Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1909-03

Issue Date: November 23, 2020

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Subject to Renewal: January 1, 2027

Piazza Stone® Masonry Units

Trade Secret Report Holder:

Piazza Stone, LLC

Phone: 706-651-1210 Website: www.piazzastone.com Email: info@piazzastone.com

CSI Designations:

DIVISION: 04 00 00 - MASONRY

Section: 04 42 00 - Exterior Stone Cladding
Section: 04 43 00 - Stone Masonry
Section: 04 43 13 - Stone Masonry Veneer
Section: 04 70 00 - Manufactured Masonry
Section: 04 73 00 - Manufactured Stone Masonry

1 Innovative Product Evaluated[1]

1.1 Piazza Stone®

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1** and **Figure 2**.

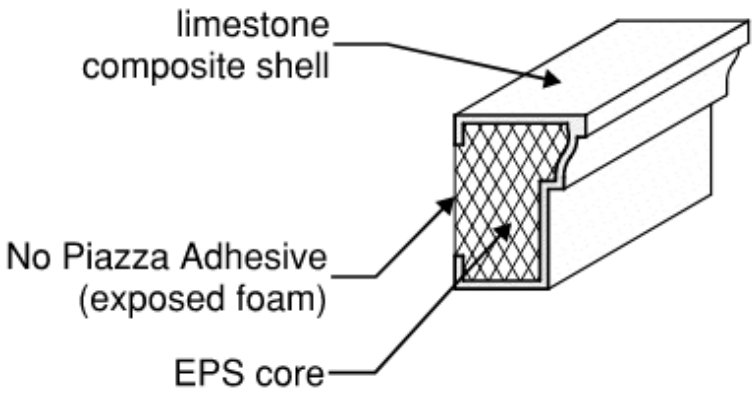

Figure 1. Piazza Stone® for General Applications

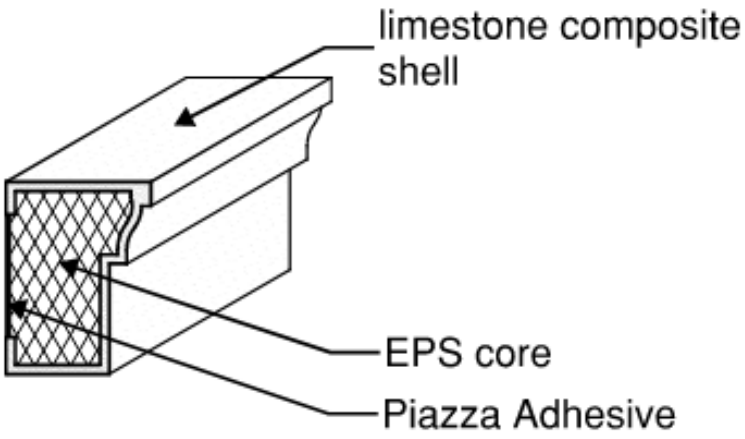

Figure 2. Piazza Stone® for NFPA 285 Compliant Applications

2.2 Piazza Stone® is a non-structural architectural stone decorative façade product consisting of an Expanded Polystyrene (EPS) foam core encased in a limestone composite shell.

2.2.1 The EPS foam conforms to ASTM C578, Type I.

2.2.2 The limestone composite shell is cast from a single-component, polymer-modified cementitious mix that includes the following materials:

2.2.2.1 Portland cement, in accordance with ASTM C150, Type I or III

2.2.2.2 Coarse aggregates, in accordance with ASTM C33, including granite, quartz, or limestone

2.2.2.3 Fine aggregates, in accordance with ASTM C33, including manufactured or natural sand

2.2.2.4 Inorganic iron oxide pigments, in accordance with ASTM C979, except carbon black pigments

2.3 *Material Availability*

2.3.1 Piazza Stone® is available in a variety of sizes and profiles. Applications include:

2.3.1.1 Cornices

2.3.1.2 Columns

2.3.1.3 Panels

2.3.1.4 Pilasters

2.3.1.5 Balustrades

2.3.2 For custom shapes, contact the manufacturer at info@piazzastone.com.

2.4 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.

3 Definitions[2]

3.1 New Materials[3] 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.[4] The design strength and permissible stresses shall be established by tests[5] and/or engineering analysis.[6]

3.2 Duly authenticated reports[7] and research reports[8] are test reports and related engineering evaluations that are written by an approved agency[9] and/or an approved source.[10]

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, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[11]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[12]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[13] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[14] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[15] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[16]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (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.[17] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[18] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[19]

4 Applicable Local, State, and Federal Approvals; Standards; Regulations[20]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, St. Louis County, Texas Department of Insurance, and Wichita.[21]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[22]

4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[23] and Part 3280[24] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Regulations*

4.2.1 *IBC – 18, 21, 24: International Building Code®*

4.2.2 *IRC – 18, 21, 24: International Residential Code®*

4.2.3 *FBC-B – 20, 23: Florida Building Code[25] – Building (FL 35386)*

4.2.4 *FBC-B – 20, 23: Florida Building Code[25] – Residential (FL 35386)*

4.3 *Standards*

4.3.1 *ASTM C33: Standard Specification for Concrete Aggregates*

4.3.2 *ASTM C150: Standard Specification for Portland Cement*

4.3.3 *ASTM C231: Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method*

4.3.4 *ASTM C426: Standard Test Method for Linear Drying Shrinkage of Concrete Masonry Units*

4.3.5 *ASTM C578: Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation*

4.3.6 *ASTM C666: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing*

4.3.7 *ASTM C979: Standard Specification for Pigments for Integrally Colored Concrete*

4.3.8 *ASTM C1194: Standard Test Method for Compressive Strength of Architectural Cast Stone*

4.3.9 *ASTM C1195: Standard Test Method for Absorption of Architectural Cast Stone*

4.3.10 *ASTM C1364: Standard Specification for Architectural Cast Stone*

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

4.3.12 *ASTM E488: Standard Test Methods for Strength of Anchors in Concrete Elements*

4.3.13 *ASTM E831: Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis*

4.3.14 *NFPA 285: Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components*

4.3.15 *TMS 402: Building Code for Masonry Structures*

4.3.16 *TMS 602: Specification for Masonry Structures*

5 Listed[26]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), an approved agency (i.e., CBI and DrJ), and/or and approved source (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 Piazza Stone® is an architectural stone composite product complying with IBC Section 1404 and IRC Section R703.

6.1.2 Piazza Stone® may be used in buildings of Type I-V construction in accordance with IBC Chapter 6.

6.1.3 Piazza Stone® products shall be installed using the Piazza Stone® Installation System over concrete, masonry, or cold-formed steel studs.

6.2 *Compressive Strength*

6.2.1 The Piazza Stone® limestone composite shell was evaluated to assess its compressive strength in accordance with ASTM C1194 as specified in ASTM C1364 Section 5.1.

6.2.2 Measured compressive strength of the Piazza Stone® limestone composite shell is provided in **Table 1**.

Table 1. Compressive Strength[1]

Product	Average Compressive Strength (psi)	Minimum Specified Compressive Strength (psi)
Piazza Stone®	6,850	6,500

SI: 1 psi = 0.00689 MPa
1. The limestone composite shell tested in accordance with ASTM C1194.

6.3 *Water Absorption*

6.3.1 The Piazza Stone® limestone composite shell was evaluated to assess its performance with regard to water absorption in accordance with ASTM C1195 as specified in ASTM C1364 Section 5.2

6.3.2 Measured water absorption of the Piazza Stone® limestone composite shell is provided in **Table 2**.

Table 2. Water Absorption[1]

Product	Average Absorption Mass (%)	Maximum Absorption (%)
Piazza Stone®	2.7	6.0

1. The limestone composite shell tested in accordance with ASTM C1195.

6.4 *Air Content*

6.4.1 The Piazza Stone® limestone composite shell was evaluated for sufficient air content in accordance with ASTM C231 as specified in ASTM C1364 Section 5.3.

6.4.2 Measured air content of the Piazza Stone® limestone composite shell is provided in **Table 3**.

Table 3. Air Content[1]

Product	Average Air Content (%)
Piazza Stone®	9.5

1. The limestone composite shell tested in accordance with ASTM C231.

6.5 *Freeze-Thaw Durability*

6.5.1 The Piazza Stone® limestone composite shell was evaluated to assess Cumulative Percent Mass Loss (CPWL) after experiencing rapidly repeated cycles of freezing and thawing, in accordance with ASTM C666 Procedure A per ASTM C1364 Section 5.5.

6.5.2 Measured CPWL of the Piazza Stone® limestone composite shell is provided in **Table 4**.

Table 4. Freeze-Thaw Durability[1]

Product	CPWL (%)
Piazza Stone®	0.5

1. The limestone composite shell tested in accordance with ASTM C666.

6.6 *Linear Drying Shrinkage*

6.6.1 Piazza Stone® limestone composite shell was evaluated in accordance with ASTM C426 to determine linear shrinkage per ASTM C1364 Section 7.3.

6.6.2 Measured linear drying shrinkage of the Piazza Stone® limestone composite shell is provided in **Table 5**.

Table 5. Linear Shrinkage[1]

Product	Average Linear Shrinkage (%)
Piazza Stone®	0.150
1. The limestone composite shell tested in accordance with ASTM C426.	

6.7 *Linear Thermal Expansion*

6.7.1 The Piazza Stone® limestone composite shell was evaluated in accordance with ASTM E831 to determine the coefficient of thermal expansion.

6.7.2 Measured coefficient of thermal expansion of the Piazza Stone® limestone composite shell is provided in **Table 6**.

Table 6. Thermal Expansion[1]

Product	Average Coefficient of Thermal Expansion (in/in°F)
Piazza Stone®	3.165×10^{-6}
1. The composite shell tested in accordance with ASTM E831.	

6.8 *Surface Burning Characteristics*

6.8.1 The Piazza Stone® limestone composite shell was evaluated in accordance with ASTM E84 to determine its surface burning characteristics.

6.8.2 Flame spread and smoke developed indexes for Piazza Stone® limestone composite shell are shown in **Table 7**.

Table 7. Surface Burning Characteristics[1]

Product	Flame Spread	Smoke Developed	Classification
Piazza Stone®	< 25	< 450	A
1. Product tested in accordance with ASTM E84.			

6.9 *Thermal Barrier Requirements*

6.9.1 For exterior applications, Piazza Stone® shall be separated from the interior of a building by an approved thermal barrier in accordance with IBC Section 2603.4.

6.9.2 For interior applications, Piazza Stone® is approved for use without a thermal barrier when the limestone composite shell layer over the foam is a minimum of 1" thick per IBC Section 2603.4.1.1.

6.10 *Vertical and Lateral Fire Propagation*

6.10.1 Piazza Stone® was evaluated to assess performance with regard to vertical and lateral fire propagation in accordance with NFPA 285 and IBC Section 2603.5.5.

6.10.2 The wall assemblies listed in **Table 8** are approved for use in buildings of Type I-V construction.

6.10.3 See **Figure 3** for an approved NFPA 285-compliant window header/perimeter detail.

Table 8. Approved NFPA 285 Wall Assemblies[1]

Wall Component	Materials
Base Wall System Use any items 1 - 3	1. Cast concrete walls 2. CMU concrete walls 3. Steel studs – 18-gauge (minimum), 3 5/8" (minimum), 16" o.c. (maximum)
Floor Line Firestopping	1. 4", 4 pcf mineral fiber (mineral wool) friction fit or installed with z-clips
Cavity Insulation Use any item 1 - 4	1. None 2. Any noncombustible insulation per ASTM E136 3. Any mineral fiber or mineral wool (faced or unfaced) 4. Any fiberglass (faced or unfaced)
Exterior Sheathing	1. One (1) layer 1/2" or thicker exterior type gypsum sheathing
WRB Over Sheathing	1. Piazza Approved Air and Weather Barrier
Steel Channel for Exterior Insulation	1. 2" (maximum) vertical steel channel (Piazza-Z) 16" o.c. (maximum)
Exterior Insulation[2] Use item 1 or 2	1. 2" (maximum) DuPont™ Styrofoam™ Type IV or Type X 2. 2" (maximum) Owens Corning® Foamular® 250 Type IV or Type X
Horizontal Track	1. 3/4" (maximum) horizontal steel track (Piazza track) to attach Piazza Stone®
Exterior Cladding[3]	1. Piazza Stone® a. Foam Core: 12" (maximum) ACH 1 pcf EPS for wall area b. Masonry Shell: 5/8" (minimum) Piazza Stone® c. Piazza Adhesive (1/4" thickness)
Joint Caulk	1. Pecora 890FTS – TXTR (with mineral wool backer material)
Special Condition	1. Header/jamb/sill shall conform to the design shown in **Figure 3**.

SI: 1 in = 25.4 mm

1. The assemblies and combinations created herein, and the various substitutions of products, are based on testing and professional thermal engineering analysis by Priest & Associates Consulting, LLC.
2. Exterior insulation is attached using Piazza-Z clips. Piazza Stone® is attached using clips and track to Piazza-Z.
3. Any decorative piece of any reasonable shape may be allowed as long as either condition below is met:
   a. Per foot does not exceed 3,456 cubic inches per foot of length.
   b. Per foot cross sectional area does not exceed 288 square inches.

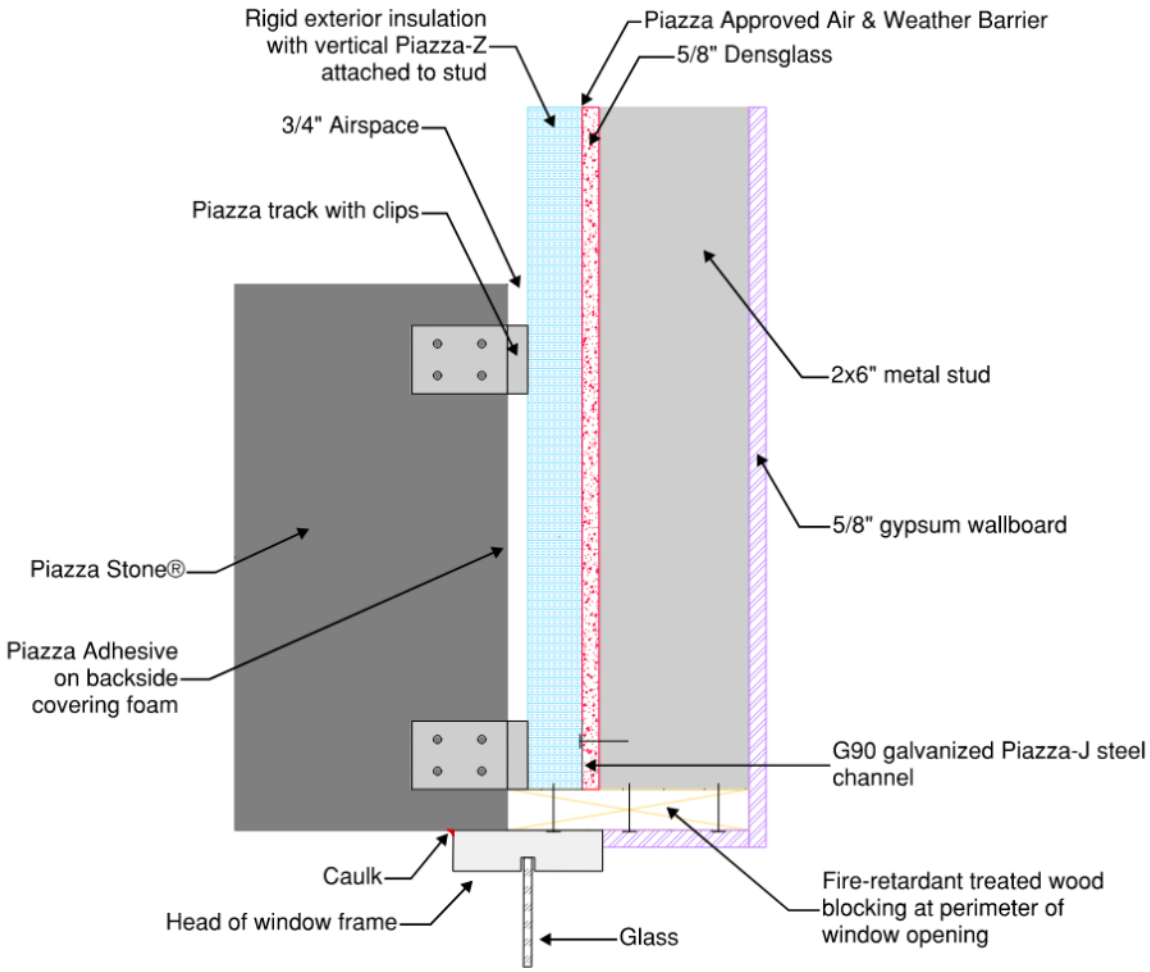

Figure 3. Window Header/Perimeter Detail for NFPA 285 Compliance

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

7 Certified Performance[27]

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.[28]

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.[29]

8 Regulatory Evaluation and Accepted Engineering Practice

8.1 Piazza Stone® was evaluated to determine the following:

8.1.1 Physical properties of limestone composite shell in accordance with IBC Section 2103.1, including compressive strength, absorption, linear drying shrinkage, air content, and freeze-thaw.

8.1.2 Use as an exterior wall covering[30] in accordance with IBC Section 1404 and IRC Section R703.

8.1.3 Use an interior wall and ceiling finish[31] material in accordance with IBC Section 803 and IBC Section 2603.4.1.1.

8.1.4 Use as a masonry construction material in accordance with IBC Section 2103.1 and IRC Section R606.2.

8.1.5 Performance for use in buildings of Type I-V in accordance with IBC Chapter 6.

8.1.6 Performance in accordance with ASTM E84 for flame spread and smoke development ratings in accordance with IBC Section 2603.3, IBC Section 2603.5.4, and IRC Section R302.9.

8.1.7 Performance with regard to thermal barrier requirements in accordance with IBC Section 2603.4.

8.1.8 Performance with regard to vertical and lateral fire propagation in accordance with IBC Section 2603.5.5.

8.1.9 Use as a part of an NFPA 285 wall assembly in accordance with IBC Section 1402.5 and IBC Section 2603.5.5.

8.2 Piazza Stone® was evaluated for installation over concrete, masonry, or cold-formed steel studs using the Piazza Stone® Installation System.

8.2.1 For mechanical attachment, fasteners must be installed in accordance with **Section 9** and the manufacturer installation instructions.

8.2.2 Connection of Piazza Stone® elements to substrate requires an engineered design in accordance with **Section 12**.

8.3 The ability of the fastening system to support the gravity and transverse loads is outside the scope of this report.

8.4 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[32] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[33] respectively.

8.5 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope 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 *General*

9.3.1 Piazza Stone® shall be installed with the Piazza Stone® Installation System in accordance with the engineered design, manufacturer product data, and approved shop drawings.

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

9.3.3 All other installation and flashing details germane to the project shall be in accordance with the applicable building code and manufacturer installation instructions.

9.3.4 Piazza Stone® shall be installed over substrates of concrete, masonry, or cold-formed steel studs.

9.3.5 Substrates shall be flat within 1/4" in 4' 0", and deviations shall be corrected before beginning installation.

9.3.6 Installation shall be performed by an applicator certified by the manufacturer.

9.3.7 Installation is subject to conditions of use set forth in **Section 12** of this report.

9.4 *NFPA 285-Compliant Installation Method*

9.4.1 The wall assembly shall comply with the vertical and lateral fire propagation requirements of **Section 6.10**.

9.4.2 The exposed EPS on the backside of the units shall be completely covered and sealed using Piazza Adhesive, as shown in **Figure 2**. The Piazza Adhesive shall be a continuous 1/4" thick coat and shall be applied using a trowel.

9.4.2.1 Preparation of the Piazza Adhesive shall be in accordance with manufacturer instructions.

9.4.3 The adhesive shall be set for six to eight hours after applying to the Piazza Stone® units.

9.4.4 Piazza Track System is attached to the substrate, and then Piazza Stone® units shall be positioned and mechanically attached to the clips according to the approved shop drawings.

9.4.5 *Fasteners:*

9.4.5.1 Fasteners for attaching the Piazza Stone® clips to the Piazza Stone® units shall be cadmium-coated Hilti Kwik Con II 3/16" or 1/4" diameter x 1 1/4" length anchors, or equal.

9.4.5.1.1 Longer fasteners are permitted to be used.

9.4.5.2 All fasteners shall be compliant with ASTM B117 – 1,000 Hour Salt Spray.

9.4.5.3 All fasteners shall be in accordance with manufacturer product data and approved shop drawings.

9.4.6 Maintain a 3/8" to 1" joint spacing between units.

9.4.7 Caulk joints using Pecora 890FTS-TXTR or equivalent.

9.5 *Adhesion Installation Method*

9.5.1 Substrate surfaces shall be clean, dry, structurally sound, and free of paint, efflorescence, grease, oil, form release agents, and curing compounds.

9.5.2 Piazza Adhesive shall be mixed according to manufacturer instructions.

9.5.3 Piazza Adhesive shall be applied directly to the Piazza Stone® units, not the substrate.

9.5.4 Use ribbon and dab method. Apply mixed Piazza Adhesive in a ribbon of approximately 2" wide by 3/8" thick to entire perimeter of Piazza Stone® unit using a trowel. Apply dabs of 3/8" to 5/8" thickness by 4" in diameter approximately 8" o.c., both vertically and horizontally, over entire Piazza Stone® unit.

9.5.5 Units shall be immediately placed on the substrate.

9.5.6 The Piazza Stone® units shall be set for six to eight hours after applying adhesive.

9.5.7 Maintain a 3/8" to 1" joint spacing between units.

9.5.8 Caulk joints using Pecora 890FTS-TXTR or equivalent.

9.6 *Mechanical Installation Method Where NFPA 285 Compliance is Not Required*

9.6.1 The exposed EPS on the backside of the units does not need to be covered and sealed using Piazza Adhesive, as shown in **Figure 1**.

9.6.2 *Method 1:* Piazza Track System is attached to the substrate, and then Piazza Stone® units shall be positioned and mechanically attached to the clips according to the approved shop drawings.

9.6.3 *Method 2:* PZ Connectors are attached to the substrate, and then Piazza Stone® units shall be positioned and mechanically attached according to the approved shop drawings.

9.6.4 *Fasteners:*

9.6.4.1 Fasteners for attaching the Piazza Stone® clips to the Piazza Stone® units shall be cadmium-coated Hilti Kwik Con II $^{3}/_{16}$" or $^{1}/_{4}$" diameter x $1^{1}/_{4}$" length anchors, or equal. Longer fasteners are allowed.

9.6.4.2 All fasteners must meet ASTM B117 – 1,000 Hour Salt Spray.

9.6.4.3 All fasteners must be in accordance with manufacturer product data and approved shop drawings.

9.6.5 Maintain a $^{3}/_{8}$" to 1" joint spacing between units.

9.6.6 Caulk joints using Pecora 890FTS-TXTR or equivalent.

9.6.7 A standard mechanical installation example without rigid insulation is shown in **Figure 4**.

9.6.8 To meet energy code requirements, Piazza-Z can be used vertically with rigid insulation.

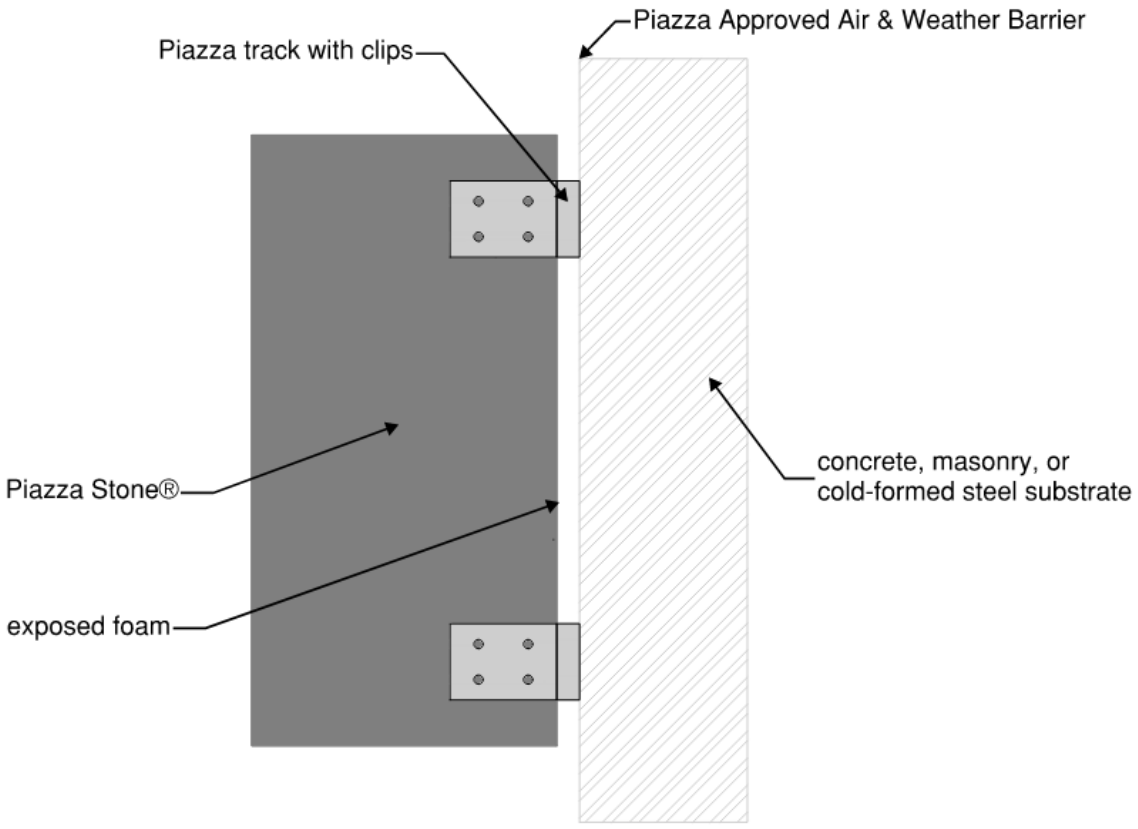

Figure 4. Example of Mechanical Attachment of Piazza Stone® to Substrate

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 Compressive strength in accordance with ASTM C1194 per ASTM C1364, Section 5.1

10.1.2 Water absorption in accordance with ASTM C1195 per ASTM C1364, Section 5.2

10.1.3 Air content in accordance with ASTM C231 per ASTM C1364, Section 5.3

10.1.4 Freezing and thawing resistance in accordance with ASTM C666 per ASTM C1364, Section 5.5

10.1.5 Linear shrinkage in accordance with ASTM C426 per ASTM C1364, Section 7.3

10.1.6 Thermal expansion in accordance with ASTM E831

10.1.7 Surface burning characteristics in accordance with ASTM E84

10.1.8 Exterior wall fire testing in accordance with NFPA 285

10.1.9 Engineering analysis assessing the substitution of products within the approved NFPA 285

10.1.10 Tensile and shear strength of post-installed anchors in accordance with ASTM E488

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 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 being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 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.[34]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for Piazza Stone® on the DrJ Certification website.

11 Findings

11.1 As outlined in **Section 6**, Piazza Stone® 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 duly authenticated report and the manufacturer installation instructions, Piazza Stone® shall be approved for the following applications:

11.2.1 Use as an exterior wall covering[35] in accordance with IBC Section 1404 and IRC Section R703 when attached to the wall using the Piazza Stone® Installation System.

11.2.2 Use an interior wall and ceiling finish[36] material in accordance with IBC Section 803 and IBC Section 2603.4.1.1, when attached to the wall using the Piazza Stone® Installation System.

11.2.3 Use as a masonry construction material in accordance with IBC Section 2103.1 and IRC Section R606.2.

11.2.4 Use in buildings of Type I-V in accordance with IBC Chapter 6.

11.2.5 Use as a part of an NFPA 285 wall assembly in accordance with IBC Section 1402.5 and IBC Section 2603.5.5.

11.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Piazza Stone, LLC.

11.4 IBC Section 104.2.3[37] (IRC Section R104.2.2[38] and IFC Section 104.2.3[39] 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.

11.5 **Approved:**[40] Building regulations require that the building official shall accept duly authenticated reports.[41]

11.5.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.5.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.5.3 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. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.6 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.7 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[42]

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 As listed herein, Piazza Stone® shall be used:

12.3.1 On exterior or interior walls with a substrate of concrete, masonry, or cold-formed steel studs capable of supporting the imposed loads as determined by architect or engineer of record.

12.4 Connection of Piazza Stone® elements to substrate requires an engineered design. Refer to manufacturer approved shop drawings.

12.5 For interior applications, the foam must be covered with a minimum of 1" Piazza Stone® limestone composite shell on all exposed sides in accordance with IBC Section 2603.4.1.1.

12.6 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:

12.6.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.6.2 This report and the installation instructions shall be submitted at the time of permit application.

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

12.6.4 At a minimum, this innovative product shall be installed per **Section 9**.

12.6.5 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.6.6 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.

12.6.7 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 IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.7 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or 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 Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

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

12.9 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

13 Identification

13.1 Piazza Stone®, as 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 www.piazzastone.com.

14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.

Issue Date: December 3, 2020
Subject to Renewal: January 1, 2027

FBC Supplement to Report Number 1909-03

REPORT HOLDER: Piazza Stone, LLC

1 Evaluation Subject

1.1 Piazza Stone®

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Report Supplement is to show Piazza Stone®, recognized in Report Number 1909-03, 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 (FL 35386)*

2.2.2 *FBC-R—20, 23: Florida Building Code – Residential (FL 35386)*

3 Conclusions

3.1 Piazza Stone®, described in Report Number 1909-03, 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 Chapter 6 replaces IBC Chapter 6.

3.2.9 FBC-B Section 1405 replaces IBC Section 1404.

3.2.10 FBC-B Section 1707.1 replaces IBC Section 1707.1.

3.2.11 FBC Section 2103.1 replaces IBC Section 2103.1.

3.2.12 FBC-B Section 2306.1 replaces IBC Section 2306.1.

3.2.13 FBC-B Section 2306.3 replaces IBC Section 2306.3.

3.2.14 FBC-B Section 2603.3 replaces IBC Section 2603.3.

3.2.15 FBC-B Section 2603.4 replaces IBC Section 2603.4.

3.2.16 FBC-B Section 2603.5.4 replaces IBC Section 2603.5.4.

3.2.17 FBC-B Section 2603.5.5 replaces IBC Section 2603.5.5.

3.2.18 FBC-R Section R104 and Section R109 are reserved.

3.2.19 FBC-R Section R302.9 replaces IRC Section R302.9.

3.2.20 FBC-R Section R703 replaces IRC Section R703.

4 Conditions of Use

4.1 Piazza Stone®, described in Report Number 1909-03, must comply with all of the following conditions:

4.1.1 All applicable sections in Report Number 1909-03.

4.1.2 The design, installation, and inspections are in accordance with additional requirements of FBC-B Chapter 16 and Chapter 17, as applicable.

Notes

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

2 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, 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.

3 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

4 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

5 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

6 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

7 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#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%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

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

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

13 https://www.cbitest.com/accreditation/

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

15 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

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

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

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

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

20 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 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.

21 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

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

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

25 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.

26 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 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

27 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4

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

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

30 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#exterior_wall_covering

31 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#interior_wall_and_ceiling_finish

32 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.

33 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

34 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

35 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#exterior_wall_covering

36 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#interior_wall_and_ceiling_finish

37 2021 IBC Section 104.11

38 2021 IRC Section R104.11

39 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-and-administration#104.11

40 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.

41 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

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