



Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1501-06



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SMARTci[™] Exterior Wall Continuous Insulation System Utilizing GreenGirt[™] Trade Secret Report Holder:

A2P, LLC (Advanced Architectural Products)

Phone: 269-355-1818

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CSI Designations:

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 20 00 - Thermal Protection Section: 07 21 00 - Thermal Insulation Section: 07 27 23 - Board Product Air Barriers Section: 07 48 00 - Exterior Wall Assemblies

1 Innovative Product Evaluated¹

1.1 SMARTci Exterior Wall Continuous Insulation System

2 Product Description and Materials

- 2.1 SMARTci is a continuous insulation system consisting of a Z-Girt (GreenGirt) and polyisocyanurate (polyiso) insulation.
- 2.2 GreenGirt acts as a thermal spacer between exterior cladding and interior framing, which prevents thermal bridging.
- 2.3 The innovative product evaluated in this report is shown in **Figure 1** and **Figure 2**.





Figure 1. SMARTci System







- 2.4 GreenGirt Adjustable Wall System consists of the same FRP material as GreenGirt, but allows in/out adjustment of the depth of the girt. GreenGirt Adjustable Wall System has a range of depths that the girt can expand to meet.
- 2.5 Materials
 - 2.5.1 GreenGirt:
 - 2.5.1.1 Fiber-reinforced polymer optimized for structural, hygrothermal,² and fire resistance formed into a structural "Z" shape as shown in **Figure 2**.
 - 2.5.1.2 Two 16-gauge high-strength steel inserts are to be slid into the top and bottom flanges of the GreenGirt to provide added strength in resisting service loads and to act as retention cleats for fasteners while increasing the pullout capacities of fasteners, as shown in **Figure 2**.
 - 2.5.1.3 Material Availability:
 - 2.5.1.3.1 Depth:
 - 2.5.1.3.1.1 1¹/₂", 2", 2¹/₂", 3", 3¹/₂", 4", 4¹/₂", 5", 5¹/₂", 6", and 8"
 - 2.5.1.3.2 Standard Length:
 - 2.5.1.3.2.1 8'
 - 2.5.2 Insulation:
 - 2.5.2.1 Any of the following insulation materials may be used in the SMARTci System:
 - 2.5.2.1.1 Atlas EnergyShield[®] Pro, EnergyShield[®] Pro 2, and Rboard[®] Pro
 - 2.5.2.1.2 Carlisle R2+[®] Panels
 - 2.5.2.1.3 Dow Thermax[™] Panels
 - 2.5.2.1.4 Hunter Xci Panels
 - 2.5.2.1.5 Rmax[®] TSX-8500, TSX-8510, or TSX-8520
 - 2.5.2.1.6 Firestone Enverge™ CI Panels





- 2.5.2.1.7 Mineral wool meeting the following requirements:
 - 2.5.2.1.7.1 Minimum 1¹/₂" thick
 - 2.5.2.1.7.2 Minimum 4 pcf density
 - 2.5.2.1.7.3 No facer
 - 2.5.2.1.7.4 Noncombustible in accordance with ASTM E136
- 2.6 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions³

- 3.1 <u>New Materials</u>⁴ 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.⁵ The <u>design strength</u> and permissible stresses shall be established by tests⁶ and/or engineering analysis.⁷
- 3.2 <u>Duly authenticated reports</u>⁸ and <u>research reports</u>⁹ are test reports and related engineering evaluations that are written by an <u>approved agency</u>¹⁰ and/or an <u>approved source</u>.¹¹
 - 3.2.1 These reports utilize intellectual property and/or trade secrets to create public domain material properties for commercial end-use.
 - 3.2.1.1 This report protects confidential Intellectual Property and trade secretes under the regulation, <u>18.US.Code.90</u>, also known as <u>Defend Trade Secrets Act of 2016</u> (DTSA).¹²
- 3.3 An approved agency is *"approved"* when it is <u>ANAB ISO/IEC 17065 accredited</u>. DrJ Engineering, LLC (DrJ) is accredited and listed in the <u>ANAB directory</u>.
- 3.4 An <u>approved source</u> is *"approved"* when a professional engineer (i.e., <u>Registered Design Professional</u>, hereinafter <u>RDP</u>) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the <u>state legislature</u> via its professional engineering regulations.¹³
- 3.5 Testing and/or inspections conducted for this <u>duly authenticated report</u> were performed by an <u>ISO/IEC 17025</u> <u>accredited testing laboratory</u>, an <u>ISO/IEC 17020 accredited inspection body</u>, and/or a licensed <u>RDP</u>.
- 3.5.1 The <u>Center for Building Innovation</u> (CBI) is <u>ANAB¹⁴ ISO/IEC 17025</u> and <u>ISO/IEC 17020</u> accredited.
- 3.6 The regulatory authority shall <u>enforce</u>¹⁵ 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 <u>writing</u>¹⁶ stating the nonconformance and the path to its cure.
- 3.7 The regulatory authority shall accept <u>duly authenticated reports</u> from an <u>approved agency</u> and/or an <u>approved</u> <u>source</u> 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.¹⁷
- 3.8 ANAB is an <u>International Accreditation Forum</u> (IAF) <u>Multilateral Recognition Arrangement</u> (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.¹⁸ Thus, all ANAB ISO/IEC 17065 <u>duly authenticated reports</u> are approval equivalent,¹⁹ and can be used in any country that is an MLA signatory found at this link: <u>https://iaf.nu/en/recognised-abs/</u>
- 3.9 Approval equity is a fundamental commercial and legal principle.²⁰





4 Applicable Standards for the Listing; Regulations for the Regulatory Evaluation²¹

4.1 Standards

- 4.1.1 AAMA 501.1: Standard Test Method for Exterior Windows, Curtain Walls, and Doors for Water Penetration Using Dynamic Pressure
- 4.1.2 ANSI/ASHRAE/IES 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings
- 4.1.3 ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- 4.1.4 ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- 4.1.5 ASTM D638: Standard Test Method for Tensile Properties of Plastics
- 4.1.6 ASTM D790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- 4.1.7 ASTM D792: Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- 4.1.8 ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials
- 4.1.9 ASTM D1929: Standard Test Method for Determining Ignition Temperature of Plastics
- 4.1.10 ASTM D2990: Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
- 4.1.11 ASTM E72: Standard Test Methods for Conducting Strength Tests of Panels for Building Construction
- 4.1.12 ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials
- 4.1.13 ASTM E283: Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences Across the Specimen
- 4.1.14 ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- 4.1.15 ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- 4.1.16 ASTM G155: Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
- 4.1.17 NFPA 285-12: Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components²²

4.2 Regulations

- 4.2.1 IBC 15, 18, 21, 24: International Building Code®
- 4.2.2 IRC 15, 18, 21, 24: International Residential Code®
- 4.2.3 IECC 15, 18, 21, 24: International Energy Conservation Code®
- 4.2.4 CBC—19, 22: California Building Code²³
- 4.2.5 CRC—19, 22: California Residential Code²¹
- 4.2.6 FBC-B—20, 23: Florida Building Code Building²⁴
- 4.2.7 FBC-R—20, 23: Florida Building Code Residential²²





5 Listed²⁵

5.1 Equipment, materials, products, or services included in a List published by a <u>nationally recognized testing</u> <u>laboratory</u> (i.e., CBI), an <u>approved agency</u> (i.e., CBI and DrJ), and/or and <u>approved source</u> (i.e., DrJ), or other organization(s) 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 General

- 6.1.1 SMARTci can be installed over substrates including cold-formed steel wall studs, masonry, concrete or roof decks.
- 6.1.2 SMARTci may be used in buildings constructed in accordance with IBC/IRC requirements for Type I-V construction.
- 6.1.3 When used to attach exterior cladding to the building envelope, SMARTci provides the following:
 - 6.1.3.1 Transverse load resistance (wind and seismic)
 - 6.1.3.2 Thermal resistance (provides a thermal break between the cladding and wall framing)
 - 6.1.3.3 Resistance to gravity loads induced by the weight of the cladding materials
- 6.2 Cladding Allowable Loading
 - 6.2.1 The SMARTci system GreenGirt can be installed horizontally or vertically on the exterior side of stud-framed walls at 16", 24", 36", and 48" o.c.
 - 6.2.2 Brittle Finishes:
 - 6.2.2.1 For brittle finish exterior cladding, GreenGirt can support cladding out of plane lateral loading as shown in **Table 1** for the 1.5" profile and **Table 2** for the 2" profile. Contact manufacturer for other profile sizes.





GroonGirt Span	GreenGirt Spacing	Allowable Wind Load Design Values ^{1,2,3,4,5} (psf)									
(Stud Spacing)				Cla	dding Weight (psf)					
(in)	(in)	0	3	5	7	9	10	15			
	16	96	96	96	96	96	96	92			
16	24	64	64	64	64	64	61	59			
10	36	42	-	-	-	-	-	-			
	48	32	32	31	30	30	25	21			
	16	68	68	68	68	68	68	68			
24	24	45	45	45	45	45	45	43			
24	36	30	-	-	-	-	-	-			
	48	23	23	23	21	19	17	9			
	16	36	36	36	36	36	36	36			
26	24	24	24	24	24	24	24	21			
50	36	16	-	-	-	-	-	-			
	48	12	12	12	11	9	7	-			
	16	20	20	20	20	20	20	18			
48	24	13	13	13	13	12	12	10			
	36	9	-	-	-	-	-	-			
	48	7	7	6	5	3	-	-			

Table 1. SMARTci GreenGirt Design Values for Brittle Finish Cladding – 1.5" Profile

SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m²

1. Analysis is for GreenGirt only; it does not include insulation.

2. Design values are based on live load deflections of L/240 and total load deflection of L/120.

3. Deflection limits are based on ASCE 7-16 and ASCE 7-22 Components and Cladding loads multiplied by 0.42.

4. Allowable loading is based on allowable stress design with a material stress safety factor > 2.0.





GroonGirt Span	GreenGirt Spacing	Allowable Wind Load Design Values ^{1,2,3,4,5} (psf)								
(Stud Spacing)				Cla	dding Weight (psf)				
(in)	(in)	0	3	5	7	9	10	15		
	16	175	175	175	175	175	175	168		
16	24	116	116	116	116	116	112	108		
10	36	77	-	-	-	-	-	-		
	48	58	58	56	54	54	45	39		
	16	124	124	124	124	124	124	124		
24	24	83	83	83	83	83	83	78		
24	36	55	-	-	-	-	-	-		
	48	41	41	41	39	34	31	16		
	16	65	65	65	65	65	65	65		
26	24	43	43	43	43	43	43	39		
50	36	29	-	-	-	-	-	-		
	48	22	22	22	20	16	13	-		
	16	36	36	36	36	36	36	33		
10	24	24	24	24	24	23	22	18		
40	36	16	-	-	-	-	-	-		
	48	12	12	11	9	5	-	-		

Table 2. SMARTci GreenGirt Design Values for Brittle Finish Cladding – 2" Profile

SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m²

1. Analysis is for GreenGirt only; it does not include insulation.

2. Design values are based on live load deflections of L/240 and total load deflection of L/120.

3. Deflection limits are based on ASCE 7-16 and ASCE 7-22 Components and Cladding loads multiplied by 0.42.

4. Allowable loading is based on allowable stress design with a material stress safety factor > 2.0.





6.2.3 Flexible Finishes:

6.2.3.1 For flexible finish exterior cladding, SMARTci can resist cladding out of plane lateral loading as shown in **Table 3** for the 1.5" profile and **Table 4** for the 2" profile. Contact manufacturer for other profile sizes.

GreenGirt Span	GreenGirt Spacing	Allowable Wind Load Design Values ^{1,2,3,4,5} (psf)									
(Stud Spacing)				Cla	dding Weight (psf)					
(IN)	(in)	0	3	5	7	9	10	15			
	16	185	179	174	170	166	163	152			
16	24	124	117	113	109	105	100	91			
10	36	82	-	-	-	-	-	-			
	48	62	56	50	45	42	40	30			
	16	121	120	118	117	117	114	103			
24	24	81	79	78	76	71	68	57			
24	36	54	-	-	-	-	-	-			
	48	40	39	34	29	25	23	11			
	16	57	54	53	52	51	50	48			
26	24	38	35	34	33	32	32	29			
50	36	25	-	-	-	-	-	-			
	48	19	17	16	15	12	9	-			
	16	32	30	29	28	27	26	24			
10	24	21	19	19	18	17	16	13			
40	36	14	-	-	-	-	-	-			
	48	11	9	8	7	4	3	-			

Table 3. SMARTci GreenGirt Design Values for Flexible Finish Cladding - 1.5" Profile

SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m²

1. Analysis is for GreenGirt only; it does not include insulation.

2. Design values are based on live load deflections of L/120 and total load deflection of L/90.

3. Deflection limits are based on ASCE 7-16 and ASCE 7-22 Components and Cladding loads multiplied by 0.42.

4. Allowable loading is based on allowable stress design with a material stress safety factor > 2.0.





GroonGirt Span	GroonGirt	Allowable Wind Load Design Values ^{1,2,3,4,5} (psf)									
(Stud Spacing)	Spacing			Cla	dding Weight (psf)					
(in)	(in)	0	3	5	7	9	10	15			
	16	252	243	237	231	226	222	207			
16	24	168	159	154	148	142	136	123			
10	36	112	-	-	-	-	-	-			
	48	84	76	68	62	57	54	40			
	16	164	163	161	160	158	155	140			
24	24	110	108	106	103	96	93	78			
24	36	73	-	-	-	-	-	-			
	48	55	53	47	39	34	31	16			
	16	77	73	72	70	69	68	65			
26	24	52	48	47	45	44	43	40			
50	36	34	-	-	-	-	-	-			
	48	26	23	22	20	16	13	-			
	16	43	41	40	38	37	36	33			
40	24	29	26	25	24	23	22	18			
40	36	19	-	-	-	-	-	-			
	48	14	13	11	9	5	4	-			

Table 4. SMARTci GreenGirt Design Values for Flexible Finish Cladding – 2" Profile

SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m²

1. Analysis is for GreenGirt only; it does not include insulation.

2. Design values are based on live load deflections of L/120 and total load deflection of L/90.

3. Deflection limits are based on ASCE 7-16 and ASCE 7-22 Components and Cladding loads multiplied by 0.42.

4. Allowable loading is based on allowable stress design with a material stress safety factor > 2.0.





6.3 Transverse Loads

6.3.1 SMARTci is permitted to resist transverse wind load forces using the allowable transverse loads (in pounds per square foot) set forth in **Table 5** when installed with Hunter Xci Class A or Rmax TSX 8500 Foam Plastic Insulating Sheathing (FPIS).

Product Name	Minimum Insulation Thickness (in)	Maximum Stud Spacing (in)	Maximum GreenGirt Spacing (in)	Allowable Pressure (psf)	Allowable Wind Speed, V _{asd} (mph)	Basic Wind Speed, V _{ult} (mph)	Comments
SMARTci	2	24	24	33.3	120	150	SMARTci on open studs. Panel joints allowed between studs

Table 5. SMARTci Transverse Loads and Wind Speeds^{1,2}

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

1. Tested in accordance with ASTM E330.

Allowable wind speed based on Components and Cladding loads for a building with a mean roof height of 30' and located in Exposure B, Wall Zone 5 and 10-ft² area. Adjustments for height and exposure shall be in accordance with <u>IRC Figure R301.2(3)</u>.

6.4 Air Barrier

2.

- 6.4.1 SMARTci meets the requirements of <u>IECC Section C402.6.1</u>²⁶ for use as an air barrier assembly when used with Hunter Xci Class A or Rmax TSX 8500 FPIS.
 - 6.4.1.1 FPIS shall be installed in accordance with Advanced Architectural Products (A2P) installation instructions and this report. See **Table 6** for SMARTci Air Barrier properties.

Table 6.	. SMARTci Air Barri	er Properties
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Product Name	Minimum Insulation Thickness ² (in)	Maximum Stud Spacing (in)	Maximum GreenGirt Spacing (in)	Pressure¹ (psf)	Result (cfm/ft²)	Comments				
SMARTci	2	24	24	20	< 0.04	SMARTci on open studs. Panel joint between studs. Includes perforations and taped seams.				
SI: 1" = 25.4 n	SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m ²									

1. Tested in accordance with ASTM E283 as specified in IECC Section C402.6.2.3.2.²

2. Products less than 2" thick are not certified for use as air barriers.

6.5 Water-Resistive Barrier (WRB)

- 6.5.1 SMARTci is approved for use as a WRB when installed with Hunter Xci Class A or Rmax TSX 8500 FPIS as prescribed in <u>IBC Section 1404.2</u> and <u>IRC Section R703.2</u>, when installed on exterior walls as described in this section and as shown in **Table 7**.
- 6.5.2 Maximum 24" wide insulation boards shall be installed horizontally over exterior framing spaced a maximum of 24" (610 mm) o.c.
- 6.5.3 Seams are not required to be taped.
- 6.5.4 Flashing of all sheathing penetrations is required and shall comply with the applicable code.





Product Name	Minimum Insulation Thickness ³ (in)	Maximum Stud Spacing (in)	Maximum GreenGirt Spacing (in)	Pressure (psf)	Duration of Test (min)	Result	Comments				
SMARTci	2	24	24	10	15	No Leakage	SMARTci on open studs. Panel joint between studs. 3" 16-gauge strapping at 24" o.c. No tape on joints ¹				
	2	16	24	20	15	No Leakage	SMARTci on open studs. Panel joint between studs. No tape at joints¹				
	2	24	24	20	15	No Leakage	SMARTci on open studs. Panel joint between studs. Includes perforations and taped seams ¹				
	2	24	24	15	15	No Leakage	SMARTci on open studs. Panel joint between studs ²				
SI: 1" = 25.4 mm, 1 Tested in a	SI: 1" = 25.4 mm, 1 psf = 0.0479 kN/m ²										

Table 7. SMARTci Water-Resistance Barrier Properties

2. Tested in accordance with AAMA 501.1.

conditions.

3. Products less than 2" thick are not certified for use as WRBs.

6.6 Surface Burn Characteristics

6.6.1 GreenGirt, Rmax TSX-8500, and Hunter Xci Class A were evaluated to assess performance with regard to flame spread and smoke developed indexes in accordance with ASTM E84 (see Table 8).

Table 8. Fire Performance of SMARTci

Product Name	Flame Spread ³	Smoke Developed ³	Classification							
GreenGirt ¹	GreenGirt ¹ ≤ 25		Class A							
Rmax TSX-85002 ≤ 25		< 450	Class A							
Hunter Xci Class A²≤ 25< 450Class										
GreenGirt tested in accordance with Foam core tested in accordance wit Flame spread and smoke developed										





6.7 Thermal Performance

- 6.7.1 SMARTci was evaluated for its thermal properties as shown in **Table 9**.
 - 6.7.1.1 Values were derived from 3D modeling using SOLIDWORKS[®] Simulation software with a steady state conduction model when installed with polyisocyanurate insulation.

Table 9. SMARTci Thermal Performance With and Without Exterior Sheathing^{1,3}

Steel	FRP	FRP Girt	Eastonor	Shoothing on	Nominal	Effe	ctive	% Efficiency ²
Stud Spacing (in)	Girt Spacing (in)	Insulation Thickness (in)	Spacing (in)	Exterior Wall (5/8" DensGlass)	Assembly R Value (hr·ft2·°F/BTU)	Assembly U Factor (BTU/hr·ft2·°F)	Assembly R Value (hr·ft2·°F/BTU)	GreenGirt
16	16	2.0	16	N	15.8	0.069	14.6	92.62
10	10	2.0	10	Y	16.3	0.066	15.1	92.71
16	16	25	16	Ν	19.1	0.057	17.7	92.76
10	10	2.5	10	Y	19.6	0.055	18.2	92.99
16	16	3.0	16	Ν	22.3	0.048	20.7	92.75
10	10	5.0	10	Y	22.8	0.047	21.2	92.87
16	16 3.5	35	16	Ν	25.6	0.042	23.6	92.34
10	10	0.0	10	Y	26.1	0.041	24.2	92.75
16	16 16	4.0	16	Ν	28.8	0.037	26.7	92.66
10				Y	29.3	0.037	27.1	92.51
24	24 24 2.0	2.0	24	Ν	15.8	0.066	15.1	95.37
24		2.0	24	Y	16.3	0.064	15.6	95.69
24	24	25	24	Ν	19.1	0.055	18.1	95.19
24	24	2.5	24	Y	19.6	0.054	18.7	95.40
24	24	3.0	24	Ν	22.3	0.047	21.2	95.15
24	24	5.0	24	Y	22.8	0.046	21.8	95.38
24	24	35	24	Ν	25.6	0.041	24.3	95.11
24	24	0.0	24	Y	26.1	0.040	24.8	95.22
24	24	10	24	Ν	28.8	0.037	27.4	95.10
24	24	4.0	24	Y	29.3	0.036	27.9	95.32
24	18	20	24	Ν	15.8	0.065	15.5	97.84
24	40	2.0	24	Y	16.3	0.062	16.1	98.61
24	18	25	24	Ν	19.1	0.054	18.6	97.74
24	40	2.0	24	Y	19.6	0.052	19.2	98.05
24	19	30	24	Ν	22.3	0.046	21.8	97.69
24 48	40	5.0	24	Y	22.8	0.045	22.3	97.94





Steel	Steel FRP FRP Girt		Fastanar	Shoothing on	Nominal	Effe	ctive	% Efficiency ²
Stud Spacing (in)	Girt Spacing (in)	Insulation Thickness (in)	Spacing (in)	Exterior Wall (5/8" DensGlass)	Assembly R Value (hr·ft2·°F/BTU)	Assembly U Factor (BTU/hr·ft2·°F)	Assembly R Value (hr·ft2·°F/BTU)	GreenGirt
24 40	35	24	Ν	25.6	0.040	25.0	97.64	
24	40	0.0	24	Y	26.1	0.039	25.5	97.80
24	24 48 4.0	10	04	Ν	28.8	0.036	28.1	97.61
24 40	4.0	24	Y	29.3	0.035	28.6	97.76	
16	16 24	2.0	16	Ν	15.8	0.067	15.1	95.27
10				Y	16.3	0.064	15.6	95.51
16	24	2.5	16	Ν	19.1	0.055	18.2	95.26
10	24			Y	19.6	0.054	18.7	95.46
16	24	2.0	10	N	22.3	0.047	21.2	95.21
10	24	5.0	10	Y	22.8	0.046	21.8	95.49
16	24	2 5	16	N	25.6	0.041	24.3	95.11
16 24	24	3.5	16	Y	26.1	0.040	24.8	95.28
16	24	4.0	16	Ν	28.8	0.037	27.4	95.01
10	24	4.0	16	Y	29.3	0.036	27.9	95.17

Table 9. SMARTci Thermal Performance With and Without Exterior Sheathing^{1,3}

SI: 1" = 25.4 mm, 1 psi = 0.00689 MPa

1. Nominal assembly R-values based on ASHRAE 90.1.

2. Computed by dividing the effective R-value of the wall assembly by the nominal R-value of the assembly

3. Steel studs used in this model are more conductive than other options such as wood studs, concrete walls, masonry walls, and large member steel framing. The results in this table may be conservatively extended to those other types of wall substrates.

6.8 Vertical and Lateral Fire Propagation

6.8.1 SMARTci:

- 6.8.1.1 SMARTci was tested to assess its performance regarding vertical and lateral fire propagation in accordance with NFPA 285 per <u>IBC Section 2603.5.5</u> in a wall configuration consisting of polyiso insulation over a metal stud wall without exterior sheathing with Aluminum Composite Material (ACM) cladding (see **Figure 3**). Testing with this configuration is considered worst-case for two reasons:
 - 6.8.1.1.1 Testing with ACM is considered by fire experts as a cladding that easily melts and can spread flames, allowing the underlying insulation to ignite and spread flames via the air gap between the insulation and cladding.
 - 6.8.1.1.2 Testing with no exterior sheathing creates a large air gap that can spread flames worse than a system that uses exterior sheathing.
- 6.8.1.2 SMARTci was found to not contribute to overall flame spread of a wall assembly.
- 6.8.1.3 SMARTci was found to withstand fire propagation, allowing the cladding system to remain attached.
- 6.8.1.4 SMARTci can be used with NFPA 285-approved insulations as shown in **Section 11.2.6**.





- 6.8.1.5 SMARTci can be used with noncombustible mineral fiber insulation meeting minimum requirements listed in **Section 2.5.2.1.7**.
- 6.8.1.6 SMARTci can be used with the polyiso insulations listed in **Section 2.5.2**.
 - 6.8.1.6.1 Consult the NFPA 285 approvals (<u>DRR 1202-04</u> or Report Number <u>1407-01</u>) for these manufacturers to determine if the system is approved for use with no exterior sheathing or if exterior sheathing must be used.





Detail at Window Header

Wall Detail

Figure 3. SMARTci System Detail

- 6.8.1.7 SMARTci can be used in assemblies incorporating High Pressure Laminate (HPL) claddings only when the window header design is NFPA 285-approved for use with HPL claddings, and the SMARTci girt is installed in accordance with the following conditions:
 - 6.8.1.7.1 *Horizontal Applications:* The SMARTci girt may be left exposed (not covered by mineral fiber insulation) as shown in **Figure 4**.
 - 6.8.1.7.2 *Vertical Applications:* The SMARTci girt is covered by at least 1" of mineral fiber insulation as shown in **Figure 5**.



Figure 4. SMARTci System Detail of Horizontal Installation with HPL Cladding







Figure 5. SMARTci System Detail of Vertical Installation with HPL Cladding

- 6.8.2 GreenGirt Adjustable Wall System:
 - 6.8.2.1 GreenGirt Adjustable Wall System was evaluated to assess its performance with regard to vertical and lateral fire propagation in accordance with NFPA 285 and <u>IBC Section 2603.5.5</u> in wall configurations complying with the following limitations:
 - 6.8.2.1.1 For use only with mineral wool exterior insulation meeting minimum requirements in **Section 2.5.2.1.7**.
 - 6.8.2.1.2 For use with claddings approved for use with the polyiso insulations listed in **Section 2.5.2**.
 - 6.8.2.1.3 For use with WRBs installed under the insulation and approved for use under the polyiso insulations listed in **Section 2.5.2**.
 - 6.8.2.1.3.1 If mineral wool is 2" thick and meets minimum density requirement, any WRB can be used under the mineral wool.
 - 6.8.2.1.4 For use with NFPA 285-approved claddings such as ACM with the maximum air gap as tested or approved.
 - 6.8.2.1.5 For use with noncombustible claddings with any size air gap.
 - 6.8.2.2 GreenGirt Adjustable Wall System was found to not contribute to overall flame spread of a wall assembly.
 - 6.8.2.3 GreenGirt Adjustable Wall System was found to withstand fire propagation, allowing the cladding system to remain attached.
- 6.9 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.





7 Certified Performance²⁸

- 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.²⁹
- 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.³⁰

8 Regulatory Evaluation and Accepted Engineering Practice

- 8.1 The SMARTci system was evaluated to determine:
 - 8.1.1 Structural performance under transverse load conditions for wind loading in accordance with <u>IBC Section</u> <u>1609</u>, specifically <u>IBC Section 1609.4.3</u>.³¹
 - 8.1.2 Performance for use in exterior walls of buildings of any height and of Type I-V construction in accordance with <u>IBC Section 2603.5</u> and <u>IRC Section R303.5.12</u>.³²
 - 8.1.3 Performance for use in exterior walls of buildings as an air barrier in accordance with <u>IECC Section</u> <u>C402.6.1</u>.³³
 - 8.1.4 Performance for use in exterior walls of buildings as a WRB in accordance with <u>IBC Section 1404.2</u> and <u>IRC Section R703.2</u>.
 - 8.1.5 Performance in accordance with ASTM E84 for flame spread and smoke development ratings in accordance with <u>IBC Section 2603.5.4</u> and <u>IRC Section R303.3</u>.³⁴
 - 8.1.6 Thermal performance as a continuous insulation system in accordance with <u>IECC Section C402.6.1</u>³⁵ and ASHRAE 90.1.
 - 8.1.7 Use as part of NFPA 285 wall assembly designs, in accordance with <u>IBC Section 2603.5.5</u>.
 - 8.1.8 Fire resistance rated wall assemblies in accordance with <u>IBC Section 2603.5.1</u> are outside the scope of this report.
- 8.2 The GreenGirt Adjustable Wall System was evaluated to determine:
 - 8.2.1 Use as part of NFPA 285 wall assembly designs, in accordance with <u>IBC Section 2603.5.5</u>.
- 8.3 Fire resistance rated wall assemblies in accordance with <u>IBC Section 2603.5.1</u> are outside the scope of this report.
- 8.4 Any building code, regulation and/or accepted engineering evaluations (i.e., <u>research reports</u>, <u>duly</u> <u>authenticated reports</u>, etc.) that are conducted for this Listing were performed by DrJ, which is an <u>ISO/IEC</u> <u>17065 accredited certification body</u> and a professional engineering company operated by <u>RDP</u> or <u>approved</u> <u>sources</u>. DrJ is qualified³⁶ to practice product and regulatory compliance services within its <u>scope of</u> <u>accreditation and engineering expertise</u>,³⁷ respectively.
- 8.5 Engineering evaluations are conducted with DrJ's ANAB <u>accredited ICS code scope</u> of expertise, which is also its areas of professional engineering competence.
- 8.6 Any regulation specific issues not addressed in this section are outside the scope of this report.





9 Installation

- 9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.
- 9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.
- 9.3 SMARTci shall only be installed under the direct supervision of an experienced craftsperson, trained in the proper application of its diverse offering of products and services.
- 9.4 Installation shall comply with the manufacturer installation instructions and this report. In the event of a conflict between the manufacturer installation instructions and this report, the more restrictive shall govern.
- 9.5 Do not stack other objects on top of SMARTci insulation panels, nor GreenGirt packages.
- 9.6 GreenGirt may not be cut with plywood or toothed blades. Use only abrasive chop saw/hand saw blades. Do not use actuated fasteners, impact hammers, or impact drills.
- 9.7 Installation Procedure
 - 9.7.1 Cut bottom, base insulation panel to size and shim to level. Allow for 1/2" gap between the panel and the base (if applicable) for approved expandable sealant.
 - 9.7.2 Ensure the first GreenGirt is level and plumb. The height above the top of foundation is determined by project-specific factors. In most cases, the first GreenGirt will be installed above the first (bottom) row of insulation panels as shown in **Figure 6**.



Figure 6. Installation Detail

- 9.7.3 Starting at a transition or termination point, install first (bottom) GreenGirt by gently tamping it down in place along the (top) length of the panel. Ensure that the air seal rib of the GreenGirt aligns with the coordinating channel at the top of the insulation panel to prevent damage before tamping.
- 9.7.4 Apply two continuous ¹/₄" minimum beads of approved sealant at all transitions and terminations and onto GreenGirt behind insulation panels before installing them, as shown in **Figure 7**.







Figure 7. Proper Sealing of GreenGirt

- 9.7.5 When fastening GreenGirt to substrate, the following steps must be taken:
 - 9.7.5.1 The edge distance of any fastener hole (to the side of the GreenGirt) shall be a minimum of 1/2" from the edge of the profile to the closest side of the fastener hole, as demonstrated in **Figure 8**.
 - 9.7.5.2 Minimum clear distance in between holes is 5x the diameter.
 - 9.7.5.3 Minimum end (end of profile to edge of hole) distance in the longitudinal direction is 3x the diameter.
 - 9.7.5.4 Minimum edge (edge of profile to edge of hole) distance in the transverse direction is 2x the diameter.



Figure 8. Correct Fastener Position in GreenGirt

9.7.5.5 Slide galvanized metal inserts into backside of GreenGirt, with ¹/₄" minimum continuous bead of approved sealant applied to the adjoining end, with a minimum 3" overlap as shown in **Figure 9**.







Figure 9. Assembly of GreenGirt with Metal Insert and Sealant

9.7.5.6 Lap metal inserts at least 3" with a continuous bead of approved sealant in the 1/16" gap between, and fasten to stabilize, see **Figure 10**.



Figure 10. Correct Final Installation of GreenGirt

- 9.7.5.7 Fasten GreenGirt through the overlapped galvanized metal inserts into the substrate with approved Teks[®] fasteners, and remove any debris or moisture before installing panels.
- 9.7.5.8 Self-drilling fasteners of sufficient diameter and loading capacity for the application (dependent upon cladding) can be utilized to fasten girt to steel studs. Use pre-drilled holes in retention plates.
- 9.7.5.9 Threaded concrete fasteners can be used to fasten pre-drilled GreenGirt metal inserts to concrete substrate.





9.7.6 Continue by installing the second panel to the top track of the first (bottom) GreenGirt. Apply a ¹/₄" minimum continuous bead of approved sealant, at least 2" long in each direction, at all four corners of the panel, inside the pre-formed center profile channel, as shown in **Figure 11**.



Figure 11. Proper Sealing of Insulation Panel

9.7.7 After cleaning debris and moisture from top channel of GreenGirt, place insulation panel into channel, aligning the air seal rib into the groove properly. Insert the GreenGirt spline into the end vertical channel of the insulation panel with a rubber mallet, gently tamping to ensure a snug fit with the corner sealant beads as established in **Figure 12**.



Figure 12. Inserting the Spline into the Insulation Panel





9.7.8 Using a spare cutoff of GreenGirt as a buffer, gently tamp down on the insulation panel with a rubber mallet. Ensure a firm bond and that no damage is done to the panel edge, see **Figure 13**.



Figure 13. Using a Mallet to Tap the Insulation Panel into Place

9.7.9 When installing the next adjacent panel, **DO NOT SLIDE THE PANEL INTO PLACE**. Use the spare cutoff of GreenGirt to gently tamp it into place along the length of the top. Use the provided notched tamping block to gently tamp the two panels together to create a firm bond with the spline between them. Continue installing panels in this way, bottom to top, ensuring vertical joints are staggered from row to row and adjacent panel joints are fitted tight, see **Figure 14**.



Figure 14. Install the Adjacent Panel by Tamping into Place, Not Sliding





9.7.10 Once one row has been completed, install the next GreenGirt by using the provided notched tamping block and rubber mallet, ensuring a firm bond between the bottom channel of the girt and top edge of the insulation panel, as shown in **Figure 15**.



Figure 15. Properly Installing the Next GreenGirt Using the Mallet

10 Substantiating Data

- 10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:
 - 10.1.1 Transverse wind load testing in accordance with ASTM E330
 - 10.1.2 Water penetration properties testing in accordance with ASTM E331
 - 10.1.3 Air leakage properties testing in accordance with ASTM E283
 - 10.1.4 Surface burning testing in accordance with ASTM E84
 - 10.1.5 Tensile strength testing in accordance with ASTM D638
 - 10.1.6 Vertical and lateral fire propagation testing in accordance with NFPA 285
- 10.2 Engineering evaluation of five NFPA 285 tests using A2P, LLC SMARTci System in approved assemblies, performed by Priest & Associates Consulting, LLC.
- 10.3 Manufacturer technical data sheets and installation instructions.
- 10.4 Manufacturer quality control manual and evidence of approved agency inspections.
- 10.5 Information contained herein may include the result of testing and/or data analysis by sources that are <u>approved agencies</u>, <u>approved sources</u>, and/or an <u>RDP</u>. Accuracy of external test data and resulting analysis is relied upon.
- 10.6 Where applicable, 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 <u>being equivalent</u> to the regulatory provision in terms of quality, <u>strength</u>, effectiveness, <u>fire resistance</u>, durability, and safety.
- 10.7 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 <u>duly authenticated reports</u> from <u>approved</u> <u>agencies</u> and/or <u>approved sources</u> 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 <u>duly</u> <u>authenticated report</u>, may be dependent upon published design properties by others.





- 10.8 Testing and Engineering Analysis:
 - 10.8.1 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.³⁸
- 10.9 Where additional condition of use and/or regulatory compliance information is required, please search for SMARTci on the <u>DrJ Certification website</u>.

11 Findings

- 11.1 As outlined in **Section 6**, SMARTci has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.
- 11.2 When used and installed in accordance with this <u>duly authenticated report</u> and the manufacturer installation instructions, SMARTci shall be approved for the following applications:
 - 11.2.1 Structural performance under transverse load conditions in accordance with <u>IBC Section 1609</u>, specifically <u>IBC Section 1609.4.3</u>.³⁹
 - 11.2.2 Performance for use in exterior walls of buildings of any height and of Type I-IV construction in accordance with <u>IBC Section 2603.5</u> and <u>IRC Section R303.5.12</u>,⁴⁰ and Type V construction in accordance with <u>IBC Section 2603.2</u>, <u>IBC Section 2603.3</u> and <u>IBC Section 2603.4</u>.
 - 11.2.3 Performance for use in exterior walls of buildings as an air barrier in accordance with <u>IECC Section</u> <u>C402.6.1.41</u>
 - 11.2.4 Performance for use in exterior walls of buildings as a WRB in accordance with <u>IBC Section 1404.2</u> and <u>IRC Section R703.2</u>.
 - 11.2.5 Performance in accordance with ASTM E84 for flame spread and smoke development ratings in accordance with <u>IBC Section 2603.5.4</u> and <u>IRC Section R303.3</u>.⁴²
 - 11.2.6 SMARTci is approved for use as the attachment method of the exterior insulation layer when used in the approved NFPA 285 wall assemblies from the following polyisocyanurate manufacturers and their products:
 - 11.2.6.1 Atlas EnergyShield Pro, EnergyShield Pro 2 and Rboard Pro
 - 11.2.6.2 Carlisle R2+ Panels
 - 11.2.6.3 Dow Thermax Panels
 - 11.2.6.4 Hunter Xci Panels
 - 11.2.6.5 Rmax TSX-8500, TSX-8510, or TSX-8520
 - 11.2.6.6 Firestone Enverge CI Panels





- 11.2.7 Mineral wool meeting the following requirements:
 - 11.2.7.1 Minimum 1¹/₂" thick
 - 11.2.7.2 Minimum 4 pcf density
 - 11.2.7.3 No facer
 - 11.2.7.4 Noncombustible in accordance with ASTM E136
- 11.3 When used and installed in accordance with the manufacturer installation instructions, the GreenGirt Adjustable Wall System is approved for the following:
 - 11.3.1 As the attachment method of the exterior insulation layer when used in the approved NFPA 285, wall assemblies in **Section 6.8.2**.
- 11.4 Any application specific issues not addressed herein can be engineered by an <u>RDP</u>. Assistance with engineering is available from A2P, LLC.
- 11.5 <u>IBC Section 104.2.3</u> (IRC Section R104.2.2 and IFC Section 104.2.3⁴³ are similar) in pertinent part state:

104.2.3 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, provided that any such alternative is not specifically prohibited by this code and has been approved.

- 11.6 Approved:⁴⁴ Building regulations require that the building official shall accept duly authenticated reports.⁴⁵
 - 11.6.1 An approved agency is "approved" when it is ANAB ISO/IEC 17065 accredited.
 - 11.6.2 An <u>approved source</u> is *"approved"* when an <u>RDP</u> is properly licensed to transact engineering commerce.
 - 11.6.3 Federal law, <u>Title 18 US Code Section 242</u>, 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.
- 11.7 DrJ is a licensed engineering company, employs licensed <u>RDP</u>s and is an <u>ANAB Accredited Product</u> <u>Certification Body – Accreditation #1131</u>.
- 11.8 Through the <u>IAF Multilateral Arrangement</u> (MLA), this <u>duly authenticated report</u> can be used to obtain product approval in any <u>jurisdiction</u> or <u>country</u> because all ANAB ISO/IEC 17065 <u>duly authenticated reports</u> are equivalent.⁴⁶

12 Conditions of Use

- 12.1 Material properties shall not fall outside the boundaries defined in Section 6.
- 12.2 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.
- 12.3 When required by adopted legislation and enforced by the <u>building official</u>, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:
 - 12.3.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an <u>approved source</u>, shall be approved when signed and sealed.
 - 12.3.2 This report and the installation instructions shall be submitted at the time of permit application.
 - 12.3.3 This innovative product has an internal quality control program and a third-party quality assurance program.
 - 12.3.4 At a minimum, this innovative product shall be installed per **Section 9**.





- 12.3.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.
- 12.3.6 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.
- 12.3.7 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by <u>IBC</u> <u>Section 110.3</u>, <u>IRC Section R109.2</u>, and any other regulatory requirements that may apply.
- 12.4 The approval of this report by the AHJ shall comply with <u>IBC Section 1707.1</u>, where legislation states in part, "the <u>building official</u> shall make, or cause to be made, the necessary tests and investigations; or the <u>building</u> <u>official</u> shall accept duly authenticated reports from <u>approved agencies</u> in respect to the quality and manner of use of new materials or assemblies as provided for in <u>Section 104.2.3</u>", all of <u>IBC Section 104</u>, and <u>IBC Section 105.3</u>.
- 12.5 <u>Design loads</u> 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., <u>owner</u> or <u>RDP</u>).
- 12.6 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 <u>owner</u>.

13 Identification

- 13.1 The innovative product listed in **Section 1.1** is 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.
- 13.2 Additional technical information can be found at <u>greengirt.com</u>.

14 Review Schedule

- 14.1 This report is subject to periodic review and revision. For the latest version, visit <u>www.drjcertification.org</u>.
- 14.2 For information on the status of this report, please contact <u>DrJ Certification</u>.

15 Approved for Use Pursuant to United States and International Legislation Defined in Appendix A

15.1 SMARTci Exterior Wall Continuous Insulation System is 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:** <u>State legislatures</u> 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.
 - 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 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 <u>Federal Department of Justice</u> 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 <u>Title 18 US Code Section 242</u> 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 <u>stating the reasons</u> why the alternative was not approved, with reference to the specific legislation violated.
 - 1.2.3 The <u>federal government</u> and each state have a <u>public records act</u>. In addition, each state also has legislation that mimics the federal <u>Defend Trade Secrets Act 2016</u> (DTSA),⁴⁷ where providing test reports, engineering analysis, and/or other related IP/TS is subject to <u>prison of not more than ten years</u>⁴⁸ and/or a <u>\$5,000,000 fine or three (3) times the value of</u>⁴⁹ 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 <u>new materials</u>⁵⁰ that are not specifically provided for in any regulation, the <u>design strengths and</u> <u>permissible stresses</u> shall be established by <u>tests</u>, where <u>suitable load tests simulate the actual loads and</u> <u>conditions of application that occur</u>.
 - 1.2.5 The <u>design strengths and permissible stresses</u> of any structural material shall <u>conform</u> to the specifications and methods of design using accepted engineering practice.⁵¹
 - 1.2.6 The commerce of <u>approved sources</u> (i.e., registered PEs) is regulated by <u>professional engineering</u> <u>legislation</u>. Professional engineering <u>commerce shall always be approved</u> 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 <u>duly authenticated reports</u> from <u>approved agencies</u> in respect to the quality and manner of use of new materials or assemblies as provided for in <u>IBC Section 104.2.3</u>.⁵²





- 1.3 Approved⁵³ 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 <u>Division 35</u>, <u>Article 1</u>, <u>Chapter IX</u> 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 <u>Chapter IX</u> of the LAMC, such tests or certification shall be made by a <u>testing agency</u> 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.⁵⁴ The Superintendent of Building <u>Approved Testing Agency Roster</u> is provided by the Los Angeles Department of Building and Safety (LADBS). The Center for Building Innovation (CBI) Certificate of Approval License is <u>TA24945</u>. Tests and certifications found in a <u>DrJ Listing</u> are LAMC approved. In addition, the Superintendent of Building shall accept <u>duly authenticated reports</u> from <u>approved agencies</u> in respect to the quality and manner of use of new materials or assemblies as provided for in the <u>California Building Code, CBC Section 1707.1</u>.⁵⁵
- 1.4 Approved by Chicago: The Municipal Code of Chicago (MCC) states in pertinent part that an <u>approved</u> agency is a Nationally Recognized Testing Laboratory (NRTL) acting within its recognized scope and/or a certification body accredited by the <u>American National Standards Institute</u> (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 <u>research reports</u> from <u>approved sources</u> (i.e., MCC defined <u>approved agencies</u>).
- 1.5 Approved by New York City: The 2022 NYC Building Code (NYCBC) states in part that an approved agency shall be deemed⁵⁶ an approved testing agency via <u>ISO/IEC 17025</u> accreditation, an approved inspection agency via <u>ISO/IEC 17020 accreditation</u>, and an approved product evaluation agency via <u>ISO/IEC 17065</u> 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 agreement⁵⁷ (i.e., <u>ANAB</u>, <u>International Accreditation Forum</u> also known as IAF, etc.).
- 1.6 **Approved by Florida:** <u>Statewide approval</u> 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
 - 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.
 - 1.6.5 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:
 - 1.6.5.1 A certification mark, listing, or label from a commission-approved certification agency indicating that the product complies with the code.
 - 1.6.5.2 A test report from a commission-approved testing laboratory indicating that the product tested complies with the code.
 - 1.6.5.3 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.





- 1.6.5.4 A product evaluation report or certification based upon testing, comparative, or rational analysis, or a combination thereof, developed, signed, and sealed by a Florida professional engineer or Florida registered architect, which indicates that the product complies with the code.
- 1.6.5.5 A statewide product approval issued by the Florida Building Commission.
- 1.6.6 The <u>Florida Department of Business and Professional Regulation</u> (DBPR) website provides a listing of companies certified as a <u>Product Evaluation Agency</u> (i.e., EVLMiami 13692), a <u>Product Certification</u> <u>Agency</u> (i.e., CER10642), and as a <u>Florida Registered Engineer</u> (i.e., ANE13741).
- 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 <u>553.842</u> and <u>553.8425</u>.
- 1.8 Approved by New Jersey: Pursuant to the 2018 Building Code of New Jersey in <u>IBC Section 1707.1</u> <u>General</u>,⁵⁸ it states: "In the absence of approved rules or other approved standards, the building official shall accept duly authenticated reports from <u>approved agencies</u> 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 (<u>N.J.A.C. 5:23</u>)".⁵⁹ Furthermore N.J.A.C 5:23-3.7 states: "Municipal approvals of alternative materials, equipment, or methods of construction".
 - 1.8.1 **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.
 - 1.8.1.1 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.
 - 1.8.1.2 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.
 - 1.8.2 The <u>New Jersey Department of Community Affairs</u> has confirmed that technical evaluation reports, from any accredited entity listed by <u>ANAB</u>, 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"*.
- 1.9 **Approved by the Code of Federal Regulations Manufactured Home Construction and Safety Standards:** Pursuant to Title 24, Subtitle B, Chapter XX, <u>Part 3282.14</u>⁶⁰ and <u>Part 3280</u>,⁶¹ 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:
 - 1.9.1 "All construction methods shall be in conformance with accepted engineering practices."
 - 1.9.2 "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."
 - 1.9.3 "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 <u>new materials</u> that are not specifically provided for in this code, the <u>design strengths and permissible</u> <u>stresses</u> shall be established by tests.⁶²
 - 1.10.2 For innovative <u>alternatives</u> and/or methods of construction, the building official shall accept <u>duly</u> <u>authenticated reports</u> from <u>approved agencies</u> with respect to the quality and manner of use of <u>new</u> <u>materials or assemblies</u>.⁶³
 - 1.10.2.1 An <u>approved agency</u> is *"approved"* when it is <u>ANAB ISO/IEC 17065 accredited</u>. DrJ is in the <u>ANAB</u> <u>directory</u>.
 - 1.10.2.2 An <u>approved source</u> is *"approved"* when an <u>RDP</u> is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the <u>state legislature</u> via its professional engineering regulations.⁶⁴
 - 1.10.3 The <u>design strengths and permissible stresses</u> of any structural material...shall conform to the specifications and methods of design of accepted engineering practice performed by an <u>approved</u> <u>source</u>.⁶⁵
- 1.11 **Approval by International Jurisdictions:** The <u>USMCA</u> and <u>GATT</u> agreements provide for approval of innovative materials, designs, services, and/or methods of construction through the <u>Agreement on Technical</u> <u>Barriers to Trade</u> and the <u>IAF Multilateral Recognition Arrangement</u> (MLA), where these agreements:
 - 1.11.1 State that <u>conformity assessment procedures</u> (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.
 - 1.11.2 **Approved:** The <u>purpose of the MLA</u> 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.
 - 1.11.3 ANAB is an <u>IAF MLA</u> 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.⁶⁶
 - 1.11.4 Therefore, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent.⁶⁷
- 1.12 Approval equity is a fundamental commercial and legal principle.⁶⁸





Issue Date: June 30, 2015 Subject to Renewal: July 1, 2026

CBC and CRC Supplement to Report Number 1501-06

REPORT HOLDER: A2P, LLC

1 Evaluation Subject

1.1 SMARTci Exterior Wall Continuous Insulation System

2 Purpose and Scope

- 2.1 Purpose
 - 2.1.1 The purpose of this Report Supplement is to show SMARTci, recognized in Report Number 1501-06 has also been evaluated for compliance with the codes listed below.
- 2.2 Applicable Code Editions
 - 2.2.1 CBC—19, 22: California Building Code (Title 24, Part 2)
 - 2.2.2 CRC—19, 22: California Residential Code (Title 24, Part 2.5)
 - 2.2.3 CEC 19, 22: California Energy Code (Title 24, Part 6)

3 Conclusions

- 3.1 SMARTci, described in Report Number 1501-06, complies with the CBC and CRC and is subject to the conditions of use described in this supplement.
- 3.2 Where there are variations between the IBC and IRC and the CBC and CRC applicable to this report, they are listed here:
 - 3.2.1 CBC Section 104.6 replaces IBC Section 104.4.
 - 3.2.2 CBC Section 104.11 replaces IBC Section 104.2.3 and Section 104.2.3.2.
 - 3.2.3 CBC Section 1707.1 replaces IBC Section 1707.1.
 - 3.2.4 CBC Section 2306.3 replaces IBC Section 2306.3.
 - 3.2.5 CRC Section R104.6 replaces IBC Section R104.4.
 - 3.2.6 CRC Section R104.11 replaces IRC Section R104.2.2.

4 Conditions of Use

- 4.1 SMARTci, described in Report Number 1501-06, must comply with all of the following conditions:
 - 4.1.1 All applicable sections in Report Number 1501-06.
 - 4.1.2 The design, installation, and inspections are in accordance with additional requirements of CBC and CRC, as applicable.





Issue Date: April 25, 2022 Subject to Renewal: July 1, 2026

FBC Supplement to Report Number 1501-06

REPORT HOLDER: A2P, LLC

1 Evaluation Subject

1.1 SMARTci Exterior Wall Continuous Insulation System

2 Purpose and Scope

- 2.1 Purpose
 - 2.1.1 The purpose of this Report Supplement is to show SMARTci, recognized in Report Number 1501-06, has also been evaluated for compliance with the codes listed below as adopted by the Florida Building Commission.
- 2.2 Applicable Code Editions
 - 2.2.1 FBC-B—20, 23: Florida Building Code Building
 - 2.2.2 FBC-R—20, 23: Florida Building Code Residential

3 Conclusions

- 3.1 SMARTci, described in Report Number 1501-06, complies with the FBC-B and FBC-R and is subject to the conditions of use described in this supplement.
- 3.2 Where there are variations between the IBC and IRC and the FBC-B and FBC-R applicable to this report, they are listed here:
 - 3.2.1 FBC-B Section 104 is reserved.
 - 3.2.2 FBC-B Section 110.4 is reserved and replaces IBC Section 110.4.
 - 3.2.3 FBC-B Section 104.6 is reserved and replaces IBC Section 104.4.
 - 3.2.4 FBC-B Section 104.11 replaces IBC Section 104.2.3 and Section 104.2.3.2.
 - 3.2.5 FBC-B Section 105.3 replaces IBC Section 105.3.
 - 3.2.6 FBC-B Section 105.3.1 replaces IBC Section 105.3.1.
 - 3.2.7 FBC-B Section 110.3 replaces IBC Section 110.3.
 - 3.2.8 FBC-B Section 1405.2 replaces IBC Section 1404.2.
 - 3.2.9 FBC-B Section 1707.1 replaces IBC Section 1707.1.
 - 3.2.10 FBC-B Section 2306.1 replaces IBC Section 2306.1.
 - 3.2.11 FBC-B Section 2306.3 replaces IBC Section 2306.3.
 - 3.2.12 FBC-B Section 2306.4 replaces IBC Section 2306.4.
 - 3.2.13 FBC-B Section 2306.5 replaces IBC Section 2306.5.
 - 3.2.14 FBC-R Section R104 and Section R109 are reserved.
 - 3.2.15 FBC-R Section R316.3 replaces IRC Section R303.3.





- 3.2.16 FBC-R Section R316.5.12 replaces IRC Section R303.5.12.
- 3.2.17 FBC-R Section R703.2 replaces IRC Section R703.2.

4 Conditions of Use

- 4.1 SMARTci, described in Report Number 1501-06, must comply with all of the following conditions:
 - 4.1.1 All applicable sections in Report Number 1501-06.
 - 4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.



CBI

Notes

- ¹ For more information, visit <u>dricertification.org</u> or call us at 608-310-6748.
- ² In the context of building science, Hygrothermal refers to the combined effect of moisture and heat.
- ³ Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of <u>TPI 1</u>, the <u>NDS</u>, <u>AISI S202</u>, <u>US</u> professional engineering law, <u>Canadian building code</u>, <u>Canada professional engineering law</u>, <u>Qualtim External Appendix A</u>: <u>Definitions/Commentary</u>, <u>Qualtim External Appendix B</u>: <u>Project/Deliverables</u>, <u>Qualtim External Appendix C</u>: <u>Intellectual Property and Trade Secrets</u>, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.
- 4 <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702</u>
- ⁵ 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 <u>https://www.justice.gov/atr/mission</u> and <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3</u>
- https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-andtests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests
- 8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-andtests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B %20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%2 0and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.
- 9 <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2</u>
- ¹⁰ <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency</u>
- 11 https://up.codes/viewer/mississippi/ibc-2024/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 <u>federal government</u> and each state have a <u>public records act</u>. To follow DTSA and comply state public records and trade secret legislation requires approval through <u>ANAB ISO/IEC 17065 accredited certification bodies</u> or <u>approved sources</u>. For more information, please review this website: <u>Intellectual Property and Trade Secrets</u>.
- 13 <u>https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineeringboards-in-each-state-archive/</u>
- 14 https://www.cbitest.com/accreditation/

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

- 16 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-
- administration#105.3.1
- ¹⁷ <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1</u>
- ¹⁸ <u>https://iaf.nu/en/about-iaf-</u>

mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20 and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of %20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

- ¹⁹ True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
- 20 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission
- ²¹ Unless otherwise noted, the links referenced herein use un-amended versions of the <u>2024 International Code Council (ICC)</u> 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the <u>IBC 2024</u> and the <u>IRC 2024</u> are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.
- ²² References to NFPA 285-12 in this report are code compliant through the 2018 version of the IBC.
- ²³ All references to the CBC and CRC are the same as the 2024 IBC and 2024 IRC unless otherwise noted in the CBC and CRC Supplement at the end of this report.
- ²⁴ All references to the FBC-B and FBC-R are the same as the 2024 IBC and 2024 IRC unless otherwise noted in the Florida Supplement at the end of this report.
- ²⁵ <u>https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled</u></u>
- 26 2021 IECC Section C402.5.1
- 27 2021 IECC Section C402.5.1.4
- 28 <u>https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4</u>
- ²⁹ <u>https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-</u>

3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20liv able%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the% 20various%20trades





30 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%20 engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur 2015 IBC Section 1609.4.3 and 2015 IBC Section 1609.6.4.4.1 31 32 2021 IRC Section R316.5.12 33 2021 IECC Section C402.5.1 34 2021 IRC Section R316.3 35 2021 IECC Section C402.5.1 36 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. 37 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH 38 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 2015 IBC Section 1609.4.3 and 2015 IBC Section 1609.6.4.4.1 39 40 2021 IRC Section R316.5.12 41 2021 IECC Section C402.5.1 42 2021 IRC Section R316.3 43 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-andadministration#104.11 44 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 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies. 45 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1 46 Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements. 47 http://www.drjengineering.org/AppendixC AND https://www.law.cornell.edu/uscode/text/18/part-l/chapter-90 48 https://www.law.cornell.edu/uscode/text/18/1832#:~:text=imprisoned%20not%20more%20than%2010%20years 49 https://www.law.cornell.edu/uscode/text/18/1832#:~:text=Any%20organization%20that,has%20thereby%20avoided 50 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2 51 IBC 2024, Section 1706.1 Conformance to Standards 52 IBC 2024, Section 1707 Alternative Test Procedure, 1707.1 General 53 See Section 11 for the distilled building code definition of Approved. 54 Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES 55 https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707.1 56 New York City, The Rules of the City of New York, § 101-07 Approved Agencies 57 New York City, The Rules of the City of New York, § 101-07 Approved Agencies 58 2018: https://up.codes/viewer/new_jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1 AND 2021: https://up.codes/viewer/new_jersey/ibc-2021/chapter/17/special-inspections-and-tests#1707.1 AND 2021: https://up.codes/viewer/new_jersey/ibc-2021/chapter/17/special-inspectia inspections-and-tests#1707.1 59 https://www.nj.gov/dca/divisions/codes/codreg/ucc.html 60 https://www.ecfr.gov/current/title-24/section-3282.14 61 https://www.ecfr.gov/current/title-24/part-3280 62 2024 IBC Section 1706 Design Strengths of Materials (https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706) AND 2024 IBC Section 1706.2 New Materials (https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2) Adopted law pursuant to IBC model code language 1706.2. 63 IBC 2024, Section 1707 Alternative Test Procedure, 1707.1 General (https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1) Adopted law pursuant to IBC model code language 1707.1. 64 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineeringboards-in-each-state-archive/ 65 IBC 2024, Section 1706 Design Strengths of Materials and IBC 2024 Section 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1. 66 IAF MLA: https://iaf.nu/en/about-iafmla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20 and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of %20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope 67 True for all ANAB accredited product evaluation agencies and all International Trade Agreements. 68 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission