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**Initial Approval**  
April, 2015

**Re-Approved**  
June, 2015

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### Report Owner

#### **Nichiha USA Inc.**

6465 E. Johns Crossing, Suite 250  
Johns Creek, GA 30097

### Product

**NichiProducts™ (NichiBoard™, NichiPanel™, NichiStraight™, NichiStaggered™, NichiShake™, and NichiFrontier™) Fiber Cement Siding Products**

### Approved Manufacturing Locations

#### **Nichiha Fiber Cement Siding**

3150 Avondale Mill Road  
Macon, GA 31216

### Evaluation Report Information

<http://www.nichiha.com/>

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### General Details

**Nichiha NichiBoard™, NichiPanel™, NichiStraight™, NichiStaggered™, NichiShake™, and NichiFrontier™** fiber cement siding products are manufactured at the plant location listed above. This plant location has an approved Q.C. Manual to manufacture these products and is audited quarterly by **Progressive Engineering Inc.** **Nichiha Fiber-Cement Siding Products** are fiber cement based products used for exterior cladding systems. All **NichiProducts™** have a flame spread index rating of 0 and a smoke developed index rating of 0.

**Nichiha NichiBoard™, NichiPanel™, NichiStraight™, NichiStaggered™, NichiShake™, and NichiFrontier™** fiber cement siding products have been tested and evaluated for structural strength, non-combustibility, water penetration, and surface burning characteristics to meet design loads and requirements of the codes listed under the Code Compliance section of this **PER**.

### Product Description

**NichiBoard™** is a fiber cement lap siding product manufactured in 12-ft lengths and the following widths: 5.25, 6.25, 7.25, 8.25, 9.25, and 12-inches. The nominal thickness is 5/16-inch, and the siding is manufactured with either a Smooth or Cedar finish. **NichiBoard™** lap siding is designed to be installed as exterior cladding only.

**NichiPanel™** is a fiber cement panel siding product manufactured in four styles (Cedar, Smooth, Stucco, and Grooved 8" o.c. Cedar) and three available sizes (4-ft wide by 8-ft, 10-ft, or 12-ft long). The nominal thickness is 5/16-inch and **NichiPanel™** siding may be used for exterior cladding only.

**NichiStraight™** and **NichiStaggered™** are fiber cement lap siding products designed to look like individual cedar shakes once installed. Both products are manufactured in 4-ft lengths with a profile height of 16-inches and a thickness of 5/16-inch. **NichiStraight™** and **NichiStaggered™** lap siding is designed to be installed as exterior cladding only.

**NichiShake™** is a fiber cement shake siding designed to have an appearance similar to cedar shakes. The product is manufactured in varying widths of 6.25, 8.25, and 12-inches with a thickness of 5/16-inch and profile height of 18-inches. **NichiShake™** siding is designed to be installed as exterior cladding only.

**NichiFrontier™** is a fiber cement lap siding product designed to look like cedar shakes once installed. This product is manufactured in 8-ft lengths with a profile height of 9.25-inches and a 7/16-inch thickness. **NichiFrontier™** is designed to be installed as exterior cladding only.

## Building Code & Standard Compliance

### 2012 & 2015 International Residential Code

Section R104.11	Section R104.11.1
Table R301.2(2)	Table R301.2(3)
Section R703.2	Section R703.10.1

### 2012 & 2015 International Building Code

Section 1403.2	Section 1404.10	Section 1405.2
Section 1405.16	Section 1405.17	

- **NichiProducts™** have allowable wind design pressures as outlined in Table 2a - 2f. It is the responsibility of the design professional of record to verify that this pressure is sufficient to meet the wind load design criteria of the applicable building code for each project where these products are used.
- Surface Burning Characteristics - Flame Spread 0 / Smoke Development 0 when tested in accordance with ASTM E 84-09 (2012 IBC/IRC) and ASTM E 84-2013a (2015 IBC/IRC).
- Meets or exceeds the requirements of ASTM E 330-02 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference.
- Meets or exceeds the requirements of ASTM C 1186-08 Standard Test Method for Flat Non-Asbestos Fiber Cement Sheets for Type A Grade II Products.
- Meets or exceeds the requirements of ICC-ES AC90 Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding, compliance to Section 3.1.

## General Product Usage and Limitations

1. These products shall be installed in accordance with the requirements of **Nichiha's** Installation Instructions.
2. **NichiProducts™** can be installed on braced wood or steel stud (20ga. or heavier) construction spaced at a maximum of 24" o.c. These products may also be installed over structural sheathing (7/16-inch OSB or plywood is recommended) or non-structural sheathing not exceeding 1-inch in thickness. When siding is installed over non-structural sheathing, the fastener length must be increased by the thickness of the sheathing.
3. **NichiShake™** individual shakes must be installed directly on minimum 7/16-inch thick APA rated OSB or plywood sheathing.
4. This Product Evaluation Report (**PER**) does not address the capacity of the framing members, framing connections, structural and non-structural sheathing connections, or overall wall load carrying capacity. These items are outside the scope of this **PER** and fall under the responsibility of the registered design professional.
5. Weather resistive barriers shall be used in accordance with IBC Section 1403.2 and IRC Section R703.2.
6. All openings must have appropriate flashing to prevent moisture penetration.
7. These products may only be installed on vertical walls and are not intended for use on roofing applications.
8. **NichiProducts™** must be stored in a covered area and kept dry. It must be stored flat and off the ground prior to installation.
9. Corrosion resistant fasteners such as stainless steel or hot-dipped galvanized nails or screws must be used to fasten siding to the wall framing. *Aluminum fasteners, staples, clipped head or T-head nails, or fasteners not rated or designed for intended use shall NOT be used.*
10. Piece terminations and butt joints shall be filled with a proper sealant in accordance with the manufacturer's installation instructions.
11. When fastening Fiber Cement Siding, it is very important that the technique used to apply the fasteners does not cause damage to the siding. Visual cracking or breakage will reduce the wind resistance value as stated in this report, especially at the corners of each piece.

## Tested to

**ASTM E 136-99** - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.

**ASTM C 1186-07** - Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles and Clapboards.

**ASTM E 84-08** - Standard Test Method for Surface Burning Characteristics of Building Materials.

**ASTM E 119-08a** - Standard Test Method for Fire Tests of Building Construction and Materials.

**Testing Application Standard (TAS) 201-94** - Impact Test Procedures

**Testing Application Standard (TAS) 202-94** - Criteria for Testing Impact & Non-impact Resistant Building Envelope Components Using Uniform Static Air Pressure

**Testing Application Standard (TAS) 203-94** - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

**ASTM E 564-06** - Standard Practice for Static Load Test for Shear Resistance of Framed Walls for Buildings

**ASTM E 330-02** - Standard Test Methods for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

**Physical Properties**

**Table 1: Physical Properties per ASTM C1186**

Property	Test Result	Requirement	Pass / Fail
Moisture Content %	10.5%	Report Value	Report Value
Density lb/ft <sup>3</sup>	77.6 lb/ft <sup>3</sup>	Report Value	Report Value
Flexural Strength (machine direction)	1743 psi	1015 psi / 1450 psi (wet/dry)	Pass
Water Tightness	No drop formation observed	No drop formation	Pass
Warm Water Resistance Strength Retention, % Observation	103.0% No deleterious effects	Report Value No deleterious effects	Report Value Pass
Heat / Rain Resistance	No signs of cracks, damage or structural failure after 25 cycles	No visible cracks or structural alteration	Pass
Frost Resistance Strength Retention, % Observation	96.0% No deleterious effects	≥ 80% No deleterious effects	Pass Pass

**Design Pressure Tables**

**Table 2a - Design Loads for Negative Transverse Wind Load (NichiStraight™/NichiStaggered™)<sup>1,4,7</sup>**

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
NichiStraight™/NichiStaggered™	6d Double HD MAZE Coil Nail	Blind	12	8.625	7/16" OSB	-23.5	15	99	90	--	128	116	105
							20	99	87	--	128	113	--
							25	99	85	--	128	110	--
							30	99	--	--	128	108	--
							40	95	--	--	122	--	--
							50	92	--	--	119	--	--
			60	90	--	--	116	--	--				
			15	122	111	101	158	143	130				
			20	122	108	98	158	139	127				
			25	122	105	96	158	136	125				
			30	122	103	95	158	133	122				
			40	117	100	92	151	129	119				
			50	113	98	91	146	126	117				
			60	111	96	89	143	124	115				
			15	100	90	--	129	117	106				
			20	100	88	--	129	113	--				
			25	100	86	--	129	111	--				
			30	100	--	--	129	109	--				
40	96	--	--	123	106	--							
50	93	--	--	120	--	--							
60	90	--	--	117	--	--							
NichiStraight™/NichiStaggered™	6d Ring Shank Double HD MAZE Coil Nail	Blind	12	8.625	7/16" OSB	-24.9	15	102	92	--	131	119	108
							20	102	90	--	131	116	106
							25	102	88	--	131	113	--
							30	102	86	--	131	111	--
							40	98	--	--	126	108	--
							50	95	--	--	122	105	--
							60	92	--	--	119	--	--
NichiStraight™/NichiStaggered™	#8-18 Wafer Head ROCK-ON™ Screws	Blind	24	8.625	20 GA Steel	-49.6	15	144	130	118	185	168	153
							20	144	127	116	185	163	149
							25	144	124	114	185	160	147
							30	144	121	112	185	157	144
							40	138	118	109	178	152	140
							50	133	115	107	172	149	138
							60	130	113	105	168	146	136

**Design Pressure Tables** *continued*

**Table 2b - Design Loads for Negative Transverse Wind Load (NichiFrontier™)<sup>1,4,7</sup>**

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
NichiFrontier™	6d Ring Shank Double HD MAZE Coil Nail	Face	12	9.25	SPF	-38.7	15	127	115	105	164	149	135
							20	127	112	102	164	144	132
							25	127	109	100	164	141	129
							30	127	107	98	164	138	127
							40	122	104	96	157	134	124
							50	118	102	94	152	131	122
					60		115	100	93	149	129	120	
					SYP		15	158	143	130	204	185	168
							20	158	139	127	204	179	164
							25	158	136	125	204	176	161
							30	158	133	122	204	172	158
							40	151	129	119	195	167	154
			50	147		126	117	189	163	151			
			16	9.25	SPF	-29.0	15	110	100	91	142	129	117
							20	110	97	88	142	125	114
							25	110	95	87	142	122	112
							30	110	93	85	142	120	110
							40	105	90	--	136	116	107
							50	102	88	--	132	114	105
					60		100	86	--	129	112	--	
					SYP		15	137	124	113	176	160	145
							20	137	120	110	176	155	142
							25	137	118	108	176	152	139
							30	137	115	106	176	149	137
							40	131	112	103	169	145	134
			50	127		109	101	164	141	131			
			24	9.25	SPF	-19.3	15	90	--	--	116	105	--
							20	90	--	--	116	--	--
							25	90	--	--	116	--	--
							30	90	--	--	116	--	--
							40	86	--	--	111	--	--
							50	--	--	--	108	--	--
					60		--	--	--	105	--	--	
					SYP		15	111	101	92	144	131	119
							20	111	98	90	144	127	116
							25	111	96	88	144	124	114
							30	111	94	87	144	122	112
							40	107	91	--	138	118	109
			50	104		89	--	134	115	107			
			60	101	88	--	131	113	105				

Design Pressure Tables continued

**Table 2b - Continued (NichiFrontier™)<sup>1,4,7</sup>**

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
NichiFrontier™	Double HD Grip Rite Roofing Nail	Blind	12	9.25	7/16" OSB	-27.7	15	107	97	88	138	126	114
							20	107	95	86	138	122	111
							25	107	93	--	138	120	109
							30	107	91	--	138	117	108
							40	103	88	--	133	114	--
							50	100	86	--	129	111	--
			60	97	--	--	126	109	--				
			15	147	134	121	190	173	157				
			20	147	130	119	190	168	153				
			25	147	127	116	190	164	150				
			30	147	124	114	190	161	148				
			40	141	121	112	183	156	144				
			50	137	118	109	177	152	141				
			60	134	116	108	173	150	139				
			15	93	--	--	120	109	--				
			20	93	--	--	120	106	--				
			25	93	--	--	120	--	--				
			30	93	--	--	120	--	--				
			40	89	--	--	115	--	--				
			50	86	--	--	111	--	--				
			60	--	--	--	109	--	--				
			15	128	116	105	165	149	136				
			20	128	113	103	165	145	133				
			25	128	110	101	165	142	130				
			30	128	108	99	165	139	128				
			40	122	105	97	158	135	125				
			50	119	102	95	153	132	122				
			60	116	100	93	149	130	120				
			15	104	95	86	134	122	111				
			20	104	92	--	134	119	108				
			25	104	90	--	134	116	106				
			30	104	88	--	134	114	--				
			40	100	85	--	129	110	--				
			50	97	--	--	125	108	--				
			60	95	--	--	122	106	--				

Design Pressure Tables continued

Table 2b - Continued (NichiFrontier™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
NichiFrontier™	#8-18 Wafer Head ROCK-ON™ Screws	Face	12	9.25	20 GA Steel	-123.2	15	170	170	170	210	210	210
							20	170	170	170	210	210	210
							25	170	170	170	210	210	210
							30	170	170	170	210	210	210
							40	170	170	170	210	210	210
							60	170	170	168	210	210	210
			16	9.25	20 GA Steel	-92.4	15	170	170	162	210	210	209
							20	170	170	158	210	210	204
							25	170	169	155	210	210	200
							30	170	166	152	210	210	197
							40	170	161	148	210	208	192
							60	170	157	145	210	203	188
			24	9.25	20 GA Steel	-61.6	15	160	145	132	207	187	170
							20	160	141	129	207	182	166
							25	160	138	127	207	178	163
							30	160	135	124	207	175	160
							40	154	131	121	198	169	156
							60	149	128	119	192	166	153
		Blind	12	9.25	20 GA Steel	-44.5	15	136	123	112	175	159	145
							20	136	120	109	175	155	141
							25	136	117	107	175	151	139
							30	136	115	106	175	148	136
							40	130	111	103	168	144	133
							60	126	109	101	163	141	130
			16	9.25	20 GA Steel	-33.3	15	118	107	97	152	138	125
							20	118	104	95	152	134	122
							25	118	102	93	152	131	120
							30	118	99	91	152	128	118
							40	113	97	89	146	125	115
							60	109	94	87	141	122	113
			24	9.25	20 GA Steel	-22.2	15	96	87	--	124	113	--
							20	96	--	--	124	109	--
							25	96	--	--	124	107	--
							30	96	--	--	124	--	--
							40	92	--	--	119	--	--
							60	89	--	--	115	--	--

- Notes:
- NichiFrontier™ fiber cement lap/shingle siding may only be installed on vertical walls. Fasteners must be installed in a way that does not damage the board during installation. Where necessary, pre-drilled holes may be used in combination with hand-nailed fasteners to avoid damage to the fiber cement product.
  - ASCE 7-05 Basic Wind Speeds are based upon occupancy category II, a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 170mph.
  - ASCE 7-10 Ultimate Wind Speeds are based upon a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 210mph.
  - The values in this table are based on testing per ASTM E330 and represent the allowable capacity of the siding to resist the wind pressures associated with the corresponding wind speed.
  - Fastener specifications for those used in testing are outlined in Table 3 of this PER. These specifications may be used by the designer of record to determine the acceptability of alternative fasteners.
  - Allowable design pressures in highlighted cells have been adjusted based on the listed allowable withdrawal capacity of the tested fastener.
  - Framing and bracing are beyond the scope of this evaluation report.

Design Pressure Tables continued

Table 2c - Design Loads for Negative Transverse Wind Load (NichiBoard™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>				
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D		
6.25" NichiBoard™	6d Double HD MAZE Coil Nail	Face	16	6.25	SPF	-49.5	15	143	130	118	185	168	153		
							20	143	126	115	185	163	149		
							25	143	124	113	185	160	146		
							30	143	121	111	185	156	144		
							40	138	118	109	178	152	140		
							50	133	115	106	172	148	137		
			60	130	113	105	168	146	135						
			15	170	162	147	210	209	190						
			20	170	157	144	210	203	185						
			25	170	154	141	210	199	182						
			30	170	151	139	210	195	179						
			40	170	146	135	210	189	174						
		50	166	143	132	210	184	171							
		60	162	140	130	209	181	168							
		15	117	106	97	151	137	125							
		20	117	103	94	151	133	122							
		25	117	101	93	151	130	119							
		30	117	99	91	151	128	117							
		40	112	96	89	145	124	114							
		50	109	94	87	141	121	112							
		60	106	92	86	137	119	110							
		15	146	132	120	188	171	155							
		20	146	128	117	188	166	151							
		25	146	126	115	188	162	149							
30	146	123	113	188	159	146									
40	140	119	110	180	154	142									
50	135	117	108	175	151	140									
60	132	115	106	171	148	137									
6.25" NichiBoard™	6d Double HD MAZE Coil Nail	Blind	16	6.25	SPF	-35.1	15	121	110	100	156	142	129		
							20	121	107	97	156	138	126		
							25	121	104	96	156	135	123		
							30	121	102	94	156	132	121		
							40	116	99	92	150	128	118		
							50	112	97	90	145	125	116		
			60	110	95	88	142	123	114						
			15	99	90	--	127	116	--						
			20	99	87	--	127	112	--						
			25	99	85	--	127	110	--						
			30	99	--	--	127	108	--						
			40	95	--	--	122	--	--						
		50	92	--	--	118	--	--							
		60	90	--	--	116	--	--							
		6.25" NichiBoard™	6d Double HD MAZE Coil Nail	Blind	24	6.25	SPF	-23.4	15	99	90	--	127	116	--
									20	99	87	--	127	112	--
									25	99	85	--	127	110	--
									30	99	--	--	127	108	--
40	95								--	--	122	--	--		
50	92								--	--	118	--	--		
60	90	--	--	116	--	--									

Design Pressure Tables continued

Table 2c - Continued (NichiBoard™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>					
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D			
6.25" NichiBoard™	Double HD MAZE Asphalt & Fiberglass Shingle Nail	Blind	12	6.25	7/16" OSB	-41.0	15	130	118	108	168	153	139			
							20	130	115	105	168	149	136			
							25	130	113	103	168	145	133			
							30	130	110	101	168	142	131			
							40	125	107	99	162	138	128			
							50	121	105	97	157	135	125			
			60	118	103	95	153	133	123							
			16	6.25	7/16" OSB	-30.7	15	113	103	93	146	132	120			
							20	113	100	91	146	129	117			
							25	113	98	89	146	126	115			
							30	113	96	88	146	123	113			
							40	108	93	86	140	120	111			
							50	105	91	--	136	117	108			
			60	103	89	--	132	115	107							
			24	6.25	SPF	-56.1	15	153	139	126	197	179	163			
							20	153	135	123	197	174	159			
							25	153	132	121	197	170	156			
							30	153	129	119	197	167	153			
							40	147	125	116	189	162	149			
							50	142	122	113	183	158	146			
			60	139	120	112	179	155	144							
			6.25" NichiBoard™	Aerosmith Fastening Systems, VersaPin	Face	16	6.25	20 GA Steel	-136.3	15	170	170	170	210	210	210
										20	170	170	170	210	210	210
										25	170	170	170	210	210	210
30	170	170								170	210	210	210			
40	170	170								170	210	210	210			
50	170	170								170	210	210	210			
60	170	170			170	210	210	210								
Blind	16	6.25			20 GA Steel	-90.9	15	170	170	160	210	210	207			
							20	170	170	156	210	210	202			
							25	170	168	154	210	210	198			
							30	170	164	151	210	210	195			
							40	170	159	147	210	206	190			
			50	170			156	144	210	201	186					
60	170	153	142	210	197	183										
Blind	16	6.25	20 GA Steel	-27.5	15	107	97	88	138	125	114					
					20	107	94	86	138	122	111					
					25	107	92	--	138	119	109					
					30	107	90	--	138	117	107					
					40	103	88	--	132	113	--					
					50	99	86	--	128	111	--					
60	97	--	--	125	109	--										



**Design Pressure Tables** continued

**Table 2c - Continued (NichiBoard™)<sup>1,4,7</sup>**

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
7.25" NichiBoard™	6d Double HD MAZE Coil Nail	Face	16	7.25	SPF	-42.7	15	133	121	110	172	156	142
							20	133	117	107	172	152	138
							25	133	115	105	172	148	136
							30	133	113	103	172	145	134
							40	128	109	101	165	141	130
							50	124	107	99	160	138	128
			60	121	105	97	156	135	126				
			15	166	150	136	210	194	176				
			20	166	146	133	210	188	172				
			25	166	143	131	210	184	169				
			30	166	140	129	210	181	166				
			40	159	136	125	205	175	162				
		50	154	133	123	199	171	159					
		60	150	130	121	194	168	156					
		15	109	99	90	140	127	116					
		20	109	96	88	140	124	113					
		25	109	94	86	140	121	111					
		30	109	92	--	140	119	109					
		40	104	89	--	135	115	106					
		50	101	87	--	130	112	--					
		60	99	86	--	127	110	--					
		15	135	123	111	175	158	144					
		20	135	119	109	175	154	140					
		25	135	117	107	175	151	138					
30	135	114	105	175	147	136							
40	130	111	102	167	143	132							
50	126	108	100	162	140	130							
60	123	106	99	158	137	128							
15	104	95	86	135	122	111							
20	104	92	--	135	119	108							
25	104	90	--	135	116	106							
30	104	88	--	135	114	--							
40	100	85	--	129	110	--							
50	97	--	--	125	108	--							
60	95	--	--	122	106	--							
7.25" NichiBoard™	Double HD MAZE Asphalt & Fiberglass Shingle Nail	Blind	12	7.25	7/16" OSB	-35.3	15	121	110	100	156	142	129
							20	121	107	98	156	138	126
							25	121	105	96	156	135	124
							30	121	102	94	156	132	122
							40	116	99	92	150	128	118
							50	113	97	90	145	125	116
		60	110	95	89	142	123	114					
		15	117	106	96	151	137	124					
		20	117	103	94	151	133	121					
		25	117	101	92	151	130	119					
		30	117	99	91	151	127	117					
		40	112	96	88	145	124	114					
	50	109	94	87	140	121	112						
	60	106	92	85	137	119	110						
	15	102	93	--	132	120	109						
	20	102	90	--	132	117	106						
	25	102	88	--	132	114	--						
	30	102	87	--	132	112	--						
	40	98	--	--	127	108	--						
	50	95	--	--	123	106	--						
	60	93	--	--	120	--	--						
	15	151	137	124	195	177	160						
	20	151	133	121	195	172	157						
	25	151	130	119	195	168	154						
30	151	127	117	195	164	151							
40	145	124	114	187	160	147							
50	140	121	112	181	156	144							
60	137	119	110	177	153	142							
7.25" NichiBoard™	*Double HD MAZE Asphalt & Fiberglass Shingle Nail	Blind	16	7.25	SYP	-54.7	15	151	137	124	195	177	160
							20	151	133	121	195	172	157
							25	151	130	119	195	168	154
							30	151	127	117	195	164	151
							40	145	124	114	187	160	147
							50	140	121	112	181	156	144
							60	137	119	110	177	153	142

\*Fasteners shall be located a minimum distance of 3/4" from the vertical siding edges at corners and splices.

Design Pressure Tables continued

Table 2c - Continued (NichiBoard™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>			
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D	
7.25" NichiBoard™	Aerosmith Fastening Systems, VersaPin	Face	16	7.25	20 GA Steel	-117.5	15	170	170	170	210	210	210	
							20	170	170	170	210	210	210	
							25	170	170	170	210	210	210	
							30	170	170	170	210	210	210	
							40	170	170	167	210	210	210	
							50	170	170	164	210	210	210	
							60	170	170	162	210	210	209	
			24	7.25	20 GA Steel	-78.3	15	170	164	149	210	210	192	
							20	170	159	145	210	205	188	
							25	170	156	143	210	201	184	
							30	170	152	140	210	197	181	
							40	170	148	137	210	191	176	
							50	168	145	134	210	187	173	
							60	164	142	132	210	183	170	
8.25" NichiBoard™	6d Double HD MAZE Coil Nail	Face	16	8.25	SPF	-37.5	15	125	113	103	161	146	133	
							20	125	110	100	161	142	130	
							25	125	108	99	161	139	127	
							30	125	105	97	161	136	125	
							40	120	102	95	155	132	122	
							50	116	100	93	150	129	120	
					DF		-58.0	15	155	141	128	200	182	165
								20	155	137	125	200	177	161
								25	155	134	123	200	173	158
								30	155	131	121	200	169	156
								40	149	127	118	192	164	152
								50	144	124	115	186	161	149
			SPF	-25.0	15	102	92	--	132	119	108			
					20	102	90	--	132	116	106			
					25	102	88	--	132	114	--			
					30	102	86	--	132	111	--			
					40	98	--	--	126	108	--			
					50	95	--	--	122	105	--			
			24	8.25	DF	-38.6	15	127	115	104	164	148	135	
							20	127	112	102	164	144	132	
							25	127	109	100	164	141	129	
							30	127	107	98	164	138	127	
							40	122	104	96	157	134	124	
							50	118	102	94	152	131	121	
SPF	-25.0	15			102		92	--	132	119	108			
		20			102		90	--	132	116	106			
		25			102		88	--	132	114	--			
		30			102		86	--	132	111	--			
		40			98		--	--	126	108	--			
		50			95		--	--	122	105	--			
8.25" NichiBoard™	Double HD MAZE Asphalt & Fiberglass Shingle Nail	Blind	12	8.25	7/16" OSB	-29.5	15	111	100	91	143	130	118	
							20	111	98	89	143	126	115	
							25	111	96	87	143	123	113	
							30	111	94	86	143	121	111	
							40	106	91	--	137	117	108	
							50	103	89	--	133	114	106	
			16	8.25	SPF		-23.7	15	99	90	--	128	116	106
								20	99	87	--	128	113	--
								25	99	86	--	128	110	--
								30	99	--	--	128	108	--
								40	95	--	--	123	105	--
								50	92	--	--	119	--	--
	*Double HD MAZE Asphalt & Fiberglass Shingle Nail	8.25	Blind	-43.0	15	134	121	110	173	157	142			
					20	134	118	108	173	152	139			
					25	134	115	106	173	149	136			
					30	134	113	104	173	146	134			
					40	128	110	101	166	142	131			
					50	124	107	99	160	138	128			
60	121	105	98	157	136	126								

\*Fasteners shall be located a minimum distance of 3/4" from the vertical siding edges at corners and splices.

Design Pressure Tables continued

Table 2c - Continued (NichiBoard™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>									
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D							
8.25" NichiBoard™	Aerosmith Fastening Systems, VersaPin	Face	16	8.25	20 GA Steel	-103.3	15	170	170	170	210	210	210							
							20	170	170	167	210	210	210							
							25	170	170	164	210	210	210							
							30	170	170	161	210	210	208							
							40	170	170	157	210	210	203							
							50	170	166	154	210	210	199							
							60	170	163	151	210	210	195							
			24	8.25	20 GA Steel	-68.8	15	169	153	139	210	198	180							
							20	169	149	136	210	193	176							
							25	169	146	134	210	188	173							
							30	169	143	131	210	185	170							
							40	162	139	128	210	179	165							
							50	157	136	126	203	175	162							
							60	153	133	124	198	172	160							
9.25" NichiBoard™	6d Double HD MAZE Coil Nail	Face	16	9.25	SPF	-33.4	15	118	107	97	152	138	125							
							20	118	104	95	152	134	122							
							25	118	102	93	152	131	120							
							30	118	100	92	152	129	118							
							40	113	97	89	146	125	115							
							50	110	94	88	141	122	113							
					DF		-51.7	15	147	133	121	189	172	156						
								20	147	129	118	189	167	152						
								25	147	126	116	189	163	150						
								30	147	124	114	189	160	147						
								40	141	120	111	182	155	143						
								50	136	117	109	176	152	140						
			24	9.25	SPF	-22.3	15	96	87	--	124	113	--							
							20	96	--	--	124	110	--							
							25	96	--	--	124	107	--							
							30	96	--	--	124	--	--							
							40	92	--	--	119	--	--							
							50	89	--	--	115	--	--							
					DF		-34.5	15	120	109	99	154	140	127						
								20	120	106	96	154	136	124						
								25	120	103	95	154	133	122						
								30	120	101	93	154	131	120						
								40	115	98	91	148	127	117						
								50	111	96	89	144	124	115						
9.25" NichiBoard™	Double HD MAZE Asphalt & Fiberglass Shingle Nail	Blind	12	9.25	*7/16" OSB	-23.5	15	99	90	--	127	116	105							
							20	99	87	--	127	112	--							
							25	99	85	--	127	110	--							
							30	99	--	--	127	108	--							
							40	95	--	--	122	--	--							
							50	92	--	--	118	--	--							
							60	90	--	--	116	--	--							
							9.25" NichiBoard™	Aerosmith Fastening Systems, VersaPin	Face	16	9.25	20 GA Steel	-92.1	15	170	170	161	210	210	208
														20	170	170	157	210	210	203
														25	170	169	155	210	210	200
														30	170	165	152	210	210	196
														40	170	160	148	210	207	191
50	170	157	145	210	202	188														
60	170	154	143	210	199	185														
24	9.25	20 GA Steel	-61.4	15	160	145				132	206	187	170							
				20	160	141				129	206	182	166							
				25	160	138				126	206	178	163							
				30	160	135				124	206	174	160							
				40	153	131				121	198	169	156							
				50	148	128				119	192	165	153							
				60	145	126				117	187	162	151							

Design Pressure Tables continued

Table 2c - Continued (NichiBoard™)<sup>1,4,7</sup>

Siding Type	Siding Fastener <sup>5</sup>	Face/Blind	Effective Fastener Spacing		Framing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
			Frame/Horizontal (in)	Field (in)				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
12" NichiBoard™	6d Double HD MAZE Coil Nail	Face	16	12	SPF	-25.8	15	103	94	85	134	121	110
							20	103	91	--	134	118	108
							25	103	89	--	134	115	106
							30	103	87	--	134	113	--
							40	99	--	--	128	110	--
							50	96	--	--	124	107	--
					60	94	--	--	121	105	--		
					DF	-39.8	15	129	117	106	166	151	137
							20	129	113	104	166	147	134
							25	129	111	102	166	143	131
							30	129	109	100	166	140	129
							40	123	106	97	159	136	126
			50	120			103	96	154	133	123		
			SPF	-17.2	15	--	--	--	109	--	--		
					20	--	--	--	109	--	--		
					25	--	--	--	109	--	--		
					30	--	--	--	109	--	--		
					40	--	--	--	--	--	--		
					50	--	--	--	--	--	--		
			24	12	DF	-26.6	15	105	95	87	136	123	112
							20	105	93	--	136	120	109
							25	105	91	--	136	117	107
							30	105	89	--	136	115	105
							40	101	86	--	130	111	--
50	98	--					--	126	109	--			
60	95	--			--	123	107	--					
20 GA Steel	-71.0	15			170	156	142	210	201	183			
		20			170	151	138	210	196	179			
		25			170	148	136	210	191	175			
		30			170	145	133	210	187	172			
		40			165	141	130	210	182	168			
		50	160	138	128	206	178	165					
60	156	135	126	201	175	162							
12" NichiBoard™	Aerosmith Fastening Systems, VersaPin	Face	24	12	20 GA Steel	-47.3	15	140	127	116	181	164	149
							20	140	124	113	181	160	146
							25	140	121	111	181	156	143
							30	140	119	109	181	153	141
			40	135	115	106	174	149	137				
			50	130	112	104	168	145	134				
			60	127	110	103	164	142	132				

Notes:

1. NichiBoard™ fiber cement lap/shingle siding may only be installed on vertical walls. Fasteners must be installed in a way that does not damage the board during installation. Where necessary, pre-drilled holes may be used in combination with hand-nailed fasteners to avoid damage to the fiber cement product.
2. ASCE 7-05 Basic Wind Speeds are based upon occupancy category II, a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 170mph.
3. ASCE 7-10 Ultimate Wind Speeds are based upon a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 210mph.
4. The values in this table are based on testing per ASTM E330 and represent the allowable capacity of the siding to resist the wind pressures associated with the corresponding wind speed.
5. Fastener specifications for those used in testing are outlined in Table 3 of this PER. These specifications may be used by the designer of record to determine the acceptability of alternative fasteners.
6. Allowable design pressures in highlighted cells have been adjusted based on the listed allowable withdrawal capacity of the tested fastener.
7. Framing and bracing are beyond the scope of this evaluation report.

Design Pressure Tables continued

Table 2d - Design Loads for Negative Transverse Wind Load (NichiPanel™)<sup>1,4,7</sup>

Panel Fastener <sup>5</sup>	Fastener Spacing		Framing Type	Framing Spacing	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	Perimeter (in)	Field (in)					Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
6d Double HD MAZE Coil Nail	6	12	SPF Lumber	16"o.c.	-28.7	15	109	99	90	141	128	116
						20	109	96	88	141	124	113
						25	109	94	86	141	122	111
						30	109	92	--	141	119	109
						40	105	90	--	135	116	107
						50	101	87	--	131	113	--
						60	99	86	--	128	111	--
6d Double HD MAZE Coil Nail	8	8	SPF Lumber	16"o.c.	-43.0	15	134	121	110	173	157	142
						20	134	118	108	173	152	139
						25	134	115	106	173	149	136
						30	134	113	104	173	146	134
						40	128	110	101	166	142	131
						50	124	107	99	160	138	128
						60	121	105	98	157	136	126
			SPF Lumber	24"o.c.	-30.4	15	112	102	93	145	132	120
						20	112	99	91	145	128	117
						25	112	97	89	145	125	115
						30	112	95	87	145	123	113
						40	108	92	85	139	119	110
						50	105	90	--	135	116	108
						60	102	88	--	132	114	106
6d Double HD MAZE Coil Nail	6	6	SPF Lumber	16"o.c.	-57.3	15	154	140	127	199	181	164
						20	154	136	124	199	176	160
						25	154	133	122	199	172	157
						30	154	130	120	199	168	155
						40	148	127	117	191	163	151
						50	143	124	115	185	160	148
						60	140	121	113	181	157	146
			SPF Lumber	24"o.c.	-40.6	15	130	118	107	168	152	138
						20	130	115	105	168	148	135
						25	130	112	103	168	145	133
						30	130	110	101	168	142	130
						40	125	107	98	161	138	127
						50	121	104	96	156	134	125
						60	118	102	95	152	132	123
6d Double HD MAZE Coil Nail	4	4	SPF Lumber	16"o.c.	-85.9	15	170	170	156	210	210	201
						20	170	167	152	210	210	196
						25	170	163	149	210	210	193
						30	170	160	147	210	206	189
						40	170	155	143	210	200	185
						50	170	151	140	210	195	181
						60	170	149	138	210	192	178
			SPF Lumber	24"o.c.	-60.9	15	159	144	131	205	186	169
						20	159	140	128	205	181	165
						25	159	137	126	205	177	162
						30	159	134	124	205	174	159
						40	153	130	120	197	168	156
						50	148	127	118	191	165	152
						60	144	125	116	186	162	150

Design Pressure Tables continued

Table 2d - Continued (NichiPanel™)<sup>1,4,7</sup>

Panel Fastener <sup>5</sup>	Fastener Spacing		Framing Type	Framing Spacing	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	Perimeter (in)	Field (in)					Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
8d Masonite Siding Nails	6	12	SPF Lumber	16"o.c.	-39.9	15	129	117	106	166	151	137
						20	129	114	104	166	147	134
						25	129	111	102	166	143	131
						30	129	109	100	166	141	129
						40	124	106	98	160	136	126
						50	120	103	96	155	133	123
	60	117	101	94	151	131	122					
	15	105	95	87	136	123	112					
	20	105	93	--	136	120	109					
	25	105	91	--	136	117	107					
	30	105	89	--	136	115	105					
	40	101	86	--	130	111	--					
50	98	--	--	126	109	--						
60	95	--	--	123	107	--						
8d Masonite Siding Nails	8	8	SPF Lumber	16"o.c.	-59.9	15	158	143	130	204	185	168
						20	158	139	127	204	180	164
						25	158	136	125	204	176	161
						30	158	133	123	204	172	158
						40	151	129	119	195	167	154
						50	147	126	117	189	163	151
	60	143	124	115	185	160	149					
	15	129	117	106	166	151	137					
	20	129	114	104	166	147	134					
	25	129	111	102	166	143	131					
	30	129	109	100	166	141	129					
	40	124	106	98	160	136	126					
50	120	103	96	155	133	123						
60	117	101	94	151	131	122						
8d Masonite Siding Nails	6	6	SPF Lumber	16"o.c.	-79.9	15	170	165	150	210	210	194
						20	170	161	147	210	207	189
						25	170	157	144	210	203	186
						30	170	154	142	210	199	183
						40	170	149	138	210	193	178
						50	169	146	135	210	188	175
	60	165	143	133	210	185	172					
	15	149	135	123	192	174	158					
	20	149	131	120	192	169	155					
	25	149	128	118	192	166	152					
	30	149	126	116	192	162	149					
	40	143	122	113	184	158	145					
50	138	119	110	179	154	143						
60	135	117	109	174	151	140						
8d Masonite Siding Nails	4	4	SPF Lumber	16"o.c.	-119.8	15	170	170	170	210	210	210
						20	170	170	170	210	210	210
						25	170	170	170	210	210	210
						30	170	170	170	210	210	210
						40	170	170	169	210	210	210
						50	170	170	166	210	210	210
	60	170	170	163	210	210	210					
	15	170	165	150	210	210	194					
	20	170	161	147	210	207	189					
	25	170	157	144	210	203	186					
	30	170	154	142	210	199	183					
	40	170	149	138	210	193	178					
50	169	146	135	210	188	175						
60	165	143	133	210	185	172						

Design Pressure Tables continued

Table 2d - Continued (NichiPanel™)<sup>1,4,7</sup>

Panel Fastener <sup>5</sup>	Fastener Spacing		Framing Type	Framing Spacing	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	Perimeter (in)	Field (in)					Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
Grabber #8 Flat Wafer Head Screws	6	12	SPF Lumber	16"o.c.	-55.9	15	152	138	126	197	179	162
						20	152	134	123	197	173	158
						25	152	131	120	197	170	156
						30	152	129	118	197	166	153
						40	146	125	115	189	161	149
						50	142	122	113	183	158	146
			60	138	120	111	179	155	144			
			20 GA Steel	24"o.c.	-37.3	15	124	113	103	161	146	132
						20	124	110	100	161	142	129
						25	124	107	98	161	139	127
						30	124	105	97	161	136	125
						40	119	102	94	154	132	122
	50	116				100	92	149	129	119		
	20 GA Steel	16"o.c.	-48.5	15	142	129	117	183	166	151		
				20	142	125	114	183	162	148		
				25	142	123	112	183	158	145		
				30	142	120	110	183	155	142		
				40	136	116	108	176	150	139		
				50	132	114	105	170	147	136		
		60	129	112	104	166	144	134				
		24"o.c.	-32.4	15	116	105	96	150	136	123		
				20	116	102	93	150	132	121		
				25	116	100	92	150	129	118		
				30	116	98	90	150	127	116		
40				111	95	88	144	123	113			
50	108			93	86	139	120	111				
60	105	91	--	136	118	109						
Grabber #8 Flat Wafer Head Screws	8	8	SPF Lumber	16"o.c.	-83.8	15	170	169	154	210	210	199
						20	170	165	150	210	210	194
						25	170	161	147	210	208	190
						30	170	158	145	210	204	187
						40	170	153	141	210	198	182
						50	170	149	138	210	193	179
			60	169	147	136	210	190	176			
			20 GA Steel	24"o.c.	-55.9	15	152	138	126	197	179	162
						20	152	134	123	197	173	158
						25	152	131	120	197	170	156
						30	152	129	118	197	166	153
						40	146	125	115	189	161	149
	50	142				122	113	183	158	146		
	60	138	120	111	179	155	144					
	20 GA Steel	16"o.c.	-72.8	15	170	158	143	210	204	185		
				20	170	153	140	210	198	181		
				25	170	150	137	210	194	177		
				30	170	147	135	210	190	174		
				40	167	143	132	210	184	170		
				50	162	139	129	209	180	167		
	60	158	137	127	204	177	164					
	24"o.c.	-48.5	15	142	129	117	183	166	151			
			20	142	125	114	183	162	148			
			25	142	123	112	183	158	145			
30			142	120	110	183	155	142				
40			136	116	108	176	150	139				
50			132	114	105	170	147	136				
60	129	112	104	166	144	134						

Design Pressure Tables continued

Table 2d - Continued (NichiPanel™)<sup>1,4,7</sup>

Panel Fastener <sup>5</sup>	Fastener Spacing		Framing Type	Framing Spacing	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	Perimeter (in)	Field (in)					Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
Grabber #8 Flat Wafer Head Screws	6	6	SPF Lumber	16"o.c.	-111.8	15	170	170	170	210	210	210
						20	170	170	170	210	210	210
						25	170	170	170	210	210	210
						30	170	170	167	210	210	210
						40	170	170	163	210	210	210
						50	170	170	160	210	210	207
			60	170	170	158	210	210	203			
			20 GA Steel	24"o.c.	-74.5	15	170	160	145	210	206	187
						20	170	155	142	210	200	183
						25	170	152	139	210	196	180
						30	170	149	137	210	192	176
						40	169	144	133	210	186	172
	50	164				141	131	210	182	169		
	20 GA Steel	16"o.c.	-97.0	15	170	170	166	210	210	210		
				20	170	170	162	210	210	209		
				25	170	170	159	210	210	205		
				30	170	170	156	210	210	201		
				40	170	165	152	210	210	196		
				50	170	161	149	210	208	192		
		24"o.c.	-64.6	15	164	149	135	210	192	174		
				20	164	145	132	210	187	170		
				25	164	141	130	210	183	167		
				30	164	138	127	210	179	164		
				40	157	134	124	203	174	160		
50				152	131	122	197	170	157			
Grabber #8 Flat Wafer Head Screws	4	4	SPF Lumber	16"o.c.	-136.0	15	170	170	170	210	210	210
						20	170	170	170	210	210	210
						25	170	170	170	210	210	210
						30	170	170	170	210	210	210
						40	170	170	170	210	210	210
						50	170	170	170	210	210	210
			20 GA Steel	24"o.c.	-90.6	15	170	170	160	210	210	207
						20	170	170	156	210	210	202
						25	170	167	153	210	210	198
						30	170	164	151	210	210	195
						40	170	159	147	210	206	190
						50	170	156	144	210	201	186
	20 GA Steel	16"o.c.	-136.0	15	170	170	170	210	210	210		
				20	170	170	170	210	210	210		
				25	170	170	170	210	210	210		
				30	170	170	170	210	210	210		
				40	170	170	170	210	210	210		
				50	170	170	170	210	210	210		
		24"o.c.	-90.6	15	170	170	160	210	210	207		
				20	170	170	156	210	210	202		
				25	170	167	153	210	210	198		
				30	170	164	151	210	210	195		
				40	170	159	147	210	206	190		
				50	170	156	144	210	201	186		
60	170	153	142	210	197	183						



Design Pressure Tables continued

Table 2d - Continued (NichiPanel™)<sup>1,4,7</sup>

Panel Fastener <sup>5</sup>	Fastener Spacing		Framing Type	Framing Spacing	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	Perimeter (in)	Field (in)					Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
Aerosmith Fastening Systems, VersaPin	6	12	20 GA Steel	16"o.c.	-29.3	15	110	100	91	142	129	117
						20	110	97	89	142	126	115
						25	110	95	87	142	123	113
						30	110	93	86	142	120	111
						40	106	90	--	137	117	108
						50	102	88	--	132	114	106
						60	100	87	--	129	112	--
Aerosmith Fastening Systems, VersaPin	8	8	20 GA Steel	16"o.c.	-43.9	15	135	123	111	174	158	144
						20	135	119	109	174	154	140
						25	135	117	107	174	150	138
						30	135	114	105	174	147	135
						40	130	111	102	167	143	132
						50	126	108	100	162	140	129
						60	123	106	99	158	137	127
Aerosmith Fastening Systems, VersaPin	6	6	20 GA Steel	16"o.c.	-58.5	15	156	141	129	201	183	166
						20	156	137	126	201	178	162
						25	156	135	123	201	174	159
						30	156	132	121	201	170	156
						40	150	128	118	193	165	152
						50	145	125	116	187	161	149
						60	141	123	114	183	158	147
Aerosmith Fastening Systems, VersaPin	4	4	20 GA Steel	16"o.c.	-87.9	15	170	170	158	210	210	203
						20	170	169	154	210	210	199
						25	170	165	151	210	210	195
						30	170	161	148	210	208	192
						40	170	157	145	210	202	187
						50	170	153	142	210	198	183
						60	170	150	140	210	194	180
	24"o.c.	-35.6	15	122	110	100	157	143	129			
			20	122	107	98	157	139	126			
			25	122	105	96	157	136	124			
			30	122	103	95	157	133	122			
			40	117	100	92	151	129	119			
			50	113	98	90	146	126	117			
			60	110	96	89	143	124	115			

Notes:

1. NichiPanel™ fiber cement panel siding may only be installed on vertical walls. Fasteners must be installed in a way that does not damage the board during installation. Where necessary, pre-drilled holes may be used in combination with hand-nailed fasteners to avoid damage to the fiber cement product.
2. ASCE 7-05 Basic Wind Speeds are based upon occupancy category II, a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (Gcpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 170mph.
3. ASCE 7-10 Ultimate Wind Speeds are based upon a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (Gcpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 210mph.
4. The values in this table are based on testing per ASTM E330 and represent the allowable capacity of the siding to resist the wind pressures associated with the corresponding wind speed.
5. Fastener specifications for those used in testing are outlined in Table 3 of this PER. These specifications may be used by the designer of record to determine the acceptability of alternative fasteners.
6. Allowable design pressures in highlighted cells have been adjusted based on the listed allowable withdrawal capacity of the tested fastener.
7. Framing and bracing are beyond the scope of this evaluation report.

**Design Pressure Tables** continued

**Table 2e - Design Loads for Negative Transverse Wind Load (NichiShake™)<sup>1,4,7</sup>**

Siding Fastener <sup>5</sup>	Fasteners per Shake			Sheathing Type	Allowable Design Pressure (psf) <sup>6</sup>	Building Height (ft)	ASCE 7-05 Basic Wind Speed (MPH) <sup>2</sup>			ASCE 7-10 Ultimate Wind Speed (MPH) <sup>3</sup>		
	6-1/4" Width	8-1/4" Width	12" Width				Exp B	Exp C	Exp D	Exp B	Exp C	Exp D
	6d Double HD MAZE Coil Nail	2	2				3	7/16" OSB	-30.6	15	113	102
20				113	99	91				146	128	117
25				113	97	89				146	126	115
30				113	95	88				146	123	113
40				108	93	85				140	119	110
50				105	90	--				135	117	108
60				102	89	--				132	115	106

- Notes:
1. **NichiShake™** fiber cement shake siding may only be installed on vertical walls. Fasteners must be installed in a way that does not damage the board during installation. Where necessary, pre-drilled holes may be used in combination with hand-nailed fasteners to avoid damage to the fiber cement product.
  2. ASCE 7-05 Basic Wind Speeds are based upon occupancy category II, a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/- 0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 170mph.
  3. ASCE 7-10 Ultimate Wind Speeds are based upon a wind directionality factor (Kd) equal to 0.85, an internal pressure coefficient (GCpi) equal to +/-0.18, and an external pressure coefficient (GCp) equal to -1.4. The effects of topographic features have not been considered and the wind speed has been limited to 210mph.
  4. The values in this table are based on testing per ASTM E330 and represent the allowable capacity of the siding to resist the wind pressures associated with the corresponding wind speed.
  5. Fastener specifications for those used in testing are outlined in Table 3 of this **PER**. These specifications may be used by the designer of record to determine the acceptability of alternative fasteners.
  6. Allowable design pressures in highlighted cells have been adjusted based on the listed allowable withdrawal capacity of the tested fastener.
  7. Framing and bracing are beyond the scope of this evaluation report.

**Fastener Specifications**

**Table 3 -Specifications of Tested Fasteners**

Siding Fastener	Length (in)	Head Diameter (in)	Shank Diameter (in)	Material <sup>1,2,3</sup>	Siding Type <sup>5</sup>	Minimum Fastner Penetration into Material (in)	Fastener Withdrawal Value (lbs)	
6d Double HD MAZE Coil Nail	2	0.237	0.099	SPF	NichiPanel™	1 11/16	42.2	
					NichiBoard™ (Face)	1 3/8	34.4	
					NichiBoard™ (Blind)	1 11/16	42.2	
					NichiStraight™/ NichiStaggered™	1 3/8	34.4	
	2.5	0.236	0.097	SPF	DF	NichiBoard™ (Face)	1 3/8	53.1
					NichiBoard™ (Blind)	1 11/16	65.2	
					7/16" OSB	NichiStraight™/ NichiStaggered™	7/16	16.9
					7/16" OSB	NichiShake™	7/16	16.9
6d Ring Shank Double HD MAZE Coil Nail	2	0.233	0.105	SPF	NichiFrontier™ (Face)	1 1/8	29.8	
					NichiFrontier™ (Blind)	1 9/16	41.4	
				7/16" OSB	NichiStraight™/ NichiStaggered™	7/16	17.9	
					SYP	NichiFrontier™ (Face)	1 1/8	46.1
	2.5	0.313	0.118	SPF	NichiFrontier™ (Blind)	1 9/16	64.0	
					NichiPanel™	2 3/16	65.2	
	Double HD MAZE Asphalt & Fiberglass Shingle Nail	1.75	0.365	0.125	SPF	NichiPanel™	2 3/16	65.2
						NichiBoard™ (Face)	1 1/8	35.5
7/16" OSB					NichiBoard™ (Blind)	1 7/16	45.4	
					SYP	NichiBoard™ (Blind)	1 7/16	70.1
					NichiBoard™ (Face)	7/16	21.3	
Double HD Grip Rite Roofing Nail	2.5	0.383	0.125	SPF w/ 7/16" OSB	NichiBoard™ (Blind)	7/16	21.3	
					NichiBoard™ (Face)	7/16	21.3	
	1.75	0.362	0.125	7/16" OSB	NichiFrontier™ (Face)	1 5/8	51.3	
					NichiFrontier™ (Blind)	2 1/16	65.1	
Grabber #8 Flat Wafer Head Screws <sup>6</sup>	1.625	0.406	0.166	SPF	NichiFrontier™ (Face)	7/16	21.3	
					NichiFrontier™ (Blind)	7/16	21.3	
Aerosmith Fastening Systems, VersaPin <sup>7</sup>	1.5	0.301	0.106	20 GA Steel	NichiPanel™	1 5/16	85.0	
					NichiPanel™	--	88.3	
	1.375	0.251	0.107	20 GA Steel	NichiPanel™	--	94.7	
					NichiPanel™	--	94.7	
#8-18 Wafer Head ROCK-ON™ Screws <sup>8</sup>	1.625	0.395	0.162	20 GA Steel	NichiBoard™ (Face)	--	94.7	
					NichiBoard™ (Blind)	--	94.7	
					NichiFrontier™ (Face)	--	95.0	
Aerosmith Fastening Systems, SurePin <sup>9</sup>	1.25	0.300	0.145	Concrete Block	NichiFrontier™ (Blind)	--	95.0	
					NichiStraight™/ NichiStaggered™	--	95.0	
	2	0.300	0.145	Concrete Block	NichiBoard™ (Face)	3/4	233.1	
2	0.300	0.145	Concrete Block	NichiBoard™ (Blind)	1 1/8	233.8		
				NichiStraight™/ NichiStaggered™	1 1/8	233.8		

Notes:

1. SPF (Spruce-Pine-Fir) framing material is assumed to have a Specific Gravity of 0.42 or greater.
2. DF (Douglas Fir) framing material is assumed to have a Specific Gravity of 0.5 or greater.
3. OSB sheathing material is assumed to have a Specific Gravity of 0.5 or greater. Where fasteners are installed through OSB sheathing into SPF studs, a Specific Gravity of 0.42 shall be assumed for the entire fastener penetration depth.
4. SYP (Southern Yellow Pine) framing material is assumed to have a Specific Gravity of 0.5 or greater.
5. Alternative fasteners must meet the minimum head and shank diameters listed in Table 3. The required length and withdrawal capacity shall be determined by the design professional of record in accordance with the requirements of Table 2a, 2b, 2c, & 2d of this PER.
6. Fastener pull-out capacity based on manufacturer (Grabber Construction Products, Inc.) technical data sheet and a safety factor of 3.
7. Fastener pull-out capacity based on PER-06014 and a safety factor of 3.
8. Fastener pull-out capacity based on ITW Buildex and Illinois Tool Works, Inc. Product Report No. 02722 and a safety factor of 3.
9. Fastener pull-out capacity based on PER-07021 and a safety factor of 5.

### Product Labeling

All **Nichiha NichiBoard™, NichiPanel™, NichiStraight™, NichiStaggered™, NichiShake™, and NichiFrontier™** Fiber Cement Siding **Products** that are covered by this **PER** must have at least the following information:

1. Brand name and type
2. Manufacturer name and address
3. Date code stamp
4. Florida Building Code (FBC) - FL#12098
5. California State Fire Marshall (CASFM) - #12-7A-1
6. Texas Department of Insurance (TDI) - EC 59
7. This **PER** Number & *Pei* **ES** Logo

### Acceptable Evaluation Marks



This information can be provided in one or both of the following ways;

1. Each Board can have this information applied to the back side.
2. A separate skid card with this information applied to each bundle or unit of boards.

### Product Pictures

**NichiPanel™ Fiber Cement Panels**



**NichiBoard™ Fiber Cement Lap Siding**





Product Pictures continued

**NichiShake™ Fiber Cement Shake Siding**



**NichiStraight™/NichiStaggered™ Fiber Cement Shingle Siding**



**NichiFrontier™ Fiber Cement Lap Siding**



## Product Documentation

A MSDS sheet for **NichiProducts™** - Dated: 07/2012.

A Product Specification Sheet for **NichiBoard™** lap siding.

A Product Specification Sheet for **NichiPanel™** sheathing/siding.

A Product Specification Sheet for **NichiStraight™ and NichiStaggered™** lap siding.

A Product Specification Sheet for **NichiShake™** individual shakes.

A Product Specification Sheet for **NichiFrontier™** lap siding.

A Q.C. Manual - Dated: April 2014

A Follow-up and Service Agreement between **Progressive Engineering Inc.** and **Nichiha USA.**

PEI Test No. 2009-773 (A) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Primed Cedar) Vertical on 16" o.c. Lumber Framing using 2" 6d Siding Nails, 6" x 12" o.c. - Dated: 7/24/2009

PEI Test No. 2009-773 (B) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Primed Cedar) on 16" o.c. Lumber Framing using 2" 6d Siding Nails - Dated: 7/30/2009

PEI Test No. 2009-773 (C) - ASTM E330 Negative Wind load Test on Dry 5/16" x 6.25" Wide **NichiBoard™** (Primed Cedar) on 16" o.c. Lumber Framing using 1-3/4" Roofing Nails - Blind - Dated: 8/3/2009

PEI Test No. 2009-773 (D) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Primed Cedar) Vertical on 16" o.c. Lumber Framing using Grabber #8 x 1-5/8" Screws, 6" x 12" o.c. - Dated: 8/5/2009

PEI Test No. 2009-773 (E) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Primed Cedar) Vertical on 24" o.c. Lumber Framing using Grabber #8 x 1-5/8" Screws, 4" x 4" o.c. - Dated: 8/5/2009

PEI Test No. 2009-773 (F) - ASTM E330 Negative Wind load Test on Dry 5/16" x 8.25" Wide **NichiBoard™** (Smooth) on 16" o.c. Lumber Framing using 1-3/4" Roofing Nails - Blind - Dated: 8/7/2009

PEI Test No. 2009-773 (G) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Primed Cedar) Vertical on 16" o.c. Steel Framing using 1-1/2" VersaPins, 8" x 8" o.c. - Dated: 8/18/2009

PEI Test No. 2009-773 (H) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Primed Cedar) Vertical on 16" o.c. Lumber Framing using 2-1/2" 8d Siding Nails, 8" x 8" o.c. - Dated: 8/24/2009

PEI Test No. 2009-773 (I) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Primed Cedar) on 16" o.c. Lumber Framing using 2" 6d Siding Nails - Blind - Dated: 9/16/2009

PEI Test No. 2009-773 (J) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Smooth) on 16" o.c. Lumber Framing using 1-3/4" Roofing Nails - Blind - Dated: 9/17/2009

PEI Test No. 2009-773 (K) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Smooth) on 24" o.c. Lumber Framing using 1-3/4" Roofing Nails - Blind - Dated: 9/17/2009

PEI Test No. 2009-773 (L) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Smooth) on 24" o.c. Steel Framing using 1-1/2" VersaPin™ - Blind - Dated: 10/7/2009

PEI Test No. 2009-773 (M) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Smooth) on 16" o.c. Steel Framing using 1-1/2" VersaPin™ - Blind - Dated: 10/7/2009

PEI Test No. 2009-773 (N) - ASTM E330 Negative Wind load Test on Dry 5/16" x 12" Wide **NichiBoard™** (Primed Cedar) on 24" o.c. Lumber Framing using 2" 6d Siding Nails - Dated: 8/26/2009

PEI Test No. 2009-773 (O) - ASTM E330 Negative Wind load Test on Dry 5/16" x 7.25" Wide **NichiBoard™** (Smooth) on 16" o.c. Steel Framing using 1-1/2" VersaPin™ - Dated: 10/9/2009

PEI Test No. 2009-773 (P) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Smooth) Vertical on 24" o.c. Lumber Framing using 2" 6d Siding Nails, 6" x 12" o.c. - Dated: 10/13/2009

PEI Test No. 2009-773 (Q) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Smooth) Vertical on 24" o.c. Steel Framing using 1-3/4" VersaPins, 4" x 4" o.c. - Dated: 10/15/2009

PEI Test No. 2009-773 (R) - ASTM E330 Negative Wind load Test on Dry 5/16" x 48" x 96" **NichiPanel™** (Smooth) Vertical on 16" o.c. Steel Framing using Grabber #8 x 1-5/8" Screws, 6" x 12" o.c. - Dated: 10/16/2009

PEI Test No. 2009-773 (S) - ASTM E330 Negative Wind load Test on Dry 5/16" x 8.25" Wide **NichiBoard™** (Primed Cedar) on 16" o.c. Lumber Framing using 2-1/2" 6d Siding Nails - Dated: 11/4/2009

PEI Test No. 2011-744 (A) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 24" o.c. Lumber Framing using 2" 6d Siding Nails - Face - Dated: 6/8/2011

PEI Test No. 2011-744 (B) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 12" o.c. Lumber Framing using 2" 6d Siding Nails - Face - Dated: 6/15/2011

PEI Test No. 2011-744 (C) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 16" o.c. Lumber Framing, with OSB using 2-1/2" Roofing Nails - Blind - Dated: 6/27/2011

PEI Test No. 2011-744 (D) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 24" o.c. Lumber Framing, with OSB using 1-3/4" Roofing Nails - Blind - Dated: 8/2/2011

PEI Test No. 2011-744 (E) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 24" o.c. Steel Framing using #8-18 x 1-5/8" Screws - Face - Dated: 7/19/2011

**Product Documentation continued**

- PEI Test No. 2011-744 (F) - ASTM E330 Negative Wind load Test on Dry 7/16" x 9.25" Wide **NichiFrontier™** on 16" o.c. Steel Framing using #8-18 x 1-5/8" Screws - Blind - Dated: 7/14/2011
- PEI Test No. 2011-311 (A) - ASTM E330 Negative Wind load Test on Dry 5/16" **NichiStraight™/NichiStaggered™** Shingle Siding on 24" o.c. Lumber Framing, with OSB (6"x12") - Dated: 2/23/2011
- PEI Test No. 2011-311 (B) - ASTM E330 Negative Wind load Test on Dry 5/16" **NichiStraight™/NichiStaggered™** Shingle Siding, Fastened Direct to 16" o.c. Lumber Framing - Dated: 3/1/2011
- PEI Test No. 2011-311 (C) - ASTM E330 Negative Wind load Test on Dry 5/16" **NichiStraight™/NichiStaggered™** Shingle Siding using Ring-shank Nails on 24" o.c. Lumber Framing, with OSB (6"x12") - Dated: 3/4/2011
- PEI Test No. 2011-311 (D) - ASTM E330 Negative Wind load Test on Dry 5/16" **NichiStraight™/NichiStaggered™** Shingle Siding, Fastened Direct to 24" o.c. Steel Framing - Dated: 3/8/2011
- PEI Test No. 2010-191 (A) - ASTM E330 Negative Wind load Test on Dry 6-1/4", 8-1/4", and 12" Wide x 17-7/8" Tall **NichiShake™** on 24" o.c. Lumber Framing, with OSB (6" x 6") - Dated: 2/8/2010
- PEI Test No. 2010-191 (A) - ASTM E330 Negative Wind load Test on Dry 6-1/4", 8-1/4", and 12" Wide x 17-7/8" Tall **NichiShake™** on 24" o.c. Lumber Framing, with OSB (6" x 12") - Dated: 2/8/2010
- PEI Test No. 2014-920 (B) - ASTM E330 Negative Wind load Test on Dry 5/16" thk. x 7-1/4" **NichiBoard** Fiber Cement Lap Siding on 24" o.c. Framing with 7/16" OSB using 1-3/4" Roofing Nails - Blind @ 12" o.c. - Dated: 8/15/2014
- A Test Report #3105885COQ-002: Report of **NichiProducts™** Fiber-Cement Panels for the selected requirements of the following criteria: ASTM E136-99, *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.*
- A Test Report #3145123COQ-005: Report of **NichiProducts™** Fiber-Cement Panels for the selected requirements of the following criteria: ASTM C1186-07, *Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets.*
- A Test Report #3145123COQ-006: Report of **NichiProducts™** Fiber-Cement Panels for the selected requirements of the following criteria: ASTM E84-08, *Standard Test Method for Surface Burning Characteristics of Materials.*
- A Test Report #3145128COQ-001: Report of **NichiProducts™** Fiber-Cement Panels for the selected requirements of the following criteria: ASTM E119-08a, *Standard Test Methods for Fire Tests of Building Construction and Materials.*
- A Test Report #3145127COQ-004A: Report of **NichiPanel™** Fiber-Cement Panels for the selected requirements of the following criteria: TAS 201-94 *Impact Test Procedures*, TAS 202-94 *Criteria for Testing Impact & Non-impact Resistant Building Envelope Components Using Uniform Static Air Pressure*, and TAS 203-94 *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*
- A Test Report #3145127COQ-004B: Report of **NichiBoard™** Fiber-Cement Lap Siding for the selected requirements of the following criteria: TAS 201-94 *Impact Test Procedures*, TAS 202-94 *Criteria for Testing Impact & Non-impact Resistant Building Envelope Components Using Uniform Static Air Pressure*, and TAS 203-94 *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*
- A Test Report #3145128COQ-011: Report of **NichiProducts™** Fiber-Cement Panels for the selected requirements of the following criteria: ICC-ES AC 90, *Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding, Approved October 2005.*
- A Test Report #E5268.01-550-44: ASTM E330-02 Wind Pressure Test of 7-1/4" **NichiBoard** Fiber Cement Lap Siding Installed Over Lumber Framing and 7/16" OSB with 1-3/4" Hot Dipped "MAZE" Nails at the Studs - Dated: 6/22/2015
- A Test Report #E7203.01-550-44: ASTM E330-02 Wind Pressure Test of 8-1/4" **NichiBoard** Fiber Cement Lap Siding Installed Over Lumber Framing and 7/16" OSB with 1-3/4" Hot Dipped "MAZE" Nails at the Studs - Dated: 7/8/2015
- A Letter from Test Lab Verifying Specific Fastener Used in Test Report #E7203.01-550-44 and Test Report #E5268.01-550-44 - Dated 7/20/2015