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SEOHAN ANTAMINE CO. LTD
TEST REPORT

SCOPE OF WORK
ICC-ES AC92 SECTION 4.7.1.1 TESTING ON HPL, WALL CLADDING

REPORT NUMBER
L3571.04-109-44

TEST DATE(S)
12/02/20 - 12/03/20

ISSUE DATE 01/14/21
REVISED DATE 01/15/21

RECORD RETENTION END DATE
12/03/24

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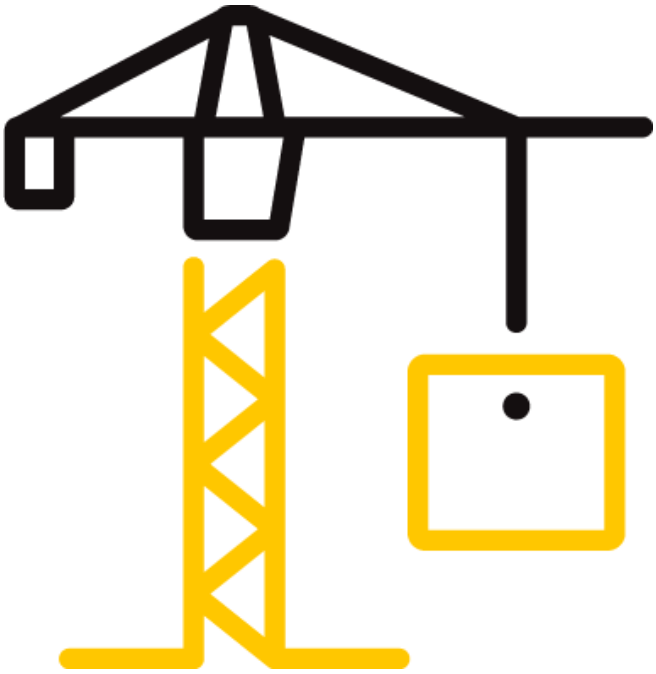

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TEST REPORT FOR SEOHAN ANTAMINE CO. LTD

Report No.: L3571.04-109-44
Revision: 1
Date: 01/15/21

REPORT ISSUED TO

SEOHAN ANTAMINE CO. LTD
165B-6L Namdong Industrial Complex
Incheon, Namdong-Gu 21688
SOUTH KOREA

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Seohan Antamine Co. Ltd to perform testing in accordance with ICC-ES AC92 Section 4.7.1.1 on their HPL, wall cladding. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Richard E. Hartman III	**REVIEWED BY:**	Timothy J. McGill
TITLE:	Technician – Product Testing	**TITLE:**	Manager – Product Testing
SIGNATURE:	Digitally Signed by: Richard Hartman III	**SIGNATURE:**	Digitally Signed by: Timothy J. McGill
DATE:	01/15/21	**DATE:**	01/15/21

REH:nls

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SECTION 2
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

AC92, *Acceptance Criteria For Polymer-Based, Polymer-Modified and High-Pressure Laminate Exterior and Interior Wall Cladding*

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

SECTION 3
MATERIAL SOURCE

Test specimen(s) were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

SECTION 4
EQUIPMENT

Tape Measure Verification: 63788
Weather Station: INT00549
Control Panel: 005644
Linear Transducers: 64367, 64278, 64306, 62182, 62354

SECTION 5
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Timothy J. McGill	Intertek B&C
Richard E. Hartman III	Intertek B&C

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SECTION 6
TEST SPECIMEN DESCRIPTION

Product Type: Wall Cladding
Series/Model: HPL

Product Size(s):

Test Specimens #1 - #6:

OVERALL AREA:	**WIDTH**		**HEIGHT**	
3.0 m^2 (32.0 ft^2)	**millimeters**	**inches**	**millimeters**	**inches**
Overall size	1219	48	2438	96

Wall Construction: The test specimen was installed onto a test wall constructed from 16-gauge, 2x6 steel studs spaced 16" on center. A 2 mil thick plastic film was loosely draped over the test wall to enable attainment of pressure. The wall was wrapped with #2 Spruce-Pine-Fir nominal 2x8 lumber.

Panel Construction and Installation: The interior and exterior skin was constructed from a 0.006" thick layer of high pressure laminate. The core was constructed from 0.300" thick Kraft paper impregnated with melamine resin. The overall thickness for the panel measured 0.312". Each panel was pre-drilled and installed using #8 x 1-1/4" self-drilling pancake head screws spaced 3/4" from the edges and spaced 16" on center horizontally and vertically.

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SECTION 7
TEST RESULTS

The temperature during testing was 14 - 20°C (57 - 70°F). All loads were held for 10 seconds. All deflections and permanent sets were taken across the midspan of the panel. Reference Sketch #1 for deflection locations. The results are tabulated as follows:

Test Specimen #1: Negative Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
-7182 Pa (-150.0 psf)	23.4 mm (0.92")	2.5 mm (0.10")	1
-7661 Pa (-160.0 psf)	25.9 mm (1.02")	3.3 mm (0.13")	1
-8140 Pa (-170.0 psf)	17.3 mm (0.68")	4.1 mm (0.16")	1, 2
-8618 Pa (-180.0 psf)	18.5 mm (0.73")	4.3 mm (0.17")	1
-9097 Pa (-190.0 psf)	19.8 mm (0.78")	4.3 mm (0.17")	1
-9576 Pa (-200.0 psf)	21.1 mm (0.83")	4.6 mm (0.18")	1
-10,055 Pa (-210.0 psf)	N/A	N/A	3

Test Specimen #2: Negative Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
-8618 Pa (-180.0 psf)	18.0 mm (0.71")	1.8 mm (0.07")	1
-9097 Pa (-190.0 psf)	18.0 mm (0.71")	2.3 mm (0.09")	1
-9576 Pa (-200.0 psf)	19.6 mm (0.77")	2.3 mm (0.09")	1
-10,055 Pa (-210.0 psf)	21.1 mm (0.83")	2.5 mm (0.10")	1
-10,534 Pa (-220.0 psf)	22.9 mm (0.90")	3.0 mm (0.12")	1
-11,012 Pa (-230.0 psf)	24.6 mm (0.97")	3.3 mm (0.13")	1
-11,491 Pa (-240.0 psf)	N/A	N/A	4

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Test Specimen #3: Negative Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
-8618 Pa (-180.0 psf)	16.8 mm (0.66")	2.5 mm (0.10")	1
-9097 Pa (-190.0 psf)	18.0 mm (0.71")	2.5 mm (0.10")	1
-9576 Pa (-200.0 psf)	19.1mm (0.75")	2.8 mm (0.11")	1
-10,055 Pa (-210.0 psf)	20.3 mm (0.80")	2.8 mm (0.11")	1
-10,534 Pa (-220.0 psf)	21.8 mm (0.86")	3.3 mm (0.13")	1
-11,012 Pa (-230.0 psf)	23.1 mm (0.91")	3.3 mm (0.13")	1
-11,491 Pa (-240.0 psf)	N/A	N/A	5

Test Specimen #4: Positive Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
+8618 Pa (+180.0 psf)	13.7 mm (0.54")	1.8 mm (0.07")	1
+9097 Pa (+190.0 psf)	14.7 mm (0.58")	2.0 mm (0.08")	1
+9576 Pa (+200.0 psf)	15.2mm (0.60")	2.3 mm (0.09")	1
+10,055 Pa (+210.0 psf)	16.3 mm (0.64")	2.0 mm (0.08")	1
+10,534 Pa (+220.0 psf)	17.0 mm (0.67")	2.3 mm (0.09")	1
+11,012 Pa (+230.0 psf)	17.8 mm (0.70")	2.5 mm (0.10")	1

Test Specimen #5: Positive Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
+8618 Pa (+180.0 psf)	14.0 mm (0.55")	1.8 mm (0.07")	1
+9097 Pa (+190.0 psf)	14.5 mm (0.57")	2.0 mm (0.08")	1
+9576 Pa (+200.0 psf)	15.0 mm (0.59")	2.0 mm (0.08")	1
+10,055 Pa (+210.0 psf)	16.0 mm (0.63")	2.3 mm (0.09")	1
+10,534 Pa (+220.0 psf)	16.5 mm (0.65")	2.5 mm (0.10")	1
+11,012 Pa (+230.0 psf)	17.5 mm (0.69")	2.5 mm (0.10")	1

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Test Specimen #6: Positive Loads

TEST PRESSURE Pa (psf)	UNIFORM LOAD DEFLECTION mm (in)	UNIFORM LOAD STRUCTURAL mm (in)	NOTES
+8618 Pa (+180.0 psf)	14.5 mm (0.57")	2.0 mm (0.08")	1
+9097 Pa (+190.0 psf)	15.2 mm (0.60")	2.5 mm (0.10")	1
+9576 Pa (+200.0 psf)	16.3 mm (0.64")	2.8 mm (0.11")	1
+10,055 Pa (+210.0 psf)	17.3 mm (0.68")	3.0 mm (0.12")	1
+10,534 Pa (+220.0 psf)	17.8 mm (0.70")	3.0 mm (0.12")	1
+11,012 Pa (+230.0 psf)	18.8 mm (0.74")	3.0 mm (0.12")	1

General Note: All testing was performed in accordance with the referenced standard(s).

Note 1: No damage observed.

Note 2: Steel studs were reinforced, testing was continued.

Note 3: Test specimen failed prior to target pressure. Screw heads broke off and a crack developed in the panel.

Note 4: Test specimen failed 1 second into target load. Panel broke at the fastener locations.

Note 5: Test specimen failed 6 seconds into target load. Top of panel broke off.

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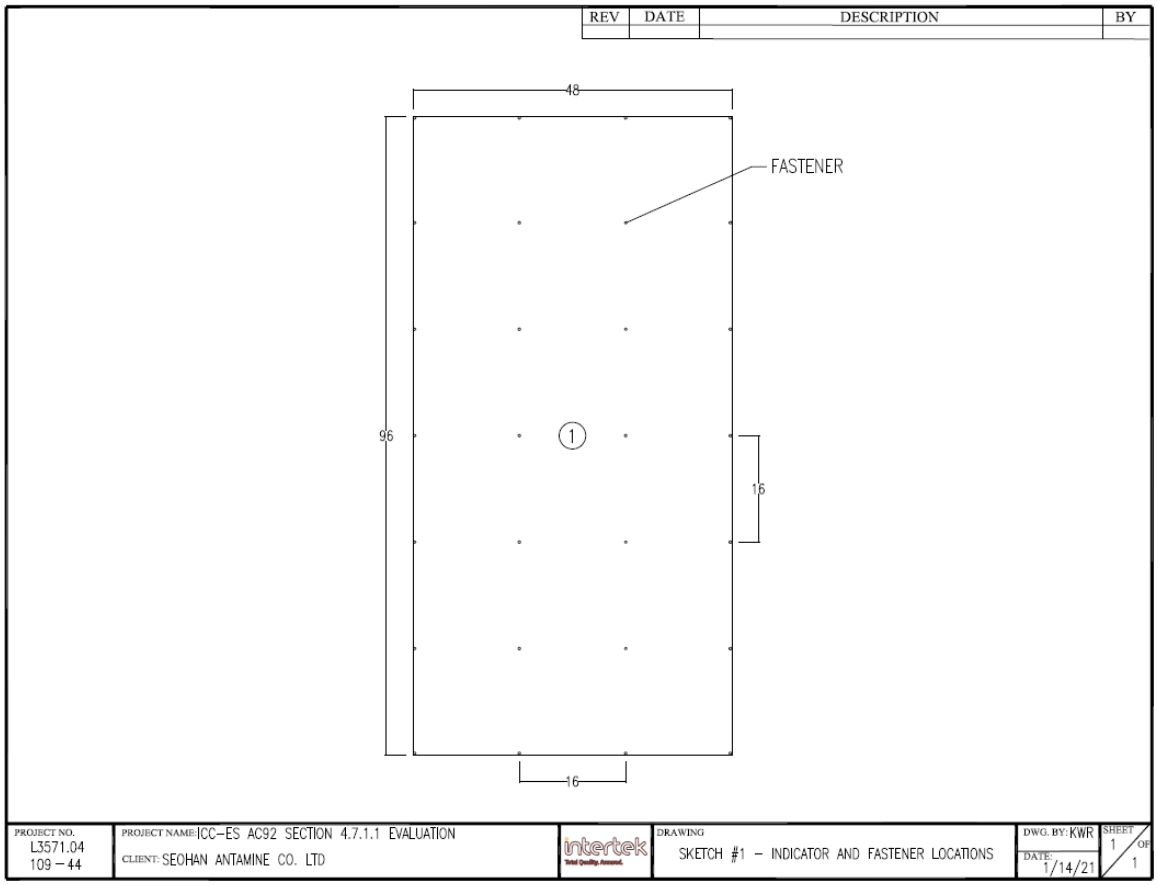
SECTION 8
SKETCH



Sketch #1
Deflection Locations

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SECTION 9
PHOTOGRAPHS

Photo No. 1
View of Test Specimen #1

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Photo No. 2
View of Test Specimen #2

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Photo No. 3
View of Test Specimen #3

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Photo No. 4
View of Test Specimen #4

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Photo No. 5
View of Test Specimen #5

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Photo No. 6
View of Test Specimen #6

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SECTION 10
DRAWINGS

The test specimen drawings were not provided by the client.

SECTION 11
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	01/14/21	N/A	Original Report Issue
1	01/15/21	5 8	Added reference to Sketch #1 Inserted Sketch #1