels. The lumber framing of the mock-up rested on the vacuum chamber walls; test specimens were not supported by the vacuum chamber walls. The mock-up to chamber interface was sealed for air-tightness. The plastic-covered underside of all deck boards was exposed to atmospheric pressure. A negative static air pressure (vacuum) was applied to the vacuum chamber, creating an uplift pressure on the underside of all deck boards simultaneously. Test pressure was applied starting at 100 psf and increased in increments of 25 psf until deck board failure. Each load increment was held for 10 seconds. Differential pressure was measured using an electronic, differential pressure transducer.

Test Results

Test Series No. 1 Plastic T-Clip Hidden Fastener System						
TEST DATE: 04/11/24						
SPECIMEN	PRESSURE AT		MODE OF FAILURE			
1 1	476	450	Starter clip bent and pulled over			
2	433	400	the screw			
3	445	425				
	Average:	425				

¹Held for 10 seconds



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Maximum sustained uplift load DOES NOT take into account the weight of the deck board based on the inverted condition of the assembled deck mockup. In a typical installation of the deck board, the self-weight of the decking would help resist uplift. However, in the inverted assembled deck mockup, the self-weight was not resisting uplift but actually contributing to the failure of the assembly. Therefore, due to the assembly setup, twice the deck board self-weight must be added to the measured sustained uplift load to determine the actual uplift load the deck boards can resist.

Weight of grooved deck board in 51 in length = 8.6 lb

Five decks boards per test specimen, 8.6 lb x 5 = 43 lb

Tributary Area of assembled deck mock-up = 28.38 in wide x 51 in span \div 144 in² / ft² = 10.1 ft²

Dead Load of grooved deck board = Total Weight / Tributary Area = 43 lb / 10.1 ft² = 4.3 psf

Additional Uplift Resistance = 2 x Product Dead Load = 2 x 4.3 psf = 8.6 psf

Total Uplift Load, w_{uplift} = 8.6 psf + 425 psf = 434 psf

Allowable uplift capacity in accordance with Section 4.1.4 of AC174:

Allowable uplift capacity = Average ultimate load divided by a factor of 3.0.

w_{uplift} = 434 / 3.0 = 145 psf

The allowable capacity determined from uplift testing, w_{uplift}, shall be compared to the withdrawal value specified in the NDS. Based on one fastener per deck board, per each support, the tributary deck area per fastener (A_t) is as follows:

 $A_t = W_t \times S$, where:

Tributary width, $(W_t) = 5.5$ in (deck board width) + 0.19 in (gap) = 5.69 in Span, (S) = 16.0 in

 $A_t = 5.69 \text{ in x } 16.0 \text{ in } / 144 \text{ in}^2/\text{ft}^2 = 0.632 \text{ ft}^2$



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Below are NDS calculated withdrawal values (W) for wood screws.

W = 2850 $G^2 D$ (equation 12.2-2 of NDS), where:

Bulk Specific Gravity of Wood, (G) = 0.55 for Southern Pine from Table 12.3.3A

Major Diameter of Fastener, (D) = 0.160 in

W = 138 lb/in

Penetration Depth, (P) = $L_{fastener}$ - T_{T-Clip} = 1.59 in - 0.46 in = 1.13 in

Uniform Load, $(w_{calculated}) = W \times P / A_t = 138 \text{ lb/in x } 1.13 \text{ in } / 0.632 \text{ ft}^2 = 247 \text{ psf}$

NDS Adjustment Factors from Table 11.3.1:

Load Duration (C_D) = 1.6 from 11.3.2 & Table 2.3.2, Footnote 2

Wet Service (C_m) = 0.7 from 11.3.3 & Table 11.3.3, Footnote 2

Temperature (Ct) = 0.7 from11.3.4 & Table 11.3.4 for wet in-service conditions up to 125°F

w_{adjusted} = 247 x 1.6 x 0.7 x 0.7 = 194 psf

w_{uplift} < w_{adjusted} ... w_{uplift} Governs Maximum wind uplift rating = 145 psf

Test Series No. 2

Stainless Steel T-Clip Hidden Fastener System

TEST DATE: 12/18/23					
SPECIMEN NO.	PRESSURE AT FAILURE (psf)	MAXIMUM SUSTAINED UPLIFT PRESSURE (psf) ¹	MODE OF FAILURE		
1	279	250	T-clip bent inward and released		
2	248	225	deck boards		
3	215	200			
	Average:	225			

¹Held for 10 seconds



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Maximum sustained uplift load DOES NOT take into account the weight of the deck board based on the inverted condition of the assembled deck mockup. In a typical installation of the deck board, the self-weight of the decking would help resist uplift. However, in the inverted assembled deck mockup, the self-weight was not resisting uplift but actually contributing to the failure of the assembly. Therefore, due to the assembly setup, twice the deck board self-weight must be added to the measured sustained uplift load to determine the actual uplift load the deck boards can resist.

Weight of grooved deck board in 51 in length = 8.8 lb

Five decks boards per test specimen, 8.8 lb x 5 = 44 lb

Tributary Area of assembled deck mock-up = 28 in wide x 51 in span \div 144 in² / ft² = 9.9 ft²

Dead Load of grooved deck board = Total Weight / Tributary Area = 44 lb / 9.9 ft^2 = 4.4 psf

Additional Uplift Resistance = 2 x Product Dead Load = 2 x 4.4 psf = 8.8 psf

Total Uplift Load, w_{uplift} = 8.8 psf + 225 psf = 234 psf

Allowable uplift capacity in accordance with Section 4.1.4 of AC174:

Allowable uplift capacity = Average ultimate load divided by a factor of 3.0.

w_{uplift} = 234 / 3.0 = 78 psf

The allowable capacity determined from uplift testing, w_{uplift}, shall be compared to the withdrawal value specified in the NDS. Based on one fastener per deck board, per each support, the tributary deck area per fastener (A_t) is as follows:

 $A_t = W_t \times S$, where:

Tributary width, $(W_t) = 5.5$ in (deck board width) + 0.06 in (gap) = 5.56 in Span, (S) = 16.0 in

 $A_t = 5.56$ in x 16.0 in / 144 in²/ft² = 0.618 ft²



TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

Below are NDS calculated withdrawal values (W) for wood screws.

W = 2850 $G^2 D$ (equation 12.2-2 of NDS), where:

Bulk Specific Gravity of Wood, (G) = 0.55 for Southern Pine from Table 12.3.3A

Major Diameter of Fastener, (D) = 0.160 in

W = 138 lb/in

Penetration Depth, (P) = $L_{fastener} - T_{T-Clip} = 1.59$ in - 0.04 in = 1.55 in

Uniform Load, $(w_{calculated}) = W \times P / A_t = 138 \text{ lb/in } \times 1.55 \text{ in } / 0.618 \text{ ft}^2 = 346 \text{ psf}$

NDS Adjustment Factors from Table 11.3.1:

Load Duration (C_D) = 1.6 from 11.3.2 & Table 2.3.2, Footnote 2

Wet Service (C_m) = 0.7 from 11.3.3 & Table 11.3.3, Footnote 2

Temperature (Ct) = 0.7 from11.3.4 & Table 11.3.4 for wet in-service conditions up to 125°F

w_{adjusted} = 346 x 1.6 x 0.7 x 0.7 = 271 psf

wuplift < wajusted ... wuplift Governs Maximum wind uplift rating = 78 psf



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TEST REPORT FOR NORX, LLC

Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 21

WIND RESISTANCE

Re: ICC-ES[™] AC524, Section 3.8

General

The wind resistance evaluation was performed by Intertek B&C Inc. and is accredited to perform testing per ASTM D5206.

Summary of Test Results

Test Series No. 1 - London Cladding, Vertical

Max Sustained Negative = 113.3 psf Max Sustained Positive = 150.0 psf (Reference Intertek B&C Report No. P0941.03-109-40)

Test Series No. 2 - Los Angeles Cladding, Horizontal

Max Sustained Negative = 138.3 psf Max Sustained Positive = 200.0 psf (Reference Intertek B&C Report No. P0941.04-109-40)

Test Series No. 3 - New York Cladding, Horizontal

Max Sustained Negative = 196.7 psf Max Sustained Positive = 200.0 psf (Reference Intertek B&C Report No. P0941.05-109-40)

Test Series No. 4 - Rome Cladding, Vertical

Max Sustained Negative = 121.7 psf Max Sustained Positive = 150.0 psf (Reference Intertek B&C Report No. P0941.06-109-40)



TEST REPORT FOR NORX, LLC Report No.: P0941.01-119-19 R0 Date: 08/08/24

SECTION 22

CONCLUSION

Testing substantiates the following span rating for solid and grooved deck boards:

16 / 100 (16.0 in span and 100 psf) for deck boards - no residential use limitation.

Testing substantiates the following span for solid deck boards used as stair treads:

7.0 in stair tread span (minimum 2-span condition) - no residential use limitation.

SECTION 23 PHOTOGRAPHS



Photo No. 1 Typical Sampling Mark



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Photo No. 2 Typical ASTM D6109 Testing Setup



Photo No. 3 Typical Testing Specimens in Weathering Chamber



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Photo No. 4 Typical ASTM D790 Testing Setup



Photo No. 5 Typical Stair Tread Testing Setup



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Photo No. 6 Typical Creep Recovery / Duration of Load Testing Setup



Photo No. 7 Typical Mechanical Fastener by Pull Through Resistance Testing Setup



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Photo No. 8 Typical Mechanical Fastener by Wind Uplift Resistance Testing Setup

SECTION 24 DRAWINGS

The "As-Built" drawings, which follow, have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.
NORX COMPOSITE SOLUTIONS QA DEPARTMENT PARIS GROOVED SPEC SHEET





Inspection Criteria 1. Visual Check 1.1 Type of profile 1.2 Surface 1.3 Color 1.4 Sanding Structure 1.5 Crosscut & Lengthcut 1.6 Core Visual 2. Dimension Check 2.1 Control section and length 3. Measure 3.1 Weight 3.2 Density 3.3 Mechanical strength

Technical Details	
Density	1.3g/m3 (Standard: ASTM D792-13 Method B)
Tensile strength	25.8 MPa (Standard: ASTM D638-14)
Flexural strength	36.4Mp (Standard: ASTM D790-10)
Flexural Modulus	3680Mpa (Standard: ASTM D790-10)
Impact strength	88.46/m (Standard: ASTM D4812-11)
Shore hardness	D65 (Standard: ASTM D2240-05)
Water absorption	0.59% (Standard: ASTM D570-98)
Thermal expansion	32.08 x10-6 (Standard: ASTM D696 - 08)
Slip resistant	R11 (Standard: DIN 51130:2014)

Dimensions	23mm x 140mm x 365cm (12ft)
	23mm x 140mm x 487cm (16ft)
Colours	Louvre
	Eiffle
	Elysees
	Triomphe
Doc. No.	2103-011-PAR-GR
Date	03.2021

intertek

Test sample complies with these details. Deviations are noted. Report #______P0941.01-119-19 Date_______Tech_____Tech_____TC-_____

NORX COMPOSITE SOLUTIONS QA DEPARTMENT RIO SQUARE SPEC SHEET



Technical Details		
Density	1.3g/m3 (Standard: ASTM D792-13 Method B)	
Tensile strength	24.9 MPa (Standard: ASTM D638-14)	
Flexural strength	34.5Mp (Standard: ASTM D790-10)	
Flexural Modulus	3510Mpa (Standard: ASTM D790-10)	
Impact strength	88J/m (Standard: ASTM D4812-11)	
Shore hardness	D70 (Standard: ASTM D2240-05)	
Water absorption	0.63%(Standard: ASTM D570-98)	
Thermal expansion	33.12 x10-6 (Standard: ASTM D696 - 08)	
Slip resistant	R11 (Standard: DIN 51130:2014)	

Dimensions	23mm x 140mm x 365cm (12ft)
	23mm x 140mm x 487cm (16ft)
	23mm x 140mm x 610cm (20ft)
Colours	Copacabana
	Corcovado
	Ipanema
	Leblon
Doc. No.	2103-011-RIO-SQ
Date	03.2021

intertek

Test sample complies with these details. Deviations are noted. Report # P0941.01-119-19 Date 7/15/24 Tech STG



NORX COMPOSITE SOLUTIONS QA DEPARTMENT RIO GROOVED SPEC SHEET





Technical Details		
Density	1.3g/m3 (Standard: ASTM D792-13 Method B)	
Tensile strength	24.9 MPa (Standard: ASTM D638-14)	
Flexural strength	34.5Mp (Standard: ASTM D790-10)	
Flexural Modulus	3510Mpa (Standard: ASTM D790-10)	
Impact strength	88J/m (Standard: ASTM D4812-11)	
Shore hardness	D70 (Standard: ASTM D2240-05)	
Water absorption	0.63%(Standard: ASTM D570-98)	
Thermal expansion	33.12 x10-6 (Standard: ASTM D696 - 08)	
Slip resistant	R11 (Standard: DIN 51130:2014)	

Dimensions	23mm x 140mm x 365cm (12ft)
	23mm x 140mm x 487cm (16ft)
	23mm x 140mm x 610cm (20ft)
Colours	Copacabana
	Corcovado
	Ipanema
	Leblon
Doc. No.	2103-011-RIO-GR
Date	03.2021

intertek

Test sample complies with these details. Deviations are noted. Report # <u>P0941.01 -119</u> Date <u>7/15/24</u> Tech <u>STG-</u>



QA DEPARTMENT

Los Angeles Square



SPEC SHEET

DOC NO.



2103-011-LOA



London Square



SPEC SHEET



TECHNICAL DETAILS

DENSITY	1.3g/m3 (Standard: ASTM D792-13 Method B)	
TENSILE STRENGTH	24.9 MPa (Standard: ASTM D638-14)	nrarrak
FLEXURAL STRENGTH	34.5Mp (Standard: ASTM D790-10)	
FLEXURAL MODULUS	3510Mpa (Standard: ASTM D790-10)	Test sample complies with these details
IMPACT STRENGTH	88J/m (Standard: ASTM D4812-11)	Deviations are noted.
SHORE HARDNESS	D70 (Standard: ASTM D2240-05)	Report # P0941 01-119-19
WATER ABSORPTION	0.63% (Standard: ASTM D570-98)	
THERMAL EXPANSION	33.12 x10-6 (Standard: ASTM D696 - 08)	Date /11/24 Tech STC.
SLIP RESISTANT	R11 (Standard: DIN 51130:2014)	

DIMENSIONS

26mm x 219 mm x 487cm (1 in x 8 in x 16 ft)

COLOURS

Hyde Park Mayfair

INSPECTION CRITERIA

DOC NO.

1. Visual Check
1.1 Type of profile
1.2 Surface
1.3 Color
1.4 Sanding Structure
1.5 Crosscut & Lengthcut
1.6 Core Visual

2103-011-LON

2. Dimension Check
2.1 Control section and length
3. Measure
3.1 Weight
3.2 Density
3.3 Mechanical strength



QA DEPARTMENT

New York Square



SPEC SHEET





156mm (≈ 6.14in) 126mm (≈ 4.96in) 21mm (≈ 0.82in)

MEASURES (mm / in)

16mm (= 0.62in) 13.7mm (= 0.53in) 10mm (= 0.4in) 9mm (= 0.35in) 8mm (= 0.31in) 7.4mm (= 0.3in) 6.8mm (= 0.26in) 6.5mm (= 0.25in) 0.7mm (= 0.02in)

TECHNICAL DETAILS

C	DENSITY	1.3g/m3 (Standard: ASTM D792-13 Method B)	
т	TENSILE STRENGTH	24.9 MPa (Standard: ASTM D638-14)	
F	LEXURAL STRENGTH	34.5Mp (Standard: ASTM D790-10)	
F	FLEXURAL MODULUS	3510Mpa (Standard: ASTM D790-10)	Tes
U.	MPACT STRENGTH	88J/m (Standard: ASTM D4812-11)	
s	SHORE HARDNESS	D70 (Standard: ASTM D2240-05)	
V	WATER ABSORPTION	0.63% (Standard: ASTM D570-98)	Repo
1	THERMAL EXPANSION	33.12 x10-6 (Standard: ASTM D696 - 08)	Date
5	SLIP RESISTANT	R11 (Standard: DIN 51130:2014)	

intertek

Test sample complies with these details. Deviations are noted. teport # $\frac{10941.01-119-19}{7041.01-119-19}$ Date $\frac{701.24}{100}$ Tech SIC

DIMENSIONS

21mm x 156 mm x 487cm (1 in x 6 in x 16ft)

COLOURS

Brooklyn Empire State

INSPECTION CRITERIA

1. Visual Check
1.1 Type of profile
1.2 Surface
1.3 Color
1.4 Sanding Structure
1.5 Crosscut & Lengthcut
1.6 Core Visual

2. Dimension Check
2.1 Control section and length
3. Measure
3.1 Weight
3.2 Density
3.3 Mechanical strength

DOC NO.

2103-011-NEW



QA DEPARTMENT

Rome Square



SPEC SHEET



1.6 Core Visual

2103-011-ROM

DOC NO.

3.3 Mechanical stre

NORX COMPOSITE SOLUTIONS QA DEPARTMENT CLADDING STAINLESS STEEL CLIP SPEC SHEET







Dimensions	40mm
Colours	Black
Doc. No.	2103-011-CLAD-SSC1
Date	03.2021

intertek Test sample complies with these details. Deviations are noted. Report # Po941.01-119-19 Tech_STC-Date 7/15/24

NORX COMPOSITE SOLUTIONS QA DEPARTMENT CLADDING STAINLESS STEEL STARTER CLIPS SPEC SHEET





Inspection Criteria		
1. Visual Check		
1.1 Type of profile		
1.2 Surface		
1.3 Color		
1.4 Sanding Structure		
1.5 Crosscut & Lengthcut		
1.6 Core Visual		
2. Dimension Check		
2.1 Control section and length		
3. Measure		
3.1 Weight		
3.2 Density		
3.3 Mechanical strength		

Dimensions	40mm
Colours	Black
Doc. No.	2103-011-CLAD-SSS1
Date	03.2021

intertek

Tech TG Date 7/15/24

NORX COMPOSITE SOLUTIONS QA DEPARTMENT DECKING PLASTIC CLIPS SPEC SHEET







Inspection Criteria
1. Visual Check
1.1 Type of profile
1.2 Surface
1.3 Color
1.4 Sanding Structure
1.5 Crosscut & Lengthcut
1.6 Core Visual
2. Dimension Check
2.1 Control section and length
3. Measure
3.1 Weight
3.2 Density
3.3 Mechanical strength

Dimensions	40mm	
Colours	Black	
Doc. No.	2103-011-DK-PC	
Date 03.2021		

intertek

Test sample complies with these details. Deviations are noted. Report # P0941.01 -119-19 Date 7/15/24 Tech STG



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SECTION 25

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/08/24	N/A	Original Report Issue