DrJ CERTIFICATION

Technical Evaluation Report™

TER 1811-01

GoBoard®

Johns Manville, A Berkshire Hathaway Company

Product:

GoBoard®

Issue Date:

March 14, 2019

Revision Date:

March 9, 2023

Subject to Renewal:

April 1, 2024

Use the QR code to access the most recent version or a sealed copy of this Technical Evaluation Report (TER) at drjcertification.org.

COMPANY INFORMATION:	ADDITIONAL LISTEES:

Johns Manville, A Berkshire Hathaway Company
717 17th St Ste 800
Denver, CO 80202-3332

(303) 978-2000

www.jm.com

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

SECTION: 06 12 00 - Structural Panels

SECTION: 06 12 19 - Shear Wall Panels

SECTION: 06 16 00 - Sheathing

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

SECTION: 07 21 00 - Thermal Insulation

SECTION: 07 25 00 - Water-Resistive Barriers/Weather Barriers

1 Innovative Product Evaluated[1,2]

1.1 GoBoard®

2 Applicable Codes and Standards[3,4]

2.1 *Codes*

2.1.1 *IBC—15, 18, 21: International Building Code®*

2.1.2 *IRC—15, 18, 21: International Residential Code®*

2.1.3 *IECC—15, 18, 21: International Energy Conservation Code®*

2.2 *Standards and Referenced Documents*

2.2.1 *ABTG ANSI/FS 100: Standard Requirements for Wind Pressure Resistance of Foam Plastic Insulating Sheathing Used in Exterior Wall Covering Assemblies*[5]

2.2.2 *AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members*

---

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 24 CFR 3280.2 "Listed or certified" means included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection 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. **Listed**. Equipment, materials, products or services included in a list published by an organization acceptable to the building official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose Listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose. **Labeled.** Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

3 This Listing is a code defined research report, which is also known as a duly authenticated report, provided by an approved agency (see IBC Section 1703.1) and/or an approved source (see IBC Section 1703.4.2). An approved agency is "approved" as an approved agency when it is ANAB accredited (DrJ Engineering, LLC (DrJ) is listed in the ANAB directory). A professional engineer is "approved" as an approved source when that professional engineer is properly licensed to transact engineering commerce. Where sealed by a professional engineer, it is also a duly authenticated report certified by an approved source. (i.e., a registered design professional). DrJ is an ANAB accredited product certification body.

4 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.

5 Formerly SBCA ANSI/FS 100.

2.2.3 *AISI S213: North American Specification for Cold-Formed Steel Framing – Lateral Design*

2.2.4 *ANSI/AWC SDPWS: Special Design Provisions for Wind and Seismic*

2.2.5 *ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*

2.2.6 *ASTM C518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

2.2.7 *ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*

2.2.8 *ASTM D2394: Standard Test Methods for Simulated Service Testing of Wood and Wood-Based Finish Flooring*

2.2.9 *ASTM D7989: Standard Practice for Demonstrating Equivalent In-Plane Lateral Seismic Performance to Wood-Frame Shear Walls Sheathed with Wood Structural Panels*

2.2.10 *ASTM E72: Standard Test Methods of Conducting Strength Tests of Panels for Building Construction*

2.2.11 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

2.2.12 *ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials*

2.2.13 *ASTM E2126: Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings*

2.2.14 *ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*

2.2.15 *ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference*

2.2.16 *ASTM E2178: Standard Test Method for Air Permeance of Building Materials*

3 Performance Evaluation

3.1 Tests, testing, test reports, research reports, duly authenticated reports and related engineering evaluations are defined as intellectual property and/or trade secrets and protected by Defend Trade Secrets Act 2016 (DTSA).[6]

3.2 Testing and/or inspections conducted for this TER were performed at an ISO/IEC 17025 accredited testing laboratory[7] or by an ISO/IEC 17020 accredited inspection body,[8] which are internationally recognized accreditations through International Accreditation Forum (IAF), and/or a licensed registered design professional.

3.3 GoBoard® was evaluated to determine:

3.3.1 Compressive performance in accordance with ASTM D2394.

3.3.2 Structural performance under lateral load conditions for wind loading for use with the IBC performance-based provisions, IBC Section 2306.1 and IBC Section 2306.3, for light-frame wood wall assemblies.

---

[6] https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90. As our professional duty to inform, please be aware that whoever, with intent to convert a trade secret (TS), that is related to a product or service used in or intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending or knowing that the offense will, injure any owner of that trade secret, knowingly without authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys such information; shall be fined under this title or imprisoned not more than 10 years, or both. 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. As the National Society of Professional Engineers states, "Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve." Therefore, to protect intellectual property (IP) and TS, and to achieve 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.

[7] Internationally recognized accreditations are performed by members of the International Accreditation Forum (IAF). Accreditation Body and Regional Accreditation Group Members of IAF are admitted to the IAF MLA only after a stringent evaluation of their operations by a peer evaluation team, which is charged to ensure that the applicant complies fully with both international standards and IAF requirements. Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope.

[8] Ibid.

3.3.3 Structural performance under lateral load conditions for wind and seismic loading for use with the IBC performance-based provisions, IBC Section 2211.1, for light-frame steel wall assemblies.

3.3.4 Table 3 provides seismic design coefficients (SDC) that conform to the requirements in ASCE 7 Section 12.2.1 and Table 12.2-1 for design of wall assemblies in buildings that require seismic design in accordance with ASCE 7 (i.e., all seismic design categories).

3.3.4.1 The basis for equivalency testing is outlined in ASCE 7 Section 12.2.1:

> **12.2.1.1 Alternative Structural Systems.** Use of seismic force-resisting systems not contained in Table 12.2-1 shall be permitted contingent on submittal to and approval by the Authority Having Jurisdiction and independent structural design review of an accompanying set of design criteria and substantiating analytical and test data. The design criteria shall specify any limitations on system use, including Seismic Design Category and height; required procedures for designing the system's components and connections; required detailing; and the values of the response modification coefficient, R; overstrength factor, Ω_o; and deflection amplification factor, C_d.

3.3.4.2 The basis of the seismic evaluation performed as part of this TER is based on ASTM and testing per ASTM E2126 to establish SDCs that conform to the requirements of ASCE 7 Section 12.2.1.1.

3.3.5 Resistance to transverse loads for wall assemblies used in light-frame wood and steel construction in accordance with IBC Section 1609.1.1 and IRC Section R301.2.1.

3.3.6 Resistance to uplift loads for wall assemblies used in light-frame steel construction in accordance with IBC Section 1609 and IRC Section R301.2.1.

3.3.7 Performance of the foam plastic component of GoBoard® in accordance with IBC Section 2603 and IRC Section R316.

3.3.8 Performance for use as insulating sheathing (R-value) in accordance with IRC Section N1102.1, IRC Section N1102.2 and IECC Section R402.

3.3.9 Performance for use as a water-resistive barrier (WRB) in accordance with IBC Section 1403.2[9] and IRC Section R703.2.

3.3.10 Performance for use as a vapor retarder in accordance with and IBC Section 202, IBC Section 1404.3,[10] IRC Section R202 and IRC Section R702.7.

3.3.11 Performance for use as an air barrier material in accordance with IRC Section N1102.4.1.1 and IECC Section C402.5.1.3.[11]

3.3.12 Surface burn characteristics in accordance with IBC Section 2603.3 and IRC Section R316.3.

3.4 Use of GoBoard® in a portal frame with hold-downs (PFH) is outside the scope of this TER.

3.5 Performance of GoBoard® used in light-frame wood construction to resist seismic loading is outside the scope of this TER.

3.6 Any building code and/or accepted engineering evaluations (i.e. research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ Engineering, LLC (DrJ), an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDPs / approved sources. DrJ is qualified[12] to practice product and code compliance services within its scope of accreditation and engineering expertise, respectively.

[9] 2015 IBC Section 1404.2

[10] 2015 IBC Section 1405.3

[11] 2018 IECC Section C402.5.1.2.1

[12] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

3.7 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope, which are also its areas of professional engineering competence.

3.8 Any regulation specific issues not addressed in this section are outside the scope of this TER.

4 Product Description and Materials

4.1 The product evaluated in this TER is shown in Figure 1.

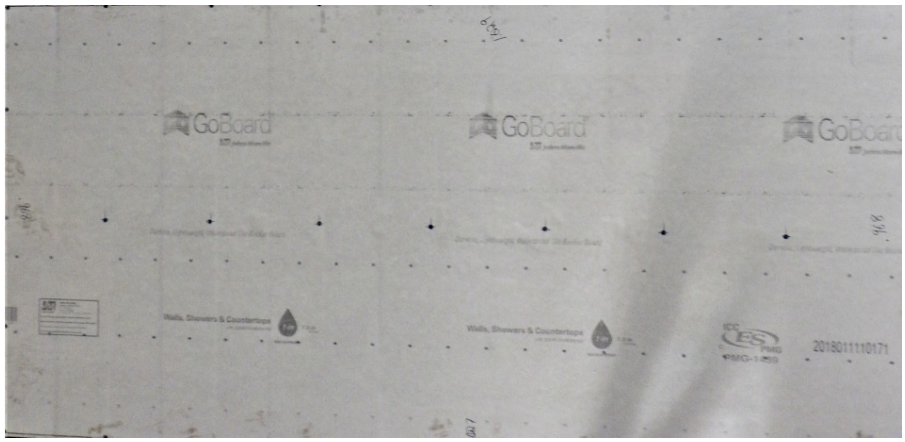

Figure 1. GoBoard® Structural Sheathing

4.2 GoBoard® consists of a high density, closed-cell, rigid polyisocyanurate (polyiso) foam core with proprietary coated fiberglass mats on both faces.

4.3 *Material Availability*

4.3.1 Thickness: ½" (12.7 mm), ⅝" (16.9 mm), and 1" (25.4 mm)

4.3.2 Standard product width: 48" (1219 mm)

4.3.3 Standard length: 96" and 108" (2438 mm and 2743 mm)

4.3.4 Other custom width and lengths can be manufactured.

5 Applications

5.1 GoBoard® is used as wall sheathing in Type V construction in accordance with the IBC and IRC.

5.2 *Structural Applications*

5.2.1 *General Structural Provisions:*

5.2.1.1 Except as otherwise described in this TER, GoBoard® shall be installed in accordance with the applicable building codes listed in Section 2 using the provisions set forth herein for the design and installation of wood structural panels (WSP).

5.2.1.2 GoBoard® is permitted to be designed in accordance with SDPWS for the design of shear walls using the methods set forth therein, including the perforated shear wall methodology, and subject to the SDPWS boundary conditions, except as specifically allowed in this TER.

5.2.1.3 Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall.

5.2.1.3.1 For wind design, anchor bolt spacing shall not exceed 6' o.c.

5.2.1.3.2 For seismic design, anchor bolt spacing shall not exceed 4' o.c.

5.2.1.4 The maximum aspect ratio for GoBoard® ½" and GoBoard® 1" shall be 1:1.

5.2.1.5 The maximum aspect ratio for GoBoard® ⅝" shall be 2:1.

5.2.1.6 The minimum full height panel width shall be 24" (610 mm).

5.2.1.7 When used in light-frame wood construction, all panel edges shall be blocked with a minimum 2" (51 mm) nominal lumber.

5.2.1.8 Fastener type and spacing shall be per the applicable table of this TER and Section 6. Fasteners shall be installed with the head in contact with the face of the board.

5.2.1.9 Installation is permitted for single top plate (advanced framing method) or double top plate applications.

5.2.2 *Compressive Strength:*

5.2.2.1 GoBoard® panels have the compressive strength listed in Table 1.

Table 1. Compressive Strength[1]

Product	Compressive Load at 0.05" Deformation (lbf)	Compressive Stress at 0.05" Deformation (psi)	Deformation at 1,000 lbf (in)
GoBoard® 5/8"	190	240	0.475

SI: 1 in = 25.4 mm, 1 lb = 4.45 N, 1 psi = 0.00689 MPa

1. Tested in accordance with ASTM D2394

5.2.3 *Performance-Based Construction:*

5.2.3.1 GoBoard® panels used in wall assemblies designed as shear walls are permitted to be designed in accordance with the methodology used in SDPWS for WSP using the capacities shown in Table 2 and Table 3.

5.2.3.2 GoBoard® panel shear walls are permitted to resist lateral wind load forces using the allowable shear loads (in pounds per linear foot) set forth in Table 2.

Table 2. Allowable Unit Shear Capacity – Wind

Product	Stud Type	Max Stud Spacing (in)	Joint Condition	Fastener Spacing (edge:field) (in)	Minimum Fastener Type & Size[3]	Gypsum Wallboard (GWB) Thickness (in)	GWB Fastener Spacing[4,5] (edge:field) (in)	Allowable Unit Shear Capacity (plf)
GoBoard® ½"	Wood	16 o.c.	Butted	2:6	16 ga. 1" crown x 1" leg galvanized staple	No GWB	-	240
GoBoard® 5/8"	Wood	16 o.c.	Butted	3:6	16 ga. 15/16" crown x 1¼" leg galvanized staples	½	3:6	435
	Steel[1]	16 o.c.	Butted with 1/8" gap, Sealant[2]	6:12	GoBoard® 1-⅝" Hi-Lo self-drilling screws with 1-¼" GoBoard® washers	No GWB[7]	-	220
						½	8:8	295
GoBoard® 1"	Steel[1]	24 o.c.	Butted with 1/8" gap, Sealant[2]	6:12	GoBoard® 1-⅝" Hi-Lo self-drilling screws with 1-¼" GoBoard® washers. GoBoard® Pro Sealant between studs and GoBoard® 1" (see Note 6)	No GWB[7]	-	175
				12:12	1-½" bugle head self-drilling screws GoBoard® Pro Sealant between studs and GoBoard® 1" (see Note 6)	½	8:8	390
			Butted	12:12	GoBoard® 1-⅝" Hi-Lo self-drilling. GoBoard® Pro Sealant between studs and GoBoard® 1" (see Note 6)	½	8:8	390

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

1. Minimum 20 gauge (33 mil), 3⅝" x 1⅝", 33ksi steel studs.
2. Install GoBoard® panels with a 1/8" gap between boards on all sides and fill gap fully with GoBoard® Pro Sealant. Alternatively, the boards may be butted together and a gap created by routing a 1/8" wide by ⅜" deep groove. A minimum 2" wide strip of GoBoard® Pro sealant shall cover each joint (minimum 1" of GoBoard® Pro sealant on each side of the joint).
3. Fasteners shall be installed with the head in contact with the face of the board. Fastener edge distance shall be a minimum of ⅜" on all sides of the board.
4. For walls with wood studs and gypsum wallboard, the gypsum wallboard shall be attached with minimum #6 x 1¼" Type W screws. Fasteners shall maintain a minimum edge distance of 3/8" and spaced at 8" on center along the edges and in the field.
5. For walls with steel studs and gypsum wallboard, the gypsum wallboard shall be attached with minimum #6 x 1¼" Type S screws. Fasteners shall maintain a minimum edge distance of 3/8" and spaced at 8" on center along the edges and in the field.
6. GoBoard® 1" shall be adhered to the studs with GoBoard® Pro Sealant (minimum ¼" thick bead) along the length of each stud.
7. Where gypsum wallboard is not installed on the interior face of the wall, the wall shall be constructed with mid-height strapping and blocking per IRC Section R603.3.3.

5.2.4 *Seismic Design:*

5.2.4.1 GoBoard® panel shear walls are permitted to resist seismic load forces using the seismic allowable unit shear capacities set forth in Table 3 when seismic design is required in accordance with IBC Section 1613.

5.2.4.1.1 The response modification coefficient, R; system overstrength factor, Ω_0; and deflection amplification factor, C_d, indicated in Table 3 shall be used to determine the base shear, element design forces, and design story drift in accordance with ASCE 7 Chapter 12 and Section 14.5.

Table 3. Allowable Unit Shear Capacity & Design Coefficients – Seismic[1,2]

Seismic Force Resisting System	Stud Type	Joint Condition[4]	Max. Stud Spacing (in)	Gypsum Wallboard[5] (GWB)	Seismic Allowable Unit Shear Capacity[6] (plf)	Apparent Shear Stiffness, G_a (kips/in)	Response Modification Factor,[6] R	System Over-strength Factor,[7] Ω_0	Deflection Amplification Coefficient,[8] C_d	Structural System Limitations and Building Height Limit[9,10] (ft)				
										Seismic Design Category				
										B	C	D	E	F
GoBoard® 5/8"	Steel[3]	Butted with 1/8" gap, Sealant[4]	16	No GWB	175	4.5	6½	3	4	NL	NL	65	65	65
				½	235	13.3	6½	3	4	NL	NL	65	65	65

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

1. GoBoard® attached with a 1⅝" self-drilling GoBoard® Hi-Lo Screws with 1¼" GoBoard® washers. Screw shall penetrate a minimum of three thread lengths beyond the stud. Fasteners are to be installed spaced a maximum of 6" o.c. at the panel edges and 12" o.c. in the field. Fastener edge distance shall be a minimum of 3/8". Fastener head shall be in contact with the panel surface
2. All seismic design parameters follow the equivalency as defined in Section 3 of this TER.
3. Minimum 20 gauge (33 mil), 3⅝" x 1⅝", 33ksi steel studs.
4. Install GoBoard® panels with a ⅛" gap between boards on all sides, and fill gap fully with GoBoard® Pro Sealant. A minimum 2" wide strip of GoBoard® Pro sealant shall cover each joint (minimum 1" of GoBoard® Pro sealant on each side of the joint).
5. Where required, walls installed with minimum ½" gypsum wallboard shall be attached with minimum #6 x 1¼" Type S screws. Fasteners shall maintain a minimum edge distance of 3/8".
6. Response modification coefficient, R, for use throughout ASCE 7. Note: R reduces forces to a strength level, not an allowable stress level.
7. The tabulated value of the overstrength factor, Ω_0, is permitted to be reduced by subtracting one-half (0.5) for structures with flexible diaphragms.
8. Deflection amplification factor, C_d, for use with ASCE 7 Sections 12.8.6, 12.8.7, and 12.9.1.2.
9. Heights are measured from the base of the structure as defined in ASCE 7 Section 11.2.
10. NL = Not Limited

5.2.5 *Transverse Wind Loading:*

5.2.5.1 GoBoard® is permitted to resist transverse wind load forces using the allowable transverse loads (in pounds per square foot) set forth in Table 4.

5.2.5.1.1 Required component and cladding loads to be resisted are found in IBC Section 1609.1.1, IRC Table R301.2.1(1),[13] and IRC Table 301.2.1(2).[14] Allowable component and cladding wind speeds for GoBoard® are set forth in Table 4.

Table 4. Transverse (Out-of-Plane) Wind Load Resistance

Product	Stud Type	Maximum Stud Spacing (in)	Fastener Spacing (edge:field) (in)	Fastener Type[4]	Allowable Design Value (psf)	Allowable Components & Cladding Basic Wind Speed[1,2] (mph)	
						ASCE 7-05 (V_{asd})	ASCE 7-10 and 7-16 (V_{ult})
GoBoard® ⅝"	Wood	16 o.c.	8:8	#9-18 x 1¼" GoBoard® Hi-Lo Wood Screw	130	155	200
			3:6	16ga staple 1" crown x 1¼" leg	100	155	200
	Steel[3]	16 o.c.	6:12	1-⅝" self-drilling GoBoard® Hi-Lo Screws with 1-¼" GoBoard® washers	110	155	200
		24 o.c.	12:12	1-½" Type W Bugle Screws	70	155	200
GoBoard® 1"	Steel[3]	24 o.c.	12:12	1-½" Type W Bugle Screws	105	155	200

SI: 1 in = 25.4 mm, 1 psf = 0.0479 kN/m², 1 mph = 1.61 km/h

1. Design wind load capacity shall be in accordance with IBC Section 1609.1.1.
2. Allowable wind speeds are based on the following: Mean roof height 30', Exposure B, Zone 4, 10 sq. ft. effective wind area. See the applicable building code for any adjustment need for specific building location and configuration.
3. Minimum 20 gauge (33 mil) 3⅝" x 1⅝", 33 ksi steel studs.
4. Fasteners shall be installed with the head in contact with the face of the board. Fastener edge distance shall be a minimum of ⅜" on all sides of the board.

[13] 2018 IRC Table R301.2(2)

[14] 2018 IRC Table R301.2(3)

5.2.6 *Uplift Resistance:*

5.2.6.1 GoBoard® is permitted to resist uplift forces using the allowable uplift loads (in pounds per linear foot) set forth in Table 5.

Table 5. Uplift Performance

Product	Stud Type	Maximum Stud Spacing (in)	Fastener Type & Spacing (edge:field)[4] (in)	Allowable Uplift Capacity[1,2] (plf)
GoBoard® 5/8"	Steel[3]	16 o.c.	1-⅝" self-drilling GoBoard® Hi-Lo Screws with 1-¼" GoBoard® washers spaced 6:12	220

SI: 1 in = 25.4 mm, 1 lb/ft = 0.0146 kN/m

1. The capacities shown are for the purpose of providing information on the hold-down capacity of the sheathing to the bottom plate connection independent of lateral loading. Where combined shear and uplift loading is needed, consult a professional engineer.
2. Tested in accordance with ASTM E72.
3. Minimum 20 gauge (33 mil) 3⅝" x 1⅝" 33ksi steel studs.
4. Fasteners shall be installed with the head in contact with the face of the board. Fastener edge distance shall be a minimum of ⅜" on all sides of the board.

5.3 *Thermal Insulation*

5.3.1 GoBoard® meets the continuous insulated sheathing requirements complying with the provisions of IECC Section C402 and has the thermal resistance properties shown in Table 6.

Table 6. Thermal Resistance Properties

Product[1]	R-Value (F*ft²*hr/Btu)
GoBoard® ½"	2.1
GoBoard® 5/8"	2.4
GoBoard® 1"	5.0

1. Tested in accordance with ASTM C518

5.4 *Water Resistive Barrier*

5.4.1 GoBoard® may be used as a WRB as prescribed in IBC Section 1403.2[15] and IRC Section R703.2 when installed on exterior walls as described in this section.

5.4.2 GoBoard® shall be installed with board joints placed directly over exterior framing spaced a maximum of 24" (610 mm) o.c. The fasteners used to attach the board shall be installed in accordance with Section 6.

5.4.3 All seams and joints shall be sealed with GoBoard® Sealant or taped with an approved construction tape in accordance with Section 6.

5.4.3.1 Approved construction tapes includes 4" wide GoBoard® Seam Tape or Shurtape® XP-3233-12.

5.4.4 A separate WRB may also be provided. If a separate WRB method is used, sealing of the sheathing joints is not required.

5.4.5 Flashing must be installed at all sheathing penetrations and shall comply with the all applicable code sections.

[15] 2015 IBC Section 1404.2

5.5 *Water Vapor Transmission*

5.5.1 GoBoard® has the water resistance properties as shown in Table 7.

Table 7. Water Resistance Properties

Product[1]	Water Vapor Permeance (perm)
GoBoard® ½"	< 0.5
GoBoard® 5/8"	
GoBoard® 1"	
1. Tested in accordance with ASTM E96, desiccant method.	

5.6 *Air Barrier*

5.6.1 GoBoard® meets the requirements of IECC Section C402 for use as an air barrier material when installed in accordance with the manufacturer installation instructions and this TER with all seams, including the top and bottom edges, taped.

5.6.2 All penetrations shall be flashed and sealed in accordance with the flashing manufacturer installation instructions.

5.7 *Surface Burn Characteristics*

5.7.1 GoBoard® panels have the surface burn characteristics shown in Table 8.

Table 8. Surface Burn Characteristics

Product[1]	Flame Spread	Smoke Developed
GoBoard® ½"	< 75	< 450
GoBoard® 5/8"	< 25	< 450
GoBoard® 1"	< 75	< 450
1. Tested in accordance with ASTM E84		

5.8 *Minimum Fastening Requirements for Non-Structural Applications*

5.8.1 Where other means of wall bracing are provided, or are not required, and an approved exterior wall covering capable of separately resisting loads perpendicular to the face of the walls is installed over the sheathing, GoBoard® may be used.

5.8.2 Stud spacing shall be a maximum of 24” (610 mm) o.c.

5.8.3 GoBoard® installed on light-frame wood walls:

5.8.3.1 The sheathing panels are applied to wall framing with minimum 16 gauge staples, 1" crown with minimum 1" leg.

5.8.4 GoBoard® installed on light-frame steel walls:

5.8.4.1 GoBoard® Hi-Lo 1⅝" self-drilling screws with 1¼" GoBoard® washers.

5.8.4.2 1½" bugle head self-drilling screws.

5.8.4.3 Maximum of 12" o.c. (305 mm) along the edge and 12" o.c. (305 mm) in the field, with a ⅜" minimum edge distance.

5.9 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.

6 Installation

6.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this TER and the applicable building code.

6.2 In the event of a conflict between the manufacturer installation instructions and this TER, the more restrictive shall govern.

6.3 Where required, gypsum wallboard shall be a minimum ½" thickness.

6.4 *Orientation*

6.4.1 GoBoard® must be installed vertically with the length dimension of the panels parallel to the framing behind and all panel edges supported by framing or blocking.

6.4.2 GoBoard® must be installed over studs a nominal thickness of not less than 2" (51 mm) and spaced a maximum of 24" (610 mm) o.c.

6.5 *Fastener Type*

6.5.1 GoBoard® installed on light-frame wood walls:

6.5.1.1 #9-18 x 1¼" GoBoard® Hi-Lo Wood Screws

6.5.1.2 Staples shall be a minimum 16 gauge, 1" crown with minimum 1" leg

6.5.1.3 Galvanized roofing nails minimum 1¼"

6.5.2 GoBoard® installed on light-frame steel walls:

6.5.2.1 GoBoard® Hi-Lo 1-⅝" self-drilling screws with 1¼" GoBoard® washers

6.5.2.2 1½" bugle head self-drilling screws

6.5.3 *Gypsum Wallboard:*

6.5.3.1 Where required, gypsum wallboard shall be installed with a minimum:

6.5.3.1.1 #6 x 1¼ " Type W or S screws

6.5.3.1.2 5d cooler nails (on light-frame wood walls only)

6.6 *Fastener Spacing*

6.6.1 GoBoard® installed on light-frame wood walls:

6.6.1.1 Maximum of 8" o.c. (203 mm) along the edge and 8" o.c. (203 mm) in the field.

6.6.2 GoBoard® installed on light-frame steel walls:

6.6.2.1 Maximum of 12" o.c. (305 mm) along the edge and 12" o.c. (305 mm) in the field.

6.7 *Fastener Edge Distance*

6.7.1 Fastener edge distance is a minimum of ⅜" (9.5 mm) for both GoBoard® and gypsum.

6.7.2 Where staples are used, always fasten staples parallel to the framing member.

6.7.3 Where GoBoard® Hi-Lo Screws are used, the fasteners shall be staggered at the board joints to avoid overlapping.

6.8 *Treatment of Joints*

6.8.1 GoBoard® sheathing joints must be butted at framing members, and a single row of fasteners must also be applied to each panel edge into the framing behind.

6.8.2 Do not tack GoBoard® to framing, but fasten each panel completely once fastening begins.

6.8.3 For installation on steel studs and when GoBoard® is used for structural resistance, GoBoard® panels shall be installed in one of the following ways:

6.8.3.1 With a ⅛" gap between boards on all sides and the gap should be filled with GoBoard® Pro Sealant. A minimum 2" wide strip of GoBoard® Pro sealant shall cover each joint (minimum 1" of GoBoard® Pro sealant on each side of the joint).

6.8.3.2 With board joints butted and taped with 4" wide GoBoard® Seam Tape or Shurtape XP-3233-12. The tape shall be adhered to the board such that there are approximately 2" of tape overlapping the board on each side of the joint.

6.9 *Window Treatments*

6.9.1 If windows are made to accommodate traditional ½" (12.7 mm) sheathing materials, order windows with adjustable nailing fins from the supplier. Door brick moldings may be planed or routed ⅜" (9.5 mm) in order to accommodate the different sheathing thickness, either at the jobsite or by the millwork supplier.

6.9.2 GoBoard® must be installed with appropriate flashing and counter flashing in conformance with accepted building standards and in compliance with local building codes and the flashing manufacturer installation instructions.

7 Substantiating Data

7.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

7.1.1 Compressive strength testing in accordance with ASTM D2394.

7.1.2 Lateral wall testing in accordance with ASTM E72 and ASTM E564.

7.1.3 Cyclic lateral wall testing in accordance with ASTM E2126 and analysis per ASTM D7989.

7.1.4 Transverse load testing in accordance with ASTM E330 and ABTG ANSI/FS 100.

7.1.5 Bending tests for foam plastic insulation in accordance with ABTG ANSI/FS 100.

7.1.6 Uplift capacity testing in accordance with ASTM E72.

7.1.7 Thermal resistance property testing in accordance with ASTM C518.

7.1.8 Material testing in accordance with ASTM C1289.

7.1.9 Water penetration testing in accordance with ASTM E331.

7.1.10 Water vapor permeance testing in accordance with ASTM E96.

7.1.11 Air permeance testing in accordance with ASTM E2178.

7.1.12 Flame spread and smoke developed rating tests in accordance with ASTM E84.

7.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies (i.e., ANAB accredited agencies), approved sources (i.e., RDPs), and/or professional engineering regulations. Accuracy of external test data and resulting analysis is relied upon

7.3 Where pertinent, testing and/or engineering analysis is based upon provisions that have been codified into law through state or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ's engineering practice may use a code-adopted provision as the control sample. A control sample versus a test sample establishes a product as being equivalent to the code-adopted provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

7.4 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, Listings, certified reports, duly authenticated reports from approved agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this TER, may be dependent upon published design properties by others.

7.5 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.[16]

7.6 Where additional condition of use and/or code compliance information is required, please search for GoBoard® on the DrJ Certification website.

8 Findings

8.1 As delineated in Section 3, GoBoard® has performance characteristics that were tested and/or meet pertinent standards and is suitable for use pursuant to its specified purpose.

8.2 When used and installed in accordance with this TER and the manufacturer installation instructions, GoBoard® shall be approved for the following applications:

8.2.1 Compressive performance in accordance with ASTM D2394.

8.2.2 Lateral load resistance due to wind loading in accordance with IBC Section 2306.1, IBC Section 2306.3 for light-frame wood and with IBC Section 2211.1 for steel wall assemblies.

8.2.3 Lateral load resistance due to seismic loading in accordance with IBC Section 2211.1 for light-frame steel wall assemblies.

8.2.4 Resist transverse loads on wall assemblies used in light-frame wood and steel construction in accordance with IBC Section 1609.1.1 and IRC Section R301.2.1.

8.2.5 Resist uplift loads on wall assemblies used in light-frame steel construction in accordance with IBC Section 1609 and IRC Section R301.2.1.

8.2.6 Performance of foam plastics in accordance with IBC Section 2603 and IRC Section R316.

8.2.7 Performance for use as insulating sheathing (R-value) in accordance with IRC Section N1102.1, IRC Section N1102.2 and IECC Section R402.

8.2.8 Performance for use as a WRB in accordance the IBC Section 1403.2[17] and IRC Section R703.2.

8.2.9 Performance for use as a vapor retarder in accordance with IBC Section 202, IBC Section 1404.3,[18] IRC Section R202 and IRC Section R702.7.

8.2.10 Performance for use as an air barrier in accordance with IRC Section N1102.4.1.1 and IECC Section C402.5.1.3.[19]

8.2.11 Surface burning characteristics in accordance with IBC Section 2603.3 and IRC Section R316.3.

8.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Johns Manville.

8.4 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10[20] 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.

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

[17] 2015 IBC Section 1404.2

[18] 2015 IBC Section 1405.3

[19] 2018 IECC Section C402.5.1.2.1

[20] 2018 IFC Section 104.9

8.5 **Approved**:[21] Building codes require that the building official shall accept duly authenticated reports[22] or research reports[23] from approved agencies and/or approved sources (i.e., licensed RDP) with respect to the quality and manner of use of new products, materials, designs, services, assemblies, or methods of construction.

8.5.1 Acceptability of an approved agency, by a building official, is performed by verifying that the agency is accredited by a recognized accreditation body of the International Accreditation Forum (IAF).

8.5.2 Acceptability of a licensed RDP, by a building official, is performed by verifying that the RDP and/or their business entity is listed by the licensing board of the relevant jurisdiction.

8.5.3 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, as denial without written reason deprives a protected right to free and fair competition in the marketplace.

8.6 DrJ is an engineering company, employs RDPs and is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131.

8.7 Through ANAB accreditation and the IAF Multilateral Agreements, this TER can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*." IAF specifically says, "*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope*."[24]

9 Conditions of Use

9.1 Material properties shall not fall outside the boundaries defined in Section 3.

9.2 As defined in Section 3, 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.

9.3 Allowable shear loads shall not exceed values in Table 2 for wind loads and Table 3 for seismic loads.

9.4 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:

9.4.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice, and, when prepared by an approved source, shall be approved when requirements of adopted legislation are met.

9.4.2 This TER and the installation instructions shall be submitted at the time of permit application.

9.4.3 This product has an internal quality control program and a third-party quality assurance program.

9.4.4 At a minimum, this product shall be installed per Section 6 of this TER.

9.4.5 The review of this TER, by the AHJ, shall be in compliance with IBC Section 104 and IBC Section 105.4.

9.4.6 This product has 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.

9.4.7 The application of this product in the context of this TER 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.

---

[21] 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.

[22] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1

[23] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2

[24] https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise

9.5 The approval of this TER by the AHJ shall comply with IBC Section 1707.1, where legislation states in pertinent part, "*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 IBC Section 104.11*" all of IBC Section 104, and IBC Section 105.4.

9.6 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

9.7 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the owner or the owner's authorized agent.

10 Identification

10.1 The product listed in Section 1.1 is identified by a label on the board or packaging material bearing the manufacturer name, product name, TER number, and other information to confirm code compliance.

10.2 Additional technical information can be found at www.jm.com.

11 Review Schedule

11.1 This TER is subject to periodic review and revision. For the most recent version, visit drjcertification.org.

11.2 For information on the status of this TER, contact DrJ Certification.

12 Approved for Use Pursuant to US and International Legislation Defined in Appendix A

12.1 GoBoard® is included in this TER 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, and whose TER Listing states either that the material, product, or service meets identified standards or has been tested and found suitable for a specified purpose. This TER meets the legislative intent and definition of being acceptable to the AHJ.

1 Appendix A: 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 GoBoard® 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).

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[25] that are not specifically provided for in any building code, 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.[26]

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 has 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.[27]

[25] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706.2

[26] IBC 2021, Section 1706.1 Conformance to Standards

[27] IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General

1.3 **Approved**[28] **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, which 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.[29] The Superintendent of Building roster of approved testing agencies 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 CBI 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.[30]

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 NYC Building Code 2022 (NYCBC) states in pertinent part that an approved agency shall be deemed[31] 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[32] (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) A certification mark or listing of an approved certification agency, 2) A test report from an approved testing laboratory, 3) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity; 4) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a professional engineer or architect, licensed in Florida. 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) A certification mark, listing, or label from a commission-approved certification agency indicating that the product complies with the code; 2) A test report from a commission-approved testing laboratory indicating that the product tested complies with the code; 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; 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; 5) A statewide product approval issued by the Florida Building Commission. 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).

---

[28] See Section 8 for the distilled building code definition of Approved.

[29] Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES

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

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

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

1.7 **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.

1.8 **Approved by New Jersey**: Pursuant to Building Code 2018 of New Jersey in IBC Section 1707.1 General,[33] 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)".[34] Furthermore N.J.A.C 5:23-3.7 states: Municipal approvals of alternative materials, equipment, or methods of construction. **(a) 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. 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 (a) above. 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 (a) above. 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 2 given that the listed entities are no longer in existence and/or do not provide "reports of engineering findings".

1.9 **Approved by the Code of Federal Regulations Manufactured Home Construction and Safety Standards**: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[35] and Part 3280,[36] the Department encourages innovation and the use of new technology in manufactured homes. The design and construction of a manufactured home shall conform with the provisions of Part 3282 and Part 3280 where key approval provisions in mandatory language follow: 1) "All construction methods shall be in conformance with accepted engineering practices"; 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."; and 3) "The design stresses of all materials shall conform to accepted engineering practice."

1.10 **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:

1.10.1 For new materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests.[37]

1.10.2 For innovative alternative products, materials, designs, services and/or methods of construction, in the absence of approved rules or other approved standards…the building official shall accept duly authenticated reports (i.e., listing and/or research report) from approved agencies with respect to the quality and manner of use of new materials or assemblies.[38] A building official approved agency is deemed to be approved via certification from an accreditation body that is listed by the International Accreditation Forum[39] or equivalent.

---

[33] https://up.codes/viewer/new_jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1

[34] https://www.nj.gov/dca/divisions/codes/codreg/ucc.html

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

[36] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

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

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

[39] Please see the ANAB directory for building official approved agencies.

1.10.3 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.[40] An approved source is defined as a PE subject to professional engineering laws, where a research and/or a technical evaluation report certified by a PE, shall be approved.

1.11 **Approval by International Jurisdictions**: The USMCA and GATT agreements provide for approval of innovative materials, products, designs, services, assemblies and/or methods of construction through the Technical Barriers to Trade agreements and the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA), where these agreements:

1.11.1 Permit participation of conformity assessment bodies located in the territories of other Members (defined as GATT Countries) under conditions no less favourable than those accorded to bodies located within their territory or the territory of any other country,

1.11.2 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.

1.11.3 State that conformity assessment procedures are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform to the applicable technical regulations or standards.

1.11.4 **Approved**: The purpose of the IAF 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, products, designs, services, assemblies and/or methods of construction. Accreditations granted by IAF MLA signatories are recognised worldwide based on their equivalent accreditation programs, therefore reducing costs and adding value to businesses and consumers.

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