



**NEMO|etc.**

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**EVALUATION REPORT**

**PLYCEM USA LLC**

Fiber Cement Products  
15055 Woodham Drive  
Houston, TX 77073  
**(281) 813-1260**

**Evaluation Report 9915.06.16-R4**

**FL20742-R4**

**Date of Issuance: 06/17/2016**

**Revision 4: 02/21/2019**

**SCOPE:**

This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the **State of Florida**. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **6<sup>th</sup> Edition (2017) Florida Building Code** sections noted herein.

**DESCRIPTION: Allura™ Fiber Cement Siding**

**LABELING:** Labeling shall be in accordance with **FBC 1404.10** and the requirements the Accredited Quality Assurance Agency noted herein.

**CONTINUED COMPLIANCE:** This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO|etc. requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

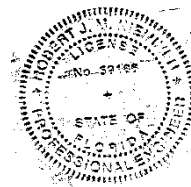
**ADVERTISEMENT:** The Evaluation Report number preceded by the words “NEMO|etc. Evaluated” may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

**INSPECTION:** Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 3, plus an 8-page Appendix.

**Prepared by:**

**Robert J.M. Nieminen, P.E.**  
*Florida Registration No. 59166, Florida DCA ANE1983*



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 02/21/2019. This does not serve as an electronically signed document.

**CERTIFICATION OF INDEPENDENCE:**

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO|etc. nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

**PANEL WALLS - SIDING EVALUATION:**
**1. SCOPE:**
**Product Category:** Panel Walls

**Sub-Category:** Siding

**Compliance Statement:** Allura™ Fiber Cement Siding, as produced by PLYCEM USA LLC, has demonstrated compliance with the following sections of the 6<sup>th</sup> Edition (2017) Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

**2. STANDARDS:**

Section	Property	Standard	Year
1404.10	Physical Properties	ASTM C1186	2012
1609.1	Wind	ASTM E330	2002

**3. REFERENCES:**

Entity	Examination	Reference	Date
ERD (TST6049)	Transverse Load (Wind)	Florida Windload Testing	06/15/2016
ERD (TST6049)	Transverse Load (Wind)	7.25B/W/16	08/22/2016
ERD (TST6049)	Transverse Load (Wind)	The Cove	10/26/2016
ERD (TST6049)	Transverse Load (Wind)	7.25/B/CMU/16	12/04/2017
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1000	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1021	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1023	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1058	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1060	04/11/2002
ITS (TST1509)	Physical Properties	3155389COQ-004	11/24/2008
ICC-ES (EVL2396)	2012 IBC/IRC Compliance	ESR-1381	10/01/2016
NEMO (TST6049)	Physical Properties	ERD-SC13565.10.18	10/18/2018
QAI (TST9808)	Transverse Load (Wind)	RJ0893-5	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ0893-6	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ0893-9	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ0893-10	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ0893-11	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ0893-12	12/20/2010
QAI (TST9808)	Transverse Load (Wind)	RJ2420-P	04/18/2013
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-5	02/09/2019
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-6	02/09/2019
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-1-R1	02/11/2019
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-2-R1	02/11/2019
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-3-R1	02/11/2019
QAI (TST9808)	Racking / Shear Load (E72)	RJ6701P-4-R1	02/11/2019
PLYCEM USA LLC	Quality Assurance	Declaration Letter	02/01/2017
QAI (QUA7628)	Quality Assurance	Inspection Report (NC)	07/09/2018
QAI (QUA7628)	Quality Assurance	Inspection Report (MX)	09/14/2018

**4. PRODUCT DESCRIPTION:**

- 4.1 **Allura™ Fiber Cement Siding** is composed of portland cement, silica, cellulose fiber, clay or fly ash and limestone. **Allura™ Fiber Cement Siding** is minimum 5/16-inch thick and meets ASTM C1186, Type A, Grade II (Reference: **FBC 1404.10**).
- 4.1.1 **Vertical Panel Siding** is flat, fiber-cement, panel-siding available with smooth or textured exterior surfaces; 48-inch wide by 8, 9, 10 or 12 ft long.
- 4.1.2 **Lap Siding** are flat, fiber-cement, lap-siding available with smooth or textured exterior surfaces; 5¼, 6¼, 7¼, 8¼ or 9¼-inch wide by 12 ft long.

- 4.1.3 **Shapes Siding** are flat, fiber-cement, panel-siding available with smooth or textured exterior surfaces of various designs; “**Random Square Strait Edge**”, “**Random Square Staggered Edge**”, “**Half-Rounds**” and “**Octagons**”; 16-inch wide by 48-inch.

## 5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
- 5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.
- 5.3 This Evaluation Report does not address fire-resistance-rating performance of the completed wall assemblies.
- 5.4 Shear load performance data for Vertical Panel Siding is presented in Appendix 2. Lap Siding and Shapes Siding are not intended for racking or shear resistance; walls shall be braced by other means as required by the Authority Having Jurisdiction.
- 5.5 Limitations relating to wind load resistance are outlined in Appendix 1.
- 5.5.1 “MDP” = Maximum Allowable Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to **FBC 1609** for determination of design wind loads.
- 5.5.2 Maximum Ultimate Wind Speeds shall be as defined in **1609.3(1)**, **1609.3(2)** or **1609.3(3)** of the **6<sup>th</sup> Edition (2017) Florida Building Code**, depending on the project Risk Category (**FBC 1604.5**) and Exposure Category (**FBC 1609.4.3**), as defined by the Designer of Record and acceptable to the Authority Having Jurisdiction. Maximum Ultimate Wind Speeds are limited to projects meeting the following:
- ✓ Maximum height of 30 ft
  - ✓ Enclosed building (Internal Pressure Coefficient, GC<sub>pi</sub> = ± 0.18);
  - ✓ Site conditions and location of the structure do not meet all conditions specified in Section 26.8.1 of **ASCE 7-10** (K<sub>zt</sub> = 1.0).
- Analysis for buildings falling outside these constraints shall be on a project-by-project basis by a Florida Registered PE.
- 5.6 All products in the wall assembly shall have quality assurance audit in accordance with **F.A.C. Rule 61G20-3**.

## 6. INSTALLATION:

- 6.1 **Allura™ Fiber Cement Siding** shall be installed in accordance with **PLYCEM USA LLC** published installation instructions, subject to the Limitations / Conditions of Use noted herein.
- 6.2 The underlying wall substrate shall include a water-resistive barrier in accordance with **FBC 1403.2**.
- 6.3 Minimum system attachment requirements are set forth in Appendix 1, and shall not be exceeded. Fastener lengths noted are minimum lengths, and shall be adjusted as necessary for minimum 1-inch embedment into wood studs or minimum three full threads for metal framing (Reference: **FBC 1405.16**).

## 7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction in order to properly evaluate the installation of this product.

## 8. MANUFACTURING PLANTS:

Nuevo Laredo, Mexico  
North Wilkesboro, NC (aka, “Roaring River”)

## 9. QUALITY ASSURANCE ENTITY:

QAI Laboratories – QUA7628; (604) 527-8378; [mlansdowne@qai.org](mailto:mlansdowne@qai.org)

**- THE EIGHT (8) PAGE APPENDICES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -**

**APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND RESISTANCE**

Table	Type	Application	Fastener Engage	Page
1	Allura™ Panel Siding	Face Fastened	Framing	2
2A	Allura™ Lap Siding	Blind Fastened	Framing	3
2B	Allura™ Lap Siding	Face Fastened	Framing	3
2C	Allura™ Lap Siding	Blind Fastened	Sheathing	4
2D	Allura™ Lap Siding	Blind Fastened	Framing & Furring Strips	5
2E	Allura™ Lap Siding	Blind Fastened	Vertical Battens	5
3	Allura™ Shapes Siding	Blind Fastened	Framing	6

**The following notes apply to the systems outlined herein:**

- Substrates shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- Fasteners shall be corrosion resistant. Fastener lengths noted are minimum lengths, and shall be adjusted as necessary for minimum 1-inch embedment into wood studs or minimum three full threads for metal framing (Reference: **FBC 1405.16**).
- Vertical joints shall occur over wall framing and shall be staggered on subsequent courses. The siding shall be applied with a minimum 1¼ inch overlap. Position the fasteners ¾ inch from the top edge of the siding. Fasten 3/8 inch from butt ends. For installation over metal wall studs, a minimum of ½ inch thick gypsum shall be applied on the interior surface.
- “MDP” = Maximum Allowable Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to **FBC 1609** for determination of design wind loads.
- Maximum Ultimate Wind Speeds shall be as defined in Figures 1609.3(1), 1609.3(2) or 1609.3(3) of the 6<sup>th</sup> Edition (2017) Florida Building Code, depending on the project Risk Category (**FBC 1604.5**) and Exposure Category (**FBC 1609.4.3**), as defined by the Designer of Record and acceptable to the Authority Having Jurisdiction. Maximum Ultimate Wind Speeds noted herein are limited to projects meeting the following:
  - ✓ Maximum height of 30 ft
  - ✓ Enclosed building (Internal Pressure Coefficient, GC<sub>pi</sub> = ± 0.18);
  - ✓ Site conditions and location of the structure do not meet all conditions specified in Section 26.8.1 of **ASCE 7-10** (K<sub>zt</sub> = 1.0).

Analysis for buildings falling outside these constraints shall be on a project-by-project basis by a Florida Registered PE.

**TABLE 1: ALLURA™ PANEL SIDING  
FACE FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)	Spacing		Exposure B	Exposure C	Exposure D
1.	48	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Face fastened to framing	ITW Buildex Rock-On® Type S 2PWH HI-LO® CLC, 9-15 x 2¼" (Part No. 2155500)	6-inch o.c. along panel edges; 6-inch o.c. along interior framing	-38	162	137	126
2.	48	2x4 Spruce-Pine-Fur with nominal 5/8" plywood sheathing	16	Face fastened to framing	6d common nails, min. 2" long x 0.113" shank dia. x 0.265" head dia.	6-inch o.c. along panel edges; 6-inch o.c. along interior framing	-38	162	137	126

**TABLE 2A: ALLURA™ LAP SIDING  
BLIND FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
3.	8¾	Min. 20 ga. steel stud	16	Blind fastened to framing	Min. #8 x 1 5/8 inch long self-tapping screws with a 0.375 inch dia. wafer head	-22	123	N/A	N/A
4.	8¾	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	-23	126	107	N/A
5.	7¾	2x4 Spruce-Pine-Fur with nominal 1/2" plywood sheathing	16	Blind fastened to framing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	-27	137	116	106
6.	6¾	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	-36	158	133	123
7.	5¾	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	-38	162	137	126

**TABLE 2B: ALLURA™ LAP SIDING  
FACE FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
8.	9¾	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Face fastened to framing	ITW Buildex Rock-On® Type S-12 2PWH CLC, 8 x 2¼" (Part No. 2139500)	-46	178	151	139
9.	9¾	2x4 Spruce-Pine-Fur with nominal 5/8" plywood sheathing	16	Face fastened to framing	8d common nails, min. 2½" long x 0.134" shank dia. x 0.281" head dia.	-58	200	169	156

**TABLE 2C: ALLURA™ LAP SIDING  
BLIND FASTENED TO SHEATHING**

System No.	Max. Width (in)	Substrate (Note 1)			Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing	Max. Spacing (in)	Sheathing	Method	Fasteners (Note 2)	Spacing (inch o.c.)		Exposure B	Exposure C	Exposure D
10.	9%	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-33	151	128	117
11.	8%	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	12	-28	139	118	108
12.	8%	2x4 Spruce-Pine-Fur	16	Min. 7/16-inch OSB	Blind fastened to studs <u>and</u> to sheathing between studs	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-38	162	137	126
13.	8%	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-41	169	142	131
14.	8%	2x4 Spruce-Pine-Fur	16	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	6	-56	197	166	153
15.	7%	2x4 Spruce-Pine-Fur	16	Min. 15/32-inch plywood	Blind fastened to studs <u>and</u> to sheathing between studs	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-57	199	168	154

**TABLE 2D: ALLURA™ LAP SIDING  
BLIND FASTENED TO FRAMING & FURRING STRIPS**

System No.	Max. Width (in)	Substrate (Note 1)				Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing	Max. Space (in)	Sheathing	Furring Strips	Method	Fasteners (Note 2)	Spacing (inch o.c.)		Exposure B	Exposure C	Exposure D
16.	9½	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	1x4-inch PT furring strips, 12-inch o.c.	Blind fastened to furring strips	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	12	-21	121	N/A	N/A
17.	9½	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	1x4-inch PT furring strips, 8-inch o.c.	Blind fastened to furring strips	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-40	166	141	129

**TABLE 2E: ALLURA™ LAP SIDING  
BLIND FASTENED TO VERTICAL BATTENS**

System No.	Max. Width (in)	Substrate (Note 1)					Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Wall	Vertical Battens	Batten Spacing (inch o.c.)	Batten Fasteners	Batten Fastener Spacing (inch o.c.)	Method	Fasteners (Note 2)	Spacing (inch o.c.)		Exposure B	Exposure C	Exposure D
18.	7¼	CMU block	1x4-inch PT Spruce-Pine-Fir (SPF)	16	¾" diameter threaded concrete anchor, min. 1¼" embedment	Max. 12	Blind fastened to battens	Ring shank roofing nails, 1¾" long x 0.120" shank dia. x 0.375" head dia.	16	-40	166	141	129
19.	7¼	CMU block	1x4-inch PT Southern Yellow Pine (SYP)	16	¾" diameter threaded concrete anchor, min. 1¼" embedment	Max. 12	Blind fastened to battens	Ring shank roofing nails, 1¾" long x 0.120" shank dia. x 0.375" head dia.	16	-52	190	160	147



**TABLE 3: ALLURA™ SHAPES SIDING  
BLIND FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
20.	16	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Blind fastened to framing	ITW Buildex Rock-On® Type S-12 2PWH CLC, 8 x 2¼" (Part No. 2139500)	-48	182	154	142
21.	16	2x4 Spruce-Pine-Fur with nominal 5/8" plywood sheathing	16	Blind fastened to framing	8d common nails, min. 2½" long x 0.134" shank dia. x 0.281" head dia.	-48	182	154	142

**APPENDIX 2: ALLOWABLE SHEAR LOADS FOR PANEL SHEAR WALLS**

Table	Type	Application	Fastener Engage
4A	Allura™ Panel Siding	Face Fastened	Wood Framing
4B	Allura™ Panel Siding	Face Fastened	Steel Framing

**The following notes apply to the systems outlined herein:**

1. Shear load data are based on ASTM E72 testing at an ISO 17025 accredited laboratory, and are offered within this Evaluation Report at the request of the applicant.
2. All board edges shall be supported by framing. Panels shall be applied with the long dimension either parallel or perpendicular to studs.
3. The maximum height-to-length ratio for use of this data is 2:1.
4. Allowable shear loads are based on a 3 to 1 margin of safety.
5. For steel framed assemblies in Table 4B, allowable loads are offered for the panel-siding itself and based on the average test load at 1/8-inch net deflection, with the lesser of the two highlighted red.

**TABLE 4A: ALLURA™ PANEL SIDING  
FACE FASTENED TO WOOD FRAMING**

System No.	Max. Width (in)	Substrate		Siding Attach			Ultimate Shear Load (plf)	Allowable Shear Load (plf)
		Framing/Sheathing	Max. Spacing (in)	Fasteners	Spacing (inch o.c.)			
					Panel Edges	Interior Framing		
1.	48	2X4 wood, Hem-Fir	16	6d common nails	6	6	541	180
2.	48	2X4 wood, Hem-Fir	16	6d common nails	4	4	694	231
3.	48	2X4 wood, Hem-Fir	24	6d common nails	6	6	490	163
4.	48	2X4 wood, Hem-Fir	24	6d common nails	4	4	622	207

**TABLE 4B: ALLURA™ PANEL SIDING  
FACE FASTENED TO STEEL FRAMING**

System No.	Max. Width (in)	Substrate		Siding Attach		Panel Performance		Performance at 1/8" Net Deflection		
		Framing/Sheathing	Max. Spacing (in)	Fasteners	Spacing (inch o.c.)		Ultimate Shear Load (plf)	Allowable Shear Load (plf)	Test Load (lbf)	Shear Load (plf)
					Panel Edges	Interior Framing				
5.	48	Min. 20 ga. steel x 3.625 in. x 1.375 in. steel studs	16	#8-18 x 1-5/8" Phillips Wafer Head w/ Nibs self-drilling cement board screws	6	6	729	243	2483	310
6.	48	Min. 20 ga. steel x 3.625 in. x 1.375 in. steel studs	24	#8-18 x 1-5/8" Phillips Wafer Head w/ Nibs self-drilling cement board screws	6	6	591	197	2500	313
7.	48	Min. 20 ga. steel x 3.625 in. x 1.375 in. steel studs	16	ET&F Fastening Systems: Trimfast Pins AST-100	4	8	503	168	1117	140
8.	48	Min. 20 ga. steel x 3.625 in. x 1.375 in. steel studs	24	ET&F Fastening Systems: Trimfast Pins AST-100	4	8	473	158	1067	133