

## Listing

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## Performance Characteristics of Millboard® Composite Siding

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### CSI Designations:

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 46 33 - Plastic Siding

## 1 Innovative Products Evaluated<sup>1</sup>

### 1.1 Millboard Composite Siding Products:

#### 1.1.1 Shadow Line<sup>+</sup>

#### 1.1.2 Board & Batten<sup>+</sup>

## 2 Product Description and Materials

2.1 The innovative products evaluated in this report are shown in **Figure 1**, **Figure 2**, and as described in **Table 1**.



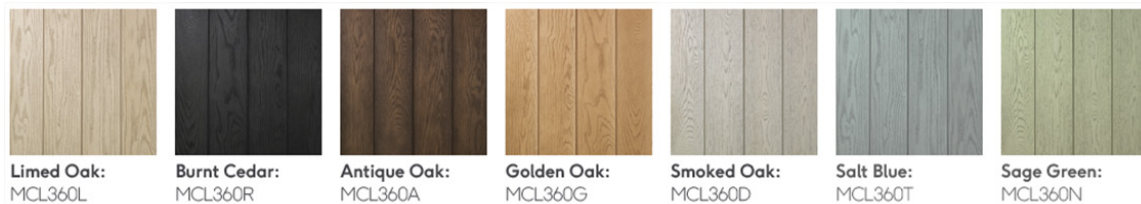
**Figure 1.** Shadow Line<sup>+</sup> Siding



**Figure 2.** Board & Batten<sup>+</sup> Siding

**Table 1. Millboard Composite Siding Products Specifications**

Parameter	Product	
	Shadow Line <sup>+</sup>	Board & Batten <sup>+</sup>
Standard Length	141 <sup>3</sup> / <sub>4</sub> " (3,600 mm)	
Nominal Width	Width: 7 <sup>7</sup> / <sub>8</sub> " (200 mm) Installed Width: 7 <sup>1</sup> / <sub>8</sub> " (181 mm)	Width: 7 <sup>7</sup> / <sub>8</sub> " (200 mm) Installed Width: 7 <sup>1</sup> / <sub>8</sub> " (181 mm)
Nominal Thickness	1 <sup>1</sup> / <sub>16</sub> " (18 mm)	1" (9 <sup>9</sup> / <sub>16</sub> " Board + 7 <sup>7</sup> / <sub>16</sub> " Batten); 26 mm (14 mm Board + 12 mm Batten)
Available Colors <sup>1</sup>	Limed Oak, Burnt Cedar, Antique Oak, Golden Oak, Smoked Oak, Salt Blue, Sage Green	Limed Oak, Burnt Cedar, Antique Oak, Golden Oak, Smoked Oak, Jarrah
1. See <b>Figure 3</b> and <b>Figure 4</b> for additional details.		



**Figure 3. Available Colors for Shadow Line<sup>+</sup> Profile**



**Figure 4. Available Colors for Board & Batten<sup>+</sup> Profile**

- 2.2 Millboard Composite Siding Products are wood-free siding product comprised of a proprietary fire-retardant rubberized coating, melded to a fiberglass reinforced resin-mineral composite core with a UV stabilized 2K coating.
- 2.3 As needed, review material properties for design in **Section 6**.

### 3 Definitions

- 3.1 New Materials<sup>2</sup> are defined as building materials, equipment, appliances, systems or methods of construction not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.<sup>3</sup> The design strengths and permissible stresses shall be established by tests<sup>4</sup> and/or engineering analysis.<sup>5</sup>
- 3.2 Duly Authenticated Reports<sup>6</sup> and Research Reports<sup>7</sup> are test reports and related engineering evaluations, which are written by an approved agency<sup>8</sup> and/or an approved source.<sup>9</sup>
- 3.2.1 These reports contain intellectual property and/or trade secrets, which are protected by the Defend Trade Secrets Act (DTSA).<sup>10</sup>
- 3.3 An approved agency is "approved" when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is listed in the ANAB directory.



- 3.4 An approved source is “approved” when a professional engineer (i.e., Registered Design Professional) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.<sup>11</sup>
- 3.5 Testing and/or inspections conducted for this Duly Authenticated Report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body and/or a licensed Registered Design Professional (RDP).
- 3.5.1 The Center for Building Innovation (CBI) is ANAB<sup>12</sup> ISO/IEC 17025 and ISO/IEC 17020 accredited.
- 3.6 The regulatory authority shall enforce<sup>13</sup> the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing<sup>14</sup> stating the nonconformance and the path to its cure.
- 3.7 The regulatory authority shall accept Duly Authenticated Reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs or methods of construction.<sup>15</sup>
- 3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory where recognition of certificates, validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope, shall be approved.<sup>16</sup> Therefore, all ANAB ISO/IEC 17065 Duly Authenticated Reports are approval equivalent.<sup>17</sup>
- 3.9 Approval equity is a fundamental commercial and legal principle.<sup>18</sup>

#### 4 Applicable Standards for the Listing; Regulations for the Regulatory Evaluation<sup>19</sup>

##### 4.1 Standards

- 4.1.1 *ASCE 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*
  - 4.1.2 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials*
  - 4.1.3 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*
  - 4.1.4 *BS EN 317: Particleboards and Fibreboards – Determination of Swelling in Thickness after Immersion in Water*
  - 4.1.5 *BS EN 322 Wood-Based Panels – Determination of Moisture Content*
  - 4.1.6 *BS EN 438-2: High-Pressure Decorative Laminates (HPL) – Sheets Based on Thermosetting Resins (Usually call Laminates) – Part 2: Determination of Properties, Section 26 Resistance to Staining*
  - 4.1.7 *BS EN 13245-1: Plastics – Unplasticized Poly(Vinyl Chloride) (PVC-U) Profiles for Building Applications Part 1: Designation of PVC-U Profiles, Annex B Determination of the Impact Resistance*
  - 4.1.8 *EN ISO 7784-2: Paints and Varnishes – Determination of Resistance to Abrasion – Part 2: Method with Abrasive Rubber Wheels and Rotating Test Specimen*
  - 4.1.9 *MOAT 27: General Directive for the Assessment of Roof Waterproofing Systems*
  - 4.1.10 *MOAT 43: UEAtc Directives for Impact Testing Opaque Vertical Building Components*
  - 4.1.11 *SFM 12-7A-1: Materials and Construction Methods for Exterior Wildfire Exposure*
  - 4.1.12 *Technical Bulletin LL-9025: Outdoor Weathering: Basic Exposure Procedures*
- 4.2 Installation of Millboard Composite Siding Products over foam plastic sheathing is outside the scope of this report.
- 4.3 Use of Millboard Composite Siding Products in fire-resistance rated assemblies is outside the scope of this report.



## 5 Listed<sup>20</sup>

- 5.1 Equipment, materials, products or services included in a List, published by a nationally recognized testing laboratory (i.e., CBI), approved agency (i.e., CBI and DrJ), and/or approved source (i.e., DrJ) or other organization concerned with product evaluation (i.e., DrJ) that maintains periodic inspection (i.e., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

## 6 Tabulated Properties Generated from Nationally Recognized Standards

### 6.1 Transverse Wind Load

- 6.1.1 The allowable wind load resistance capacity is presented in **Table 2** and **Table 3**.

**Table 2.** Allowable Positive and Negative Wind Loads per Fastening Configuration – Shadow Line<sup>+</sup>

Product	Substrate	Fastener	Vertical Fastener Spacing, sp <sub>v</sub> <sup>1</sup> (in o.c.)	Horizontal Fastener Spacing, sp <sub>h</sub> <sup>2</sup> (in o.c.)	Allowable Capacity <sup>3</sup> (lb/fastener)	Allowable Wind Pressure (psf)
Shadow Line+	7/16" OSB	#8 x 2" Flat Head Wood Screw	7 1/8	16	65	80
				24		55
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	25	30
				24		20
	2x4 SPF Sawn Lumber	#8 x 2" Flat Head Wood Screw	7 1/8	16	100	125
				24		85
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	40	50
				24		35
	20-gauge CFS	#8 x 1 1/2" Flat Head Sheet Metal Screw	7 1/8	16	70	90
				24		60
SI: 1 in = 25.4 mm, 1 lb = 4.448 N, 1 psf = 47.88 Pa						
1. One fastener installed through the tongue of the product into the substrate.						
2. Horizontal spacing is based on typical stud spacing.						
3. Allowable capacity is based on the lower of withdrawal strength or head pull-through strength of the fasteners used for installation.						

**Table 3.** Allowable Positive and Negative Wind Loads per Fastening Configuration – Board & Batten<sup>+</sup>

Product	Substrate	Fastener	Vertical Fastener Spacing <sup>1</sup> (in o.c.)	Horizontal Fastener Spacing, s <sub>ph</sub> <sup>2</sup> (in o.c.)	Allowable Capacity <sup>3</sup> (lb/fastener)	Allowable Wind Pressure (psf)
Board & Batten <sup>+</sup>	7/16" OSB	#8 x 2" Flat Head Wood Screw	7 1/8	16	65	80
				24		55
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	25	30
				24		20
	2x4 SPF Sawn Lumber	#8 x 2" Flat Head Wood Screw	7 1/8	16	70	90
				24		60
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	25	50
				24		35
	20-gauge CFS	#8 x 1 1/2" Flat Head Sheet Metal Screw	7 1/8	16	65	95
				24		65

SI: 1 in = 25.4 mm, 1 lb = 4.448 N, 1 psf = 47.88 Pa

- One fastener installed through the tongue of the product into the substrate at each stud location.
- Horizontal spacing is based on typical stud spacing.
- Allowable capacity is based on the lower of withdrawal strength or head-pull-through strength of the fasteners used for installation.

## 6.2 Wind Speed

6.2.1 Basic and allowable wind speeds are shown in **Table 4** and **Table 5**.

**Table 4.** Maximum Basic Wind Speeds – Shadow Line<sup>+</sup>

Product	Substrate	Fastener	Vertical Fastener Spacing, (in o.c.)	Horizontal Fastener Spacing, (in o.c.)	Maximum Wind Speed, V <sub>ult</sub> (mph)			Allowable Wind Speed, V <sub>asd</sub> (mph)		
					B	C	D	B	C	D
Shadow Line <sup>+</sup>	7/16" OSB	#8 x 2" Flat Head Wood Screw	7 1/8	16	200	200	185	155	155	145
				24	195	165	150	150	130	115
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	145	120	110	110	95	85
				24	120	100	90	95	75	70
	2x4 SPF Sawn Lumber	#8 x 2" Flat Head Wood Screw	7 1/8	16	200	200	200	155	155	155
				24	200	200	190	155	155	145
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	185	155	145	145	120	110
				24	155	130	120	120	100	95
	20-gauge CFS	#8 x 1 1/2" Flat Head Sheet Metal Screw	7 1/8	16	200	200	195	155	155	150
				24	200	170	160	155	130	125

SI: 1 in = 25.4 mm, 1 lbf = 4.448 N, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s

- Based on:
  - A building height of 30-feet, GC<sub>p</sub> = -1.4 for Zone 5 and an Effective Wind Area of 10 ft<sup>2</sup>, Topographic Factor: K<sub>z</sub> = 1.0, Ground Elevation Factor: K<sub>e</sub> = 1.0, Internal Pressure Coefficient, GC<sub>pi</sub> = +/-0.18 for an enclosed building, K<sub>d</sub> = 0.85 for 'Component and Siding'
  - V<sub>ult</sub> is limited to 200 mph.
- $V_{asd} = V_{ult} \sqrt{0.6}$ . V<sub>asd</sub> is limited to 155 mph (200√0.6).

**Table 5. Maximum Basic Wind Speeds – Board & Batten<sup>+1</sup>**

Product	Substrate	Fastener	Vertical Fastener Spacing, (in o.c.)	Horizontal Fastener Spacing, (in o.c.)	Maximum Wind Speed, $V_{ult}$ (mph)			Allowable Wind Speed, $V_{asd}$ (mph)		
					B	C	D	B	C	D
Board & Batten+	7/16" OSB	#8 x 2" Flat Head Wood Screw	7 1/8	16	200	200	185	155	155	145
				24	195	165	150	150	130	115
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	145	120	110	110	95	85
				24	120	100	90	95	75	70
	2x4 SPF Sawn Lumber	#8 x 2" Flat Head Wood Screw	7 1/8	16	200	200	195	155	155	150
				24	200	170	160	155	130	125
		0.092" x 2" Galvanized Ring Shank Nail	7 1/8	16	185	155	145	145	120	110
				24	155	130	120	120	100	95
	20-gauge CFS	#8 x 1 1/2" Flat Head Sheet Metal Screw	7 1/8	16	200	200	200	155	155	155
				24	200	180	165	155	140	130
SI: 1 in = 25.4 mm, 1 lbf = 4.448 N, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s										
1. Based on:										
a. A building height of 30-feet, $GC_p = -1.4$ for Zone 5 and an Effective Wind Area of 10 ft <sup>2</sup> , Topographic Factor: $K_{zt}=1.0$ , Ground Elevation Factor: $K_e=1.0$ , Internal Pressure Coefficient, $GC_{pi}=+/-0.18$ for an enclosed building, $K_d = 0.85$ for 'Component and Siding'										
b. $V_{ult}$ is limited to 200 mph.										
2. $V_{asd} = V_{ult}\sqrt{0.6}$ . $V_{asd}$ is limited to 155 mph ( $200\sqrt{0.6}$ ).										

### 6.3 Surface Burning Characteristics

6.3.1 Flame spread testing was conducted in accordance with ASTM E84 and test results are shown in **Table 6**.

6.3.1.1 With a Flame Spread Index of < 25, Millboard Composite Siding Products meet the IBC and IRC flame spread index requirement of <200.

**Table 6. Surface Burning Characteristics**

Product	Flame Spread Index	Flame Spread Classification
Shadow Line <sup>+</sup>	< 25	Class A
Board & Batten <sup>+</sup>	< 25	Class A



#### 6.4 Exterior Wildfire Exposure

- 6.4.1 Exterior wildfire exposure testing was completed in accordance with SFM 12-7A-1 for various assemblies as found in **Table 7**.

**Table 7.** Assembly Testing for Exposure to Exterior Wildfires

Assembly Designation	Exterior Wall Covering Assembly Components (Listed Exterior to Interior)	Test Result
Millboard Composite Siding Products	Shadow Line+ Siding	Pass
	Hydrowrap Hydrogap Drainable Housewrap	
	5/8" Type X Gypsum Wallboard	
	7/16" Oriented Strand Board (OSB)	
	2x4 Studs	
	Shadow Line+ Siding	Pass
	Slicker Classic Rainscreen	
	Flatwrap Housewrap	
	5/8" Type X Gypsum Wallboard	
	7/16" OSB	
	2x4 Studs	
	Shadow Line+ Siding	Pass
	Flatwrap Housewrap	
	5/8" Type X Gypsum Wallboard	
	7/16" OSB	
	2x4 Studs	
	Board & Batten+	Pass
	Hydrowrap Hydrogap Drainable Housewrap	
	5/8" Type X Gypsum Wallboard	
	7/16" OSB	
	2x4 Studs	

#### 6.5 Hard Body Impact

- 6.5.1 Hard body impact was conducted in accordance with MOAT 43 on Millboard Composite Siding Products.
- 6.5.2 At an impact energy of 10 N·m (Joule) using 1 kg steel ball with a diameter of 63.5 mm, no visible damage was observed.



## 6.6 Impact Resistance

- 6.6.1 Impact testing was conducted in accordance with BS EN 13245-1 using a 4.4 lb (2 kg), smooth hemispherical surface of 1" (25 mm) radius and a fall height of 39<sup>3</sup>/<sub>8</sub>" (1,000 mm) at a support span of 4" (100 mm) on aged Millboard Composite Siding Products.
- 6.6.1.1 Accelerated weathering consisted of 140° F (60° C) and UV-A exposure for five (5) hours followed by one-hour spray cycles for a total of 5,000 hours.
- 6.6.1.2 No cracking or damage to the topcoat with any impact.
- 6.6.1.3 Slight indentation to the surface (visible with aid of surface illumination, but difficult to see under normal lighting conditions).

## 6.7 Static Indentation

- 6.7.1 Static indentation was conducted in accordance with MOAT 27 on Millboard Composite Siding Products.
- 6.7.2 Millboard Composite Siding Products were subjected to a 10 kg load via a 10 mm diameter surface for 41 days. The results are shown in **Table 8**.

**Table 8.** Static Indentation

Product	Indentation in, (mm)
Millboard Composite Siding Products	0.004 (0.1)

## 6.8 Abrasion Resistance

- 6.8.1 Millboard Composite Siding Products were evaluated to assess abrasion resistance in accordance with EN ISO 7784-2 utilizing the Taber Abrader test machine fitted with CS-17 wheels, with an applied load of 1 kg and a total duration of 1,000 cycles. The results are shown in **Table 9**.

**Table 9.** Abrasion Resistance

Product	Average Weight Loss After 500 Cycles (mg)	Average Weight Loss After 1000 Cycles (mg)
Millboard Composite Siding Products	152	261
1. Tested in accordance with BS EN 322 (equivalent to ASTM 4442). 2. Tested in accordance with BS EN 317 with an immersion time of 24 hours.		

## 6.9 Protection Against Decay

- 6.9.1 Millboard Composite Siding Products contain no wood or cellulosic materials, and therefore, meet the requirements of the IBC and IRC where protection against biodegradation and decay is required.

## 6.10 Protection Against Termites

- 6.10.1 Millboard Composite Siding Products contain no wood or cellulosic materials, and therefore, meet the requirements of the IBC and IRC where protection against termite attack is required.



## 6.11 Moisture Content and Thickness Swell

- 6.11.1 Millboard Composite Siding Products were evaluated to assess swelling and moisture content after immersion in water in accordance with BS EN 317, and BS EN 322. The results are shown in **Table 10**.

**Table 10.** Moisture Content and Thickness Swell

Product	Average Moisture Content <sup>1</sup> (%)	Average Swelling <sup>2</sup> (%)
Millboard Composite Siding Products	0.6	0.10
1. Tested in accordance with BS EN 322 (equivalent to ASTM 4442). 2. Tested in accordance with BS EN 317 with an immersion time of 24 hours.		

## 6.12 Fade Resistance

- 6.12.1 Millboard Composite Siding Products were evaluated to assess fade resistance by subjecting the product to outdoor exposure for 24 months.

6.12.1.1 Testing was conducted in accordance with Q-Lab Technical Bulletin, LL-9025.

6.12.1.2 Test location was Florida with an exposure angle of 5° south.

6.12.1.3 The results are shown in **Table 11**.

6.12.1.4 *Lightness Factor (L):*

6.12.1.4.1 The measured object's lightness or darkness is quantified by the "L" number on a scale of zero to 100, where 0=black, 50=grey, and 100=white.

6.12.1.5 *Red/Green Factor (a):*

6.12.1.5.1 The object's redness or greenness is quantified by the "a" number. When the "a" value is a positive number, the measured object is a red color. The higher the number, the more red the object is. When an "a" is a negative number, the measured object is a green color. The lower the number, the greener the color. A value of zero for "a" would be exactly intermediate between red and green.

6.12.1.6 *Blue/Yellow Factor (b):*

6.12.1.6.1 The object's yellowness or blueness is quantified by the "b" number. When the "b" is a positive number, the object is yellow. The larger the number, the more yellow the object. When the "b" value is a negative number, a blue colored object is indicated. The lower the number, the more intense the color. A value of zero would be intermediate between yellow and blue.

**Table 11. Fade Resistance**

Millboard Composite Siding Products Color	Original			Final			Difference		
	L	a	b	L'	a'	b'	L	a	b
Limed Oak	67.5	3.0	11.5	68.7	2.8	10.8	1.1	-0.2	-0.7
Smoked Oak	57.0	0.0	6.0	58.5	0.2	6.8	1.6	0.3	0.8
Golden Oak	54.7	7.0	18.8	54.8	6.6	18.4	0.1	-0.4	-0.3
Coppered Oak	38.7	8.5	17.7	43.6	7.5	18.4	5.0	-0.9	0.8
Antique Oak	34.1	5.8	12.7	37.5	4.4	10.4	3.4	-1.5	-2.3
Jarrah	32.3	17.4	18.0	38.0	14.2	17.1	5.7	-3.2	-0.9
Brushed Basalt	38.3	-0.9	-1.5	42.7	-1.2	-0.5	4.4	-0.3	1.0
Burnt Cedar	23.6	0.3	-0.8	29.7	-0.1	0.4	6.2	-0.4	1.1
Driftwood	60.4	0.6	6.8	59.9	0.6	7.1	-0.5	-0.1	0.3
Vintage	35.3	4.3	12.7	39.2	4.5	14.0	4.0	0.2	1.3
Embered	28.5	0.2	-0.2	33.6	0.0	-0.8	5.0	-0.2	-0.6

### 6.13 Resistance to Staining

6.13.1 Millboard Composite Siding Products were evaluated to assess resistance to staining and results are shown in **Table 12**.

**Table 12. Stain Resistance**

Product	Cover	Staining Agent	Rating <sup>2</sup>	Observations <sup>2</sup>
Millboard Composite Siding Products	Uncovered	Acetone	5	No visible change
		Coffee	4	Slight change of color (visible at certain angles)
		Sodium Hydroxide	5	No visible change
		Hydrogen Peroxide	5	No visible change
		Shoe Polish	5	No visible change
	Glass Covered <sup>1</sup>	Acetone	5	No visible change
		Coffee	4	Slight change of color (visible at certain angles)
		Sodium Hydroxide	5	No visible change
		Hydrogen Peroxide	5	No visible change
		Shoe Polish	5	No visible change
3. Placed over staining agent to restrict evaporation during the allotted exposure time.				
4. In accordance with Section 15.6 of BS EN 438-2.				

6.14 Where the application falls outside of the performance evaluation, conditions of use and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science and fire science.



## 7 Certified Performance<sup>21</sup>

- 7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.<sup>22</sup>
- 7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.<sup>23</sup>

## 8 Installation

- 8.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report and the applicable building code.
- 8.2 In the event of a conflict between the manufacturer installation instructions and this report, the more restrictive shall govern.
- 8.3 Millboard Composite Siding Products can be installed horizontally or vertically. **Table 2** through **Table 5** are applicable to either orientation.

## 9 Substantiating Data

- 9.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:
  - 9.1.1 Fastener withdrawal, head-pull-through and lateral resistance in accordance with ASTM D1761
  - 9.1.2 Wind pressure calculations in accordance with general engineering principles by DrJ Engineering, LLC
  - 9.1.3 Wind speed calculations in accordance with Chapter 30 of ASCE 7 by DrJ Engineering, LLC
  - 9.1.4 Surface burning characteristics in accordance with ASTM E84
  - 9.1.5 Fire testing in accordance with SFM 12-7A-1
  - 9.1.6 Impact testing in accordance with MOAT 43, BS EN 13245-1 and MOAT 27
  - 9.1.7 Abrasion resistance in accordance with EN ISO 7784-2
  - 9.1.8 Moisture content in accordance with BS EN 322
  - 9.1.9 Swelling due to water submersion in accordance with BS EN 317
  - 9.1.10 Fade resistance in accordance with [Technical Bulletin LL-9025](#)
  - 9.1.11 Stain resistance in accordance with BS EN 438-2
- 9.2 Information contained herein may include the result of testing and/or data analysis by sources that are [approved agencies](#), [approved sources](#) and/or [RDPs](#). Accuracy of external test data and resulting analysis is relied upon.
- 9.3 Where pertinent, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as [being equivalent](#) to the regulatory provision in terms of quality, [strength](#), effectiveness, [fire resistance](#), durability and safety.



- 9.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this Duly Authenticated Report, may be dependent upon published design properties by others.
- 9.5 Testing and engineering analysis: The strength, rigidity and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.<sup>24</sup>
- 9.6 Where additional condition of use and/or regulatory compliance information is required, please search for Millboard Composite Siding Products on the DrJ Certification website.

## 10 Findings

- 10.1 As outlined in **Section 6**, Millboard Composite Siding Products have performance characteristics that were tested and/or meet applicable regulations and are suitable for use pursuant to its specified purpose.
- 10.2 When used and installed in accordance with this Duly Authenticated Report and the manufacturer installation instructions, Millboard Composite Siding Products shall be approved for the following applications:
- 10.2.1 Used as an exterior wall covering to provide a weather-resistive barrier.
  - 10.2.2 Use as external siding on buildings in accordance with the IBC and IRC.
  - 10.2.3 Millboard Composite Siding Products were evaluated for installation as part of a rainscreen system.
    - 10.2.3.1 Products are installed onto furring strips or nailbase with a 1/4" thick rainscreen mesh in between siding and substrate.
    - 10.2.3.2 Fasteners specified in this report are capable of sustaining the dead load of Millboard Composite Siding Products.
    - 10.2.3.3 Furring strips/nailbase in conjunction with a rainscreen mesh provides an air pocket to facilitate drainage behind Millboard Composite Siding Products. Limitations are listed in **Section 11**.
- 10.3 Unless exempt by state statute, when Millboard Composite Siding Products are to be used as a structural and/or building envelope component in the design of a specific building, the design shall be performed by an RDP.
- 10.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Millboard® Company Ltd.
- 10.5 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10<sup>25</sup> are similar) in pertinent part states:
- 104.11 Alternative materials, design and methods of construction and equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved.
- 10.6 **Approved:**<sup>26</sup> Building regulations require that the building official shall accept Duly Authenticated Reports.<sup>27</sup>
- 10.6.1 An approved agency is "approved" when it is ANAB ISO/IEC 17065 accredited.
  - 10.6.2 An approved source is "approved" when an RDP is properly licensed to transact engineering commerce.
  - 10.6.3 Federal law, Title 18 US Code Section 242, requires that where the alternative product, material, service, design, assembly and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.



- 10.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB-Accredited Product Certification Body – Accreditation #1131.
- 10.8 Through the IAF Multilateral Agreements (MLA), this Duly Authenticated Report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 Duly Authenticated Reports are equivalent.<sup>28</sup>

## 11 Conditions of Use

- 11.1 Material properties shall not fall outside the boundaries defined in **Section 6**.
- 11.2 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.
- 11.3 Millboard Composite Siding Products shall be installed over a structural wall assembly capable of withstanding the imposed positive and negative design loads.
- 11.3.1 Exterior walls shall be braced or sheathed with approved materials to resist lateral loads.
- 11.3.2 The exterior sheathing substrate shall be fastened to wall framing members in accordance with the applicable building codes.
- 11.3.2.1 An approved Water-Resistive Barrier (WRB) shall be secured on top of the exterior sheathing where required by the applicable building codes.
- 11.3.2.2 Flashing in accordance with the applicable code shall be installed at all openings, penetrations, abutting components, and at terminations of siding and soffit, to ensure weather-tightness of the assembly.
- 11.3.3 Building code provisions for the fasteners used to secure Millboard Composite Siding Products to furring or nailbase shall be followed.
- 11.3.3.1 Connection between furring or nailbase to structural wall assembly is not in the scope of this report.
- 11.4 As listed herein, Millboard Composite Siding Products shall not be used:
- 11.4.1 As the primary wall bracing system
- 11.4.2 On the interior face of walls
- 11.4.3 As part of a fire-rated assembly
- 11.4.4 In Types I through IV construction
- 11.4.5 Where design wind pressure exceeds the allowable wind loads as permitted in **Table 2** through **Table 5**
- 11.4.6 Without the installation of a WRB between the sheathing and the siding products.
- 11.5 When required by adopted legislation and enforced by the building official, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed:
- 11.5.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.
- 11.5.2 This report and the installation instructions shall be submitted at the time of permit application.
- 11.5.3 These innovative products have an internal quality control program and a third-party quality assurance program.
- 11.5.4 At a minimum, these innovative products shall be installed per **Section 8** of this report.
- 11.5.5 The review of this report by the AHJ shall comply with IBC Section 104 and IBC Section 105.4.



- 11.5.6 These innovative products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.4, IBC Section 110.4, IBC Section 1703, IRC Section R104.4 and IRC Section R109.2.
- 11.5.7 The application of these innovative products in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2 and any other regulatory requirements that may apply.
- 11.6 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new material or assemblies as provided for in Section 104.11", all of IBC Section 104 and IBC Section 105.4.*
- 11.7 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).
- 11.8 The actual design, suitability and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

## 12 Identification

- 12.1 The innovative products listed in **Section 1.1** are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number and other information to confirm code compliance.
- 12.2 Additional technical information can be found at [www.millboard.com](http://www.millboard.com).

## 13 Review Schedule

- 13.1 This report is subject to periodic review and revision. For the latest version, visit [www.drjcertification.org](http://www.drjcertification.org).
- 13.2 For information on the status of this report, please contact [DrJ Certification](#).

## 14 Approved for Use Pursuant to U.S. and International Legislation Defined in Appendix A

- 14.1 Millboard Composite Siding Products are included in this report published by an approved agency that is concerned with evaluation of products or services, maintains periodic inspection of the production of listed materials or periodic evaluation of services. This report states either that the material, product, or service meets recognized standards or has been tested and found suitable for a specified purpose. This report meets the legislative intent and definition of being acceptable to the AHJ.



## Appendix A

### 1 Legislation that Authorizes AHJ Approval

- 1.1 **Fair Competition:** State legislatures have adopted Federal regulations for the examination and approval of building code referenced and alternative products, materials, designs, services, assemblies and/or methods of construction that:
  - 1.1.1 Advance innovation,
  - 1.1.2 Promote competition so all businesses have the opportunity to compete on price and quality in an open market on a level playing field unhampered by anticompetitive constraints, and
  - 1.1.3 Benefit consumers through lower prices, better quality and greater choice.
- 1.2 **Adopted Legislation:** The following local, state and federal regulations affirmatively authorize these innovative products to be approved by AHJs, delegates of building departments and/or delegates of an agency of the federal government:
  - 1.2.1 Interstate commerce is governed by the Federal Department of Justice to encourage the use of innovative products, materials, designs, services, assemblies and/or methods of construction. The goal is to “*protect economic freedom and opportunity by promoting free and fair competition in the marketplace.*”
  - 1.2.2 Title 18 US Code Section 242 affirms and regulates the right of individuals and businesses to freely and fairly have new products, materials, designs, services, assemblies and/or methods of construction approved for use in commerce. Disapproval of alternatives shall be based upon non-conformance with respect to specific provisions of adopted legislation and shall be provided in writing stating the reasons why the alternative was not approved, with reference to the specific legislation violated.
  - 1.2.3 The federal government and each state have a public records act. In addition, each state also has legislation that mimics the federal Defend Trade Secrets Act 2016 (DTSA),<sup>29</sup> where providing test reports, engineering analysis and/or other related IP/TS is subject to prison of not more than ten years<sup>30</sup> and/or a \$5,000,000 fine or 3 times the value of<sup>31</sup> the Intellectual Property (IP) and Trade Secrets (TS).
    - 1.2.3.1 Compliance with public records and trade secret legislation requires approval through the use of Listings, certified reports, Technical Evaluation Reports, Duly Authenticated Reports and/or research reports prepared by approved agencies and/or approved sources.
  - 1.2.4 For new materials<sup>32</sup> that are not specifically provided for in any regulation, the design strengths and permissible stresses shall be established by tests, where suitable load tests simulate the actual loads and conditions of application that occur.
  - 1.2.5 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design using accepted engineering practice.<sup>33</sup>
  - 1.2.6 The commerce of approved sources (i.e., registered PEs) is regulated by professional engineering legislation. Professional engineering commerce shall always be approved by AHJs, except where there is evidence provided in writing, that specific legislation have been violated by an individual registered PE.
  - 1.2.7 The AHJ shall accept Duly Authenticated Reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in IBC Section 104.11.<sup>34</sup>



- 1.3 **Approved<sup>35</sup> by Los Angeles:** The Los Angeles Municipal Code (LAMC) states in pertinent part that the provisions of LAMC are not intended to prevent the use of any material, device, or method of construction not specifically prescribed by LAMC. The Department shall use Part III, Recognized Standards in addition to Part II, Uniform Building Code Standards of Division 35, Article 1, Chapter IX of the LAMC in evaluation of products for approval where such standard exists for the product or the material and may use other approved standards that apply. Whenever tests or certificates of any material or fabricated assembly are required by Chapter IX of the LAMC, such tests or certification shall be made by a testing agency approved by the Superintendent of Building to conduct such tests or provide such certifications. The testing agency shall publish the scope and limitation(s) of the listed material or fabricated assembly.<sup>36</sup> The Superintendent of Building Approved Testing Agency Roster is provided by the Los Angeles Department of Building and Safety (LADBS). The Center for Building Innovation (CBI) Certificate of Approval License is TA24945. Tests and certifications found in a DrJ Listing are LAMC approved. In addition, the Superintendent of Building shall accept Duly Authenticated Reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in the California Building Code (CBC) Section 1707.1.<sup>37</sup>
- 1.4 **Approved by Chicago:** The Municipal Code of Chicago (MCC) states in pertinent part that an Approved Agency is a Nationally Recognized Testing Laboratory (NRTL) acting within its recognized scope and/or a certification body accredited by the American National Standards Institute (ANSI) acting within its accredited scope. Construction materials and test procedures shall conform to the applicable standards listed in the MCC. Sufficient technical data shall be submitted to the building official to substantiate the proposed use of any product, material, service, design, assembly and/or method of construction not specifically provided for in the MCC. This technical data shall consist of research reports from approved sources (i.e., MCC defined Approved Agencies).
- 1.5 **Approved by New York City:** The 2022 NYC Building Code (NYCBC) states in part that an approved agency shall be deemed<sup>38</sup> an approved testing agency via ISO/IEC 17025 accreditation, an approved inspection agency via ISO/IEC 17020 accreditation and an approved product evaluation agency via ISO/IEC 17065 accreditation. Accrediting agencies, other than federal agencies, must be members of an internationally recognized cooperation of laboratory and inspection accreditation bodies subject to a mutual recognition agreement<sup>39</sup> (i.e., ANAB, International Accreditation Forum (IAF), etc.).
- 1.6 **Approved by Florida:** Statewide approval of products, methods, or systems of construction shall be approved, without further evaluation by:
- 1.6.1 A certification mark or listing of an approved certification agency,
  - 1.6.2 A test report from an approved testing laboratory,
  - 1.6.3 A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity, or
  - 1.6.4 A product evaluation report based upon testing, comparative or rational analysis, or a combination thereof, developed, signed and sealed by a professional engineer or architect, licensed in Florida.
- 1.7 For local product approval, products or systems of construction shall demonstrate compliance with the structural wind load requirements of the Florida Building Code (FBC) through one of the following methods:
- 1.7.1 A certification mark, listing or label from a commission-approved certification agency indicating that the product complies with the code,
  - 1.7.2 A test report from a commission-approved testing laboratory indicating that the product tested complies with the code,
  - 1.7.3 A product-evaluation report based upon testing, comparative or rational analysis, or a combination thereof, from a commission-approved product evaluation entity which indicates that the product evaluated complies with the code,



- 1.7.4 A product-evaluation report or certification based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a Florida professional engineer or Florida registered architect, which indicates that the product complies with the code, or
- 1.7.5 A statewide product approval issued by the Florida Building Commission.
- 1.8 The [Florida Department of Business and Professional Regulation](#) (DBPR) website provides a listing of companies certified as a [Product Evaluation Agency](#) (i.e., EVLMiami 13692), a [Product Certification Agency](#) (i.e., CER10642) and as a [Florida Registered Engineer](#) (i.e., ANE13741).
- 1.9 **Approved by Miami-Dade County (i.e., Notice of Acceptance [NOA]):** A Florida statewide approval is an NOA. An NOA is a Florida local product approval. By Florida law, Miami-Dade County shall accept the statewide and local Florida Product Approval as provided for in Florida legislation [553.842](#) and [553.8425](#).
- 1.10 **Approved by New Jersey:** Pursuant to the 2018 Building Code of New Jersey in [IBC Section 1707.1 General](#),<sup>40</sup> it states: *"In the absence of approved rules or other approved standards, the building official shall accept duly authenticated reports from [approved agencies](#) in respect to the quality and manner of use of new materials or assemblies as provided for in the administrative provisions of the Uniform Construction Code (N.J.A.C. 5:23)"*.<sup>41</sup> Furthermore N.J.A.C 5:23-3.7 states: *"Municipal approvals of alternative materials, equipment, or methods of construction."*
- 1.10.1 **Approvals:** Alternative materials, equipment, or methods of construction shall be approved by the appropriate subcode official provided the proposed design is satisfactory and that the materials, equipment, or methods of construction are suitable for the intended use and are at least the equivalent in quality, strength, effectiveness, fire resistance, durability and safety of those conforming with the requirements of the regulations.
- 1.10.1.1 A field evaluation label and report or letter issued by a nationally recognized testing laboratory verifying that the specific material, equipment, or method of construction meets the identified standards or has been tested and found to be suitable for the intended use, shall be accepted by the appropriate subcode official as meeting the requirements of the above.
- 1.10.1.2 Reports of engineering findings issued by nationally recognized evaluation service programs such as but not limited to, the Building Officials and Code Administrators (BOCA), the International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), the International Code Council (ICC) and the National Evaluation Service, Inc., shall be accepted by the appropriate subcode official as meeting the requirements of the above.
- 1.10.2 The [New Jersey Department of Community Affairs](#) has confirmed that technical evaluation reports, from any accredited entity listed by [ANAB](#), meets the requirements of item the previous paragraph, given that the listed entities are no longer in existence and/or do not provide *"reports of engineering findings"*.
- 1.11 **Approved by the Code of Federal Regulations Manufactured Home Construction and Safety Standards:** Pursuant to Title 24, Subtitle B, Chapter XX, [Part 3282.14](#)<sup>42</sup> and [Part 3280](#),<sup>43</sup> the Department encourages innovation and the use of new technology in manufactured homes. The design and construction of a manufactured home shall conform to the provisions of Part 3282 and Part 3280 where key approval provisions in mandatory language follow:
- 1.11.1 *"All construction methods shall be in conformance with accepted engineering practices."*
- 1.11.2 *"The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur."*
- 1.11.3 *"The design stresses of all materials shall conform to accepted engineering practice."*



- 1.12 Approval by US, Local and State Jurisdictions in General:** In all other local and state jurisdictions, the adopted building code legislation states in pertinent part that:
- 1.12.1 For new materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests.<sup>44</sup>
  - 1.12.2 For innovative alternatives and/or methods of construction, the building official shall accept duly authenticated reports from approved agencies with respect to the quality and manner of use of new materials or assemblies.<sup>45</sup>
    - 1.12.2.1 An approved agency is “approved” when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is in the ANAB directory.
    - 1.12.2.2 An approved source is “approved” when an RDP is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.<sup>46</sup>
  - 1.12.3 The design strengths and permissible stresses of any structural material...shall conform to the specifications and methods of design of accepted engineering practice performed by an approved source.<sup>47</sup>
- 1.13 Approval by International Jurisdictions:** The USMCA and GATT agreements provide for approval of innovative materials, designs, services and/or methods of construction through the Agreement on Technical Barriers to Trade and the IAF Multilateral Recognition Arrangement (MLA), where these agreements:
- 1.13.1 State that conformity assessment procedures (i.e., ISO/IEC 17020, 17025, 17065, etc.) are prepared, adopted and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation.
  - 1.13.2 **Approved:** The purpose of the MLA is to ensure mutual recognition of accredited certification and validation/verification statements between signatories to the MLA and subsequently, acceptance of accredited certification and validation/verification statements in many markets based on one accreditation for the timely approval of innovative materials, designs, services and/or methods of construction.
  - 1.13.3 ANAB is an IAF-MLA signatory where recognition of certificates, validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope, shall be approved.<sup>48</sup>
  - 1.13.4 Therefore, all ANAB ISO/IEC 17065 Duly Authenticated Reports are approval equivalent.<sup>49</sup>
- 1.14 Approval equity is a fundamental commercial and legal principle.<sup>50</sup>



## Notes

For more information, visit [www.drjcertification.org](http://www.drjcertification.org) or call us at 608-310-6748.

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1702>

Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review <https://www.justice.gov/atr/mission-and> <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests%20as

The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice.

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:~:text=shall%20conform%20to%20the%20specifications%20and%20methods%20of%20design%20of%20accepted%20engineering%20practice

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:~:text=the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2>

[https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved\\_agency](https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_agency)

[https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved\\_source](https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_source)

<https://www.law.cornell.edu/uscode/text/18/1832> (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of \$5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: [Intellectual Property and Trade Secrets](https://www.intellectualpropertyandtradesecrets.com/).

<https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional> AND <https://apassociation.org/list-of-engineering-boards-in-each-state-archive/>

<https://www.cbiteest.com/accreditation/>

<https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104>:~:text=to%20enforce%20the%20provisions%20of%20this%20code

<https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>:~:text=Where%20the%20alternative%20material%2C%20design%20or%20method%20of%20construction%20is%20not%20approved%2C%20the%20building%20official%20shall%20respond%20in%20writing%2C%20stating%20the%20reasons%20why%20the%20alternative%20was%20not%20approved AND

<https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#105.3.1>:~:text=If%20the%20application%20or%20the%20construction%20documents%20do%20not%20conform%20to%20the%20requirements%20of%20pertinent%20laws%2C%20the%20building%20official%20shall%20reject%20such%20application%20in%20writing%2C%20stating%20the%20reasons%20therefore

<https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:~:text=the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.11

<https://iaf.nu/en/about-iaf-mila/#>:~:text=it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20an%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

<https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>

Unless otherwise noted, all references in this Listing are from the 2021 version of the codes and the standards referenced therein. This material, product, design, service and/or method of construction also complies with the 2000-2021 versions of the referenced codes and the standards referenced therein.

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2> (Listed%20or%20certified); <https://up.codes/viewer/colorado/ibc-2021/chapter/2/definitions#labeled> AND <https://up.codes/viewer/colorado/ibc-2021/chapter/2/definitions#labeled>

<https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1703.4>

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#>:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#>:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition.

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#>

Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>

Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.

<http://www.drjengineering.org/AppendixC> AND <https://www.drjcertification.org/cornell-2016-protection-trade-secrets>

<https://www.law.cornell.edu/uscode/text/18/1832#>:~:text=imprisoned%20not%20more%20than%2010%20years

<https://www.law.cornell.edu/uscode/text/18/1832#>:~:text=Any%20organization%20that%20has%20thereby%20avoided



<https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706.2>

IBC 2021, Section 1706.1 Conformance to Standards

IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General

See Section 10 for the distilled building code definition of **Approved**

Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES

<https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707.1>

New York City, The Rules of the City of New York, § 101-07 Approved Agencies

New York City, The Rules of the City of New York, § 101-07 Approved Agencies

<https://up.codes/viewer/new-jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1>

<https://www.nj.gov/dca/divisions/codes/codreg/ucc.html>

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14>

<https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280>

IBC 2021, Section 1706 Design Strengths of Materials, 1706.2 New Materials. Adopted law pursuant to IBC model code language 1706.2.

IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General. Adopted law pursuant to IBC model code language 1707.1.

<https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional> AND <https://apassociation.org/list-of-engineering-boards-in-each-state-archive/>

IBC 2021, Section 1706 Design Strengths of Materials, Section 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1.

[https://iaf.nu/en/about-iaf-](https://iaf.nu/en/about-iaf-mla/#:~:text=it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope)

[mla/#:~:text=it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope](https://iaf.nu/en/about-iaf-mla/#:~:text=it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope)

True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

<https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>