SUMMARY DATA

ASTM E0330-02, -02(2010), and -14

Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtains Walls by Uniform Static Air Pressure Difference (Procedure B)

General:

Client: Arcitell, LLC
Job Number: AL060920-35
Test Location: ICC NTA
Nappanee, Indiana

Specimen Description:

Date Received: 9/28/2020
General Construction Description: 2 x 4 SPF #2 Framing at 24-in. on center. 7/16 x 48 x 60-in. 24/16 Span Rated OSB fastened to framing with 0.113 x 2-in. Smooth Shank Nails at 6/12 with 3/8-in. edge distance. Qora Cladding to sheathing fastened with #8 x 1-5/8-in. Self Drilling Lath Screw (4/panel) into sheathing only. 3 Qora cladding panels were used per specimen.

Test Parameters:

Specified Maximum Test Load: 60 psf
Number of Load Increments: 6
Support Conditions: 24-in. oc stud spacing
Chamber Pressure Differential: Negative
Specimen Pressure (in-use): Positive

Table A1: Overall Test Results

Average Ultimate Pressure (psf)	Average Deflections, Gauges B-(A+C)/2									
	Increment 1 (in.)	Increment 2 (in.)	Increment 3 (in.)	Increment 4 (in.)	Increment 5 (in.)	Increment 6 (in.)	Increment 7 (in.)	Increment 8 (in.)	Increment 9 (in.)	Increment 10 (in.)
303	0.011	0.021	0.031	0.041	0.053	0.065	N/A	N/A	N/A	N/A

Test Modification(s): Per ICC-ES AC92 Section 4.7, test assemblies were constructed smaller that 4-ft x 8-ft since the panels spanned between framing members without bearing on the top and bottom headers. Load deflection readings were taken at the midpoint of the span on the center panel.

Pressures at Deflection Limits[a]

	For Span A-B-C, 22.5-in.					For Span --, -in.				
Limit (L=Span)	Deflection (in.)	Pressure (psf) Spec. 1	Spec. 2	Spec. 3	Average	Deflection (in.)	Pressure (psf) Spec. 1	Spec. 2	Spec. 3	Average
L/600	0.038	44.0	37.2	30.8	37.3		0.0	0.0	0.0	0.0
L/480	0.047	53.3	45.4	38.8	45.8		0.0	0.0	0.0	0.0
L/360	0.063	--	58.3	51.4	--		0.0	0.0	0.0	0.0
L/240	0.094	--	--	--	--		0.0	0.0	0.0	0.0
L/180	0.125	--	--	--	--		0.0	0.0	0.0	0.0
L/120	0.188	--	--	--	--		0.0	0.0	0.0	0.0
L/90	0.250	--	--	--	--		0.0	0.0	0.0	0.0

[a] Interpolated from test data. Based on Net Deflection calculated as dial gauges B-(A+C)/2 or B-(D+E)/2.

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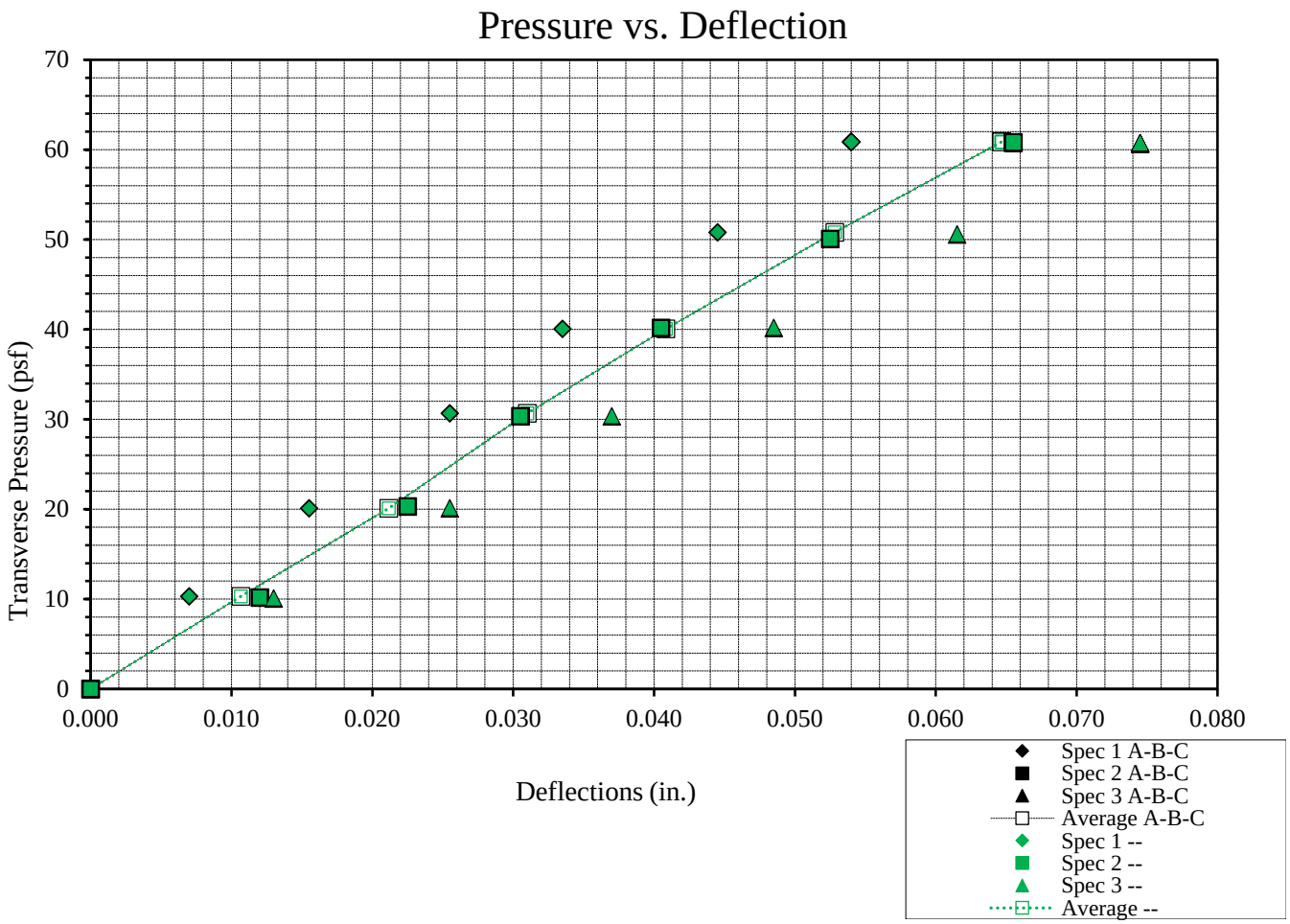

Net Deflections are Graphed (mid-span minus supports)

Apparatus: Asset No.

Moisture Meter:	00830
Balance:	n/a
Length Measure:	01384

Specimen	Ultimate Pressure (psf)	% Diff. from Av. (%)
1	321	5.9
2	264	-12.9
3	324	7.0
Average:	**303**	--

Dial Gauge Locations:

Gauge A: Edge stud at mid-height
Gauge B: Mid span between edge and center studs at mid-height on panel
Gauge C: Center stud at mid-height
Gauge D: n/a
Gauge E: n/a
Gauge F: n/a

SUMMARY DATA

ASTM E0330-02, -02(2010), and -14

Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtains Walls by Uniform Static Air Pressure Difference (Procedure B)

Specimen 1

General:
Specimen No.: 129931
Test Date: 2/9/2021 3:04 PM
Performed By: Todd Ferguson
Witnessed By: Lucas Ward

Ambient Conditions:
Ambient Temp.: 70.3 deg. F
Ambient R.H.: 20.3%
Sensor Asset No.: 00576

Apparatus: Asset No.
Manometer: 2179, 2180
Vacuum Table: 02170
Timing Device: 02447
Deflection Gauge A: 02365
Deflection Gauge B: 02185
Deflection Gauge C: 02186
Deflection Gauge D: --
Deflection Gauge E: --
Deflection Gauge F: --

Loading Conditions:
Specified Maximum Test Load: 60 psf
Chamber Pressure Differential: Negative
Specimen Pressure (in-use): Positive
Siding Material: 0 psf
Support Conditions: 24-in. oc stud spacing
Test Variable(s): *None*

Table A2: Specimen 1 Test Data

Load Stages	Applied Pressure (psf)	Member Deflection Readings[a] (in.) Gauge A	Gauge B	Gauge C	Gauge D	Gauge E	Gauge F	Net Deflection B-(A+C)/2	Net Deflection E-(D+F)/2	Stage Duration (mm:ss)
Pre-Load	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0:12
(REF)	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2:58
Increment 1	10.3	0.040	0.058	0.062	--	--	--	0.007	--	0:17
(REF)	0.0	0.000	0.003	0.001	--	--	--	0.003	--	2:41
Increment 2	20.1	0.084	0.121	0.127	--	--	--	0.016	--	0:15
(REF)	0.0	0.000	0.004	0.001	--	--	--	0.004	--	2:37
Increment 3	30.7	0.125	0.186	0.196	--	--	--	0.026	--	0:18
(REF)	0.0	0.001	0.004	0.001	--	--	--	0.003	--	2:52
Increment 4	40.1	0.166	0.247	0.261	--	--	--	0.034	--	0:16
(REF)	0.0	0.003	0.003	0.001	--	--	--	0.001	--	3:32
Increment 5	50.8	0.209	0.315	0.332	--	--	--	0.045	--	0:15
(REF)	0.0	0.005	0.001	0.005	--	--	--	-0.004	--	3:15
Increment 6	60.9	0.250	0.377	0.396	--	--	--	0.054	--	0:16
(REF)	0.0	0.008	0.001	0.006	--	--	--	-0.006	--	4:08
Increment 7	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 8	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 9	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 10	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--

[a] See page 1 for dial gauge location descriptions.

Ultimate Uniform Pressure: **321 psf** Duration of Specified Maximum Pressure: 15 seconds

Failure Mode: *Flexural failure of the framing near mid height.*

Observations during Test: None

Tape Use: *Tape and film were used to seal the specimen.*
Tape Influence: *The tape and or film did not influence the test results.*

SUMMARY DATA

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Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtains Walls by Uniform Static Air Pressure Difference (Procedure B)

Specimen 2

General:
Specimen No.: 129932
Test Date: 2/10/2021 8:00 AM
Performed By: Todd Ferguson
Witnessed By: Lucas Ward

Ambient Conditions:
Ambient Temp.: 68.4 deg. F
Ambient R.H.: 18.3%
Sensor Asset No.: 00576

Apparatus: Asset No.
Manometer: 2179, 2180
Vacuum Table: 02170
Timing Device: 02447
Deflection Gauge A: 02365
Deflection Gauge B: 02185
Deflection Gauge C: 02186
Deflection Gauge D: --
Deflection Gauge E: --
Deflection Gauge F: --

Loading Conditions:
Specified Maximum Test Load: 60 psf
Chamber Pressure Differential: Negative
Specimen Pressure (in-use): Positive
Siding Material: 0 psf
Support Conditions: 24-in. oc stud spacing
Test Variable(s): *None*

Table A3: Specimen 2 Test Data

Load Stages	Applied Pressure (psf)	Member Deflection Readings[a] (in.) Gauge A	Gauge B	Gauge C	Gauge D	Gauge E	Gauge F	Net Deflection B-(A+C)/2	Net Deflection E-(D+F)/2	Stage Duration (mm:ss)
Pre-Load	30.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0:12
(REF)	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2:54
Increment 1	10.2	0.036	0.069	0.078	--	--	--	0.012	--	0:18
(REF)	0.0	0.001	0.001	0.000	--	--	--	0.001	--	2:55
Increment 2	20.3	0.083	0.138	0.148	--	--	--	0.023	--	0:17
(REF)	0.0	0.000	0.002	0.001	--	--	--	0.002	--	2:58
Increment 3	30.3	0.122	0.198	0.213	--	--	--	0.031	--	0:15
(REF)	0.0	0.000	0.002	0.002	--	--	--	0.001	--	2:56
Increment 4	40.2	0.156	0.256	0.275	--	--	--	0.041	--	0:17
(REF)	0.0	0.002	0.001	0.005	--	--	--	-0.003	--	2:53
Increment 5	50.1	0.188	0.315	0.337	--	--	--	0.053	--	0:17
(REF)	0.0	0.003	0.002	0.009	--	--	--	-0.004	--	3:18
Increment 6	60.8	0.225	0.380	0.404	--	--	--	0.066	--	0:17
(REF)	0.0	0.005	0.005	0.012	--	--	--	-0.004	--	3:34
Increment 7	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 8	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 9	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 10	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--

[a] See page 1 for dial gauge location descriptions.

Ultimate Uniform Pressure: **264 psf** Duration of Specified Maximum Pressure: 16 seconds

Failure Mode: *Flexural failure of center stud near mid height.*

Observations during Test: None

Tape Use: *Tape and film were used to seal the specimen.*
Tape Influence: *The tape and or film did not influence the test results.*

SUMMARY DATA

ASTM E0330-02, -02(2010), and -14

Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtains Walls by Uniform Static Air Pressure Difference (Procedure B)

Specimen 3

General:
Specimen No.: 129933
Test Date: 2/10/2021 11:00 AM
Performed By: Todd Ferguson
Witnessed By: Lucas Ward

Ambient Conditions:
Ambient Temp.: 67.2 deg. F
Ambient R.H.: 19.3%
Sensor Asset No.: 00576

Apparatus: Asset No.
Manometer: 2179, 2180
Vacuum Table: 02170
Timing Device: 02447
Deflection Gauge A: 02365
Deflection Gauge B: 02185
Deflection Gauge C: 02186
Deflection Gauge D: --
Deflection Gauge E: --
Deflection Gauge F: --

Loading Conditions:
Specified Maximum Test Load: 60 psf
Chamber Pressure Differential: Negative
Specimen Pressure (in-use): Positive
Siding Material: 0 psf
Support Conditions: 24-in. oc stud spacing
Test Variable(s): *None*

Table A4: Specimen 3 Test Data

Load Stages	Applied Pressure (psf)	Member Deflection Readings[a] (in.) Gauge A	Gauge B	Gauge C	Gauge D	Gauge E	Gauge F	Net Deflection B-(A+C)/2	Net Deflection E-(D+F)/2	Stage Duration (mm:ss)
Pre-Load	30.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0:12
(REF)	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5:11
Increment 1	10.1	0.060	0.080	0.074	--	--	--	0.013	--	0:16
(REF)	0.0	0.001	0.000	0.000	--	--	--	-0.001	--	3:29
Increment 2	20.1	0.105	0.149	0.142	--	--	--	0.026	--	0:17
(REF)	0.0	0.002	0.001	0.000	--	--	--	0.000	--	3:46
Increment 3	30.3	0.154	0.218	0.208	--	--	--	0.037	--	0:15
(REF)	0.0	0.001	0.000	0.002	--	--	--	-0.002	--	3:00
Increment 4	40.2	0.196	0.283	0.273	--	--	--	0.049	--	0:15
(REF)	0.0	0.001	0.003	0.005	--	--	--	0.000	--	2:46
Increment 5	50.6	0.241	0.354	0.344	--	--	--	0.062	--	0:17
(REF)	0.0	0.002	0.005	0.009	--	--	--	-0.001	--	3:08
Increment 6	60.7	0.281	0.421	0.412	--	--	--	0.075	--	0:18
(REF)	0.0	0.003	0.007	0.013	--	--	--	-0.001	--	2:44
Increment 7	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 8	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 9	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--
Increment 10	--	--	--	--	--	--	--	--	--	--
(REF)	--	--	--	--	--	--	--	--	--	--

[a] See page 1 for dial gauge location descriptions.

Ultimate Uniform Pressure: **324 psf** Duration of Specified Maximum Pressure: 17 seconds

Failure Mode: *Flexural failure of center stud near mid height, including flexural cracking of the OSB and cladding.*

Observations during Test: None

Tape Use: *Tape and film were used to seal the specimen.*

Tape Influence: *The tape and or film did not influence the test results.*