



Listing and Technical Evaluation Report™

A Duly Authenticated Report from an Approved Agency

Report No: 1312-01



Issue Date: February 5, 2014

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Westlake Royal Stone Adhered Masonry Veneer Applications Over Continuous Insulation

Trade Secret Report Holder:
Westlake Royal Stone, LLC

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Additional Listees:

Eldorado Stone® 350 Tower Rd American Canyon, CA 94503	Dutch Quality Stone® 350 Tower Rd American Canyon, CA 94503	Cultured Stone® 350 Tower Rd American Canyon, CA 94503	StoneCraft Industries® 8300 County Rd 189 Holmesville, OH 44633
Camino Martin 2500 Ranchos Dos Palmas Baja California, Mexico 22650	18012 Dover Rd Mount Eaton, OH 44659	8300 County Rd 189 Holmesville, OH 44633	181 Antrim Commons Dr Greencastle, PA 17225-1621
181 Antrim Commons Dr Greencastle, PA 17225-1621	8300 County Rd 189 Holmesville, OH 44633	590 Ecology Ln Chester, SC 29706	

CSI Designations:

DIVISION: 04 00 00 - MASONRY

Section: 04 70 00 - Manufactured Masonry

Section: 04 73 00 - Manufactured Stone Masonry

1 Innovative Products Evaluated¹

1.1 Westlake Royal Stone Products:

- 1.1.1 Eldorado Stone Adhered Masonry Veneer
- 1.1.2 Dutch Quality Stone Adhered Masonry Veneer
- 1.1.3 Cultured Stone Adhered Masonry Veneer
- 1.1.4 StoneCraft Industries Adhered Masonry Veneer

2 Product Description and Materials

2.1 The innovative products evaluated in this report are shown in **Figure 1**.



Figure 1. Examples of Westlake Royal Stone Products Product Finishes

2.2 Westlake Royal Stone Products are manufactured, precast, concrete veneer products made from Portland cement, aggregate, water, admixtures, and coloring used as adhered, non-bearing exterior veneer or as an interior finish.

2.3 Westlake Royal Stone Products have the following characteristics:

- 2.3.1 Color and texture similar to various stone or brick surfaces (Examples are shown in **Figure 1**).
- 2.3.2 Patterns have a maximum per unit area of 720 square inches (0.465 m²).
- 2.3.3 Patterns have a maximum per unit dimension of 36" (914 mm).
- 2.3.4 Patterns have a maximum average thickness of 1.65" (42 mm).
- 2.3.5 Patterns have a nominal oven dry density less than 105 lb/ft³ (1,682 kg/m³) and a maximum saturated weight not to exceed 15 lb/ft² (73.2 kg/m²).
- 2.3.6 The total cladding system weight, including the mortar setting bed, lath, and scratch coat, is a maximum of 25 lb/ft² (122 kg/m²) when fully saturated.
- 2.3.7 Product profiles and information is available in the appendices:
 - 2.3.7.1 **Appendix A.** Eldorado Stone
 - 2.3.7.2 **Appendix B.** Dutch Quality Stone
 - 2.3.7.3 **Appendix C.** Cultured Stone
 - 2.3.7.4 **Appendix D.** Stone Craft

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

3 Definitions²

- 3.1 New Materials³ 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 tests⁵ and/or engineering analysis.⁶
- 3.2 Duly authenticated reports⁷ and research reports⁸ are test reports and related engineering evaluations that are written by an approved agency⁹ and/or an approved source.¹⁰
 - 3.2.1 This report utilizes 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 secrets under the regulation, 18.U.S.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 ANAB¹³ ISO/IEC 17025 and ISO/IEC 17020 accredited.
- 3.6 The regulatory authority shall enforce¹⁴ 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 writing¹⁵ 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; Regulations²⁰

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 3282.14²³ and Part 3280²⁴ 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 Code²⁵ – Building (FL 41520)*
- 4.2.4 *FBC-R—20, 23: Florida Building Code²⁵ – Residential (FL 41520)*



4.3 Standards

- 4.3.1 *ACI 318: Building Code Requirements for Structural Concrete*
- 4.3.2 *AISI S100: North American Specification for the Design of Cold-formed Steel Structural Members*
- 4.3.3 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*
- 4.3.4 *ANSI/AWC SDPWS: Special Design Provisions for Wind and Seismic*
- 4.3.5 *ANSI/AWC WFCM: Wood Frame Construction Manual for One- and Two-Family Dwellings*
- 4.3.6 *ASCE/SEI 7: Minimum Design Loads and Associated Criteria for Buildings and Other Structures*
- 4.3.7 *ASTM C90: Standard Specification for Loadbearing Concrete Masonry Units*
- 4.3.8 *ASTM C150: Standard Specification for Portland Cement*
- 4.3.9 *ASTM C578: Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation*
- 4.3.10 *ASTM C1063: Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster*
- 4.3.11 *ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*
- 4.3.12 *ASTM D5206: Standard Test Method for Windload Resistance of Rigid Plastic Siding*
- 4.3.13 *ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference*
- 4.3.14 *ASTM F1667: Standard Specification for Driven Fasteners: Nails, Spikes, and Staples*

5 Listed²⁶

- 5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or an approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., 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 Westlake Royal Stone Products are used as an exterior wall covering in accordance with the applicable sections of IBC Chapter 14, IBC Chapter 25, and IRC Section R703. They are installed over wood or steel framed walls and Wood Structural Panels (WSP) capable of supporting the imposed loads in accordance with IBC Section 1609 and IRC Section R301.2.1, including all required transverse wind loads.
- 6.2 Westlake Royal Stone Products are used as an exterior wall covering installed over wood-framed or steel framed walls: (1) where the WSP is over sheathed with continuous insulation, or (2) onto masonry or concrete walls that are sheathed with continuous insulation. The maximum foam thicknesses for various framing and fastener types are as shown in **Table 1**, **Table 2**, and **Table 3**.



Table 1. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Wood^{8,11,12}

Fastener Penetration Into	Fastener Type ⁴	Substrate	Minimum Fastener Length ⁷ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{5,6} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners Along Each Stud ¹³					
					Maximum Cladding Weight (psf)					
					5	10	15	18	22	25
Wood ^{2,3}	8d nail (0.131 in. dia.)	Lath ¹ /Mortar	See table footnote 4	≤ 1 ¹ / ₈	7	7	7	7	7	7
			2 ¹ / ₂	1 ⁵ / ₈	7	7	7	7	6	5
	12d nail (0.148 in. dia.)		3 ¹ / ₄	≤ 1 ⁵ / ₈	7	7	7	7	7	7
			See table footnote 4	≤ 3 ⁵ / ₈	7	7	7	7	7	7
	TRUFAST [®] SIP TP ¹⁰		6	4 ¹ / ₈	7	7	7	7	7	6
			6 ¹ / ₂	4 ⁵ / ₈	7	7	7	7	7	6
	TRUFAST SIP LD ¹⁰		See table footnote 4	≤ 3 ⁵ / ₈	7	7	7	7	7	7
HeadLOK ^{®9}	See table footnote 4	≤ 3 ¹ / ₈	7	7	7	7	7	7		
Wood ^{2,3}	TRUFAST SIP TP ¹⁰	Permbase or Durarock	2 ¹ / ₂	≤ 7 ₈	8	8	8	8	8	8
			3	1 ¹ / ₈	8	8	8	8	8	7
			3 ¹ / ₂	1 ⁵ / ₈	8	8	8	8	7	6
			4	2 ¹ / ₈	8	8	8	7	6	5
			4 ¹ / ₂	2 ⁵ / ₈	8	8	7	6	5	4
			5	3 ¹ / ₈	8	8	7	5	4	4
			5 ¹ / ₂	3 ⁵ / ₈	8	8	6	5	4	-
			6	4 ¹ / ₈	8	8	5	4	-	-
	6 ¹ / ₂		4 ⁵ / ₈	8	7	5	4	-	-	
	TRUFAST SIP LD ¹⁰		See table footnote 4	≤ 7 ₈	8	8	8	8	8	8
			4	1 ¹ / ₈	8	8	8	8	8	7
			4 ¹ / ₂	1 ⁵ / ₈	8	8	8	8	7	6
			5	2 ¹ / ₈	8	8	8	7	6	5
			5 ¹ / ₂	2 ⁵ / ₈	8	8	8	6	5	4
6		3 ¹ / ₈	8	8	7	5	4	4		
6 ¹ / ₂	3 ⁵ / ₈	8	8	6	5	4	-			



Table 1. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Wood^{8,11,12}

Fastener Penetration Into	Fastener Type ⁴	Substrate	Minimum Fastener Length ⁷ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{5,6} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners Along Each Stud ¹³					
					Maximum Cladding Weight (psf)					
					5	10	15	18	22	25
Wood ^{2,3}	HeadLOK ⁹	Permabase or Durarock	See table footnote 4	≤ 2 ¹ / ₈	8	8	8	8	8	8
			6	2 ⁵ / ₈	8	8	8	8	8	7
			6 ¹ / ₂	3 ¹ / ₈	8	8	8	8	7	6

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

- Lath shall be minimum 2.5-lb. metal lath having a minimum 0.020" thickness and shall be attached in accordance with **Section 9.3.9**. Tensile strength of the lath steel shall be minimum 43,900-psi.
- Maximum stud spacing is 16" o.c. Expanded metal lath shall be attached with fasteners, vertically along each stud, at a maximum of 7" o.c.
- Wood studs shall have a minimum specific gravity of 0.42.
- Screws shall be corrosion-resistant, self-drilling, self-tapping and have a wafer or pancake head or a washer with a diameter sufficient to prevent the head from pulling through the openings in the lath and shall be in accordance with ASTM C954 or ASTM C1002. Screws shall penetrate the studs a minimum of 1¹/₄" in addition to the tapered point.
- For thicker continuous insulation applications, design is required in accordance with accepted engineering practice.
- The total distance from the face of the stud to the underside of the fastener head shall not be more than that listed above. This includes any additional sheathing materials such as OSB, Gypsum, DensGlass®, plywood, lath, rain screen, or airspace incorporated in the design of the wall assembly. Where OSB or plywood is separately attached directly to the stud, the distance from framing to the underside of fastener head may be calculated from the face of the OSB or plywood.
- Not all fasteners are commonly available in the lengths specified. Proprietary fasteners of equal strength and size are permitted.
- This table provides some options evaluated by DrJ for the attachment of Westlake Royal Stone Products over foam plastic insulating sheathing. Other methods, such as the Cascadia Clip® or Knight® Wall Systems, may be considered, but have not been evaluated by DrJ.
- HeadLOK screws are proprietary fasteners manufactured by OMG®, Inc. (dba FastenMaster®). For HeadLOK fastener code-compliance issues, see the manufacturer product literature and code-compliance reports.
- TRUFAST fasteners are proprietary fasteners manufactured by TRUFAST®, LLC. For TRUFAST fastener code-compliance issues, see the manufacturer product literature and code-compliance reports.
- Framing is defined as wood studs.
- Continuous insulation shall be foam plastic sheathing with a minimum compressive strength of 15-psi in accordance with ASTM C578 or ASTM C1289.
- Values were calculated considering only eccentric gravity loads. Where transverse load resistance is required, withdrawal resistance of the fastener shall also be considered.



Table 2. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Steel^{7,8,9}

Fastener Penetration Into	Fastener Type ³	Substrate	Minimum Fastener Length ⁶ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{4,5} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners along Each Stud ¹⁰						
					Maximum Cladding Weight (psf)						
					5	10	15	18	22	25	
Steel Framing ² (33 mil, 20-gauge, 33-ksi)	#6 Screw	Lath ¹ / Mortar	1	5/8	7	7	7	7	7	6	
			1	7/8	7	7	7	7	6	6	
			1 1/2	1 1/8	7	7	7	7	6	6	
			2	1 5/8	7	7	7	6	4	4	
			2 1/2	2 1/8	7	7	6	4	4	-	
			3	2 5/8	7	4	-	-	-	-	
			3 1/2	3 1/8	4	-	-	-	-	-	
	#8 Screw		1	5/8	7	7	7	7	7	7	7
			1	7/8	7	7	7	7	7	7	6
			1 1/2	1 1/8	7	7	7	7	7	7	6
			2	1 5/8	7	7	7	7	6	4	4
			2 1/2	2 1/8	7	7	7	6	4	4	4
			3	2 5/8	7	7	6	4	4	-	
			3 1/2	3 1/8	7	6	4	-	-	-	
	#10 Screw		4	3 5/8	6	-	-	-	-	-	-
			See table footnote 3	≤ 1 1/8	7	7	7	7	7	7	7
			2	1 5/8	7	7	7	7	6	6	6
			2 1/2	2 1/8	7	7	7	7	6	4	4
			3	2 5/8	7	7	7	6	4	4	4
			3 1/2	3 1/8	7	7	6	4	4	-	
			4	3 5/8	7	6	4	-	-	-	
	#12 Screw		4 1/2	4 1/8	7	4	-	-	-	-	-
			See table footnote 3	≤ 1 1/8	7	7	7	7	7	7	7
			2	1 5/8	7	7	7	7	7	6	6
			2 1/2	2 1/8	7	7	7	7	6	6	6
			3	2 5/8	7	7	7	7	6	4	4



Table 2. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Steel^{7,8,9}

Fastener Penetration Into	Fastener Type ³	Substrate	Minimum Fastener Length ⁶ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{4,5} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners along Each Stud ¹⁰								
					Maximum Cladding Weight (psf)								
					5	10	15	18	22	25			
Steel Framing ² (33 mil, 20-gauge, 33-ksi) Continued	#12 Screw Continued	Lath ¹ /Mortar	3 1/2	3 1/8	7	7	7	6	4	4			
			4	3 5/8	7	7	6	4	4	-			
			4 1/2	4 1/8	7	6	4	-	-	-			
			5	4 5/8	7	4	-	-	-	-			
	#14 Screw		See Table footnote 3	≤ 1 5/8	7	7	7	7	7	7	7		
			2 1/2	2 1/8	7	7	7	7	7	7	6		
			3	2 5/8	7	7	7	7	6	6	6		
			3 1/2	3 1/8	7	7	7	7	6	4	4		
			4	3 5/8	7	7	7	6	4	4	4		
			4 1/2	4 1/8	7	7	6	4	4	-	-		
			5	4.625	7	6	4	4	-	-	-		
			3	≤ 7/8	7	7	7	7	7	7	7		
	TRUFAST SIP LD		3	1 1/8	7	7	7	7	7	7	6		
			3	1 5/8	7	7	7	7	6	4	4		
			3	2 1/8	7	7	6	6	4	4	4		
			3	2 5/8	7	7	4	4	4	-	-		
			3 1/2	3 1/8	7	6	4	-	-	-	-		
			4	3 5/8	6	-	-	-	-	-	-		
			Steel Framing ² (43 mil, 18-gauge, 33-ksi)	#6 Screw	See table footnote 3	≤ 1 1/8	7	7	7	7	7	7	7
					2	1 5/8	7	7	7	7	7	6	6
2 1/2	2 1/8	7			7	7	6	6	4	4			
3	2 5/8	7			7	4	4	4	-	-			
3 1/2	3 1/8	7			4	-	-	-	-	-			
#8 Screw	See table footnote 3	≤ 1 5/8		7	7	7	7	7	7	7			
	2 1/2	2 1/8		7	7	7	7	7	6	6			
	3	2 5/8		7	7	7	6	6	4	4			
	3	2 5/8		7	7	7	6	6	4	4			



Table 2. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Steel^{7,8,9}

Fastener Penetration Into	Fastener Type ³	Substrate	Minimum Fastener Length ⁶ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{4,5} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners along Each Stud ¹⁰						
					Maximum Cladding Weight (psf)						
					5	10	15	18	22	25	
Steel Framing ² (43 mil, 18-gauge, 33-ksi) Continued	#8 Screw	Lath ¹ /Mortar	3 1/2	3 1/8	7	7	6	4	4	-	
			4	3 5/8	7	4	-	-	-	-	
	#10 Screw		See table footnote 3	≤ 2 1/8	7	7	7	7	7	7	7
			3	2 5/8	7	7	7	7	7	7	6
			3 1/2	3 1/8	7	7	7	6	6	6	4
			4	3 5/8	7	7	6	4	4	4	-
			4 1/2	4 1/8	7	4	-	-	-	-	-
			See table footnote 3	≤ 2 5/8	7	7	7	7	7	7	7
	#12 Screw		3 1/2	3 1/8	7	7	7	7	7	7	6
			4	3 5/8	7	7	7	6	6	6	4
			4 1/2	4 1/8	7	7	6	4	4	4	4
			5	4 5/8	7	6	4	-	-	-	-
			See table footnote 3	≤ 3 1/8	7	7	7	7	7	7	7
	#14 Screw		4	3 5/8	7	7	7	7	7	7	6
			4 1/2	4 1/8	7	7	7	7	6	6	4
			5	4 5/8	7	7	6	6	4	4	4
			3	≤ 1 5/8	7	7	7	7	7	7	7
	TRUFast SIP LD		3	2 1/8	7	7	7	7	7	7	6
			3	2 5/8	7	7	7	6	6	6	4
			3 1/2	3 1/8	7	7	6	4	4	4	-
4		3 5/8	7	4	-	-	-	-	-		
See table footnote 3		≤ 1 5/8	7	7	7	7	7	7	7		
Steel Framing ² (54 mil, 16-gauge, 50-ksi)	#6 Screw	Lath ¹ /Mortar	2 1/2	2 1/8	7	7	7	7	7	6	
			3	2 5/8	7	7	7	6	4	4	
			3 1/2	3 1/8	7	4	-	-	-	-	
			See table footnote 3	≤ 2 1/8	7	7	7	7	7	7	7
	#8 Screw		See table footnote 3	≤ 2 1/8	7	7	7	7	7	7	7



Table 2. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Steel^{7,8,9}

Fastener Penetration Into	Fastener Type ³	Substrate	Minimum Fastener Length ⁶ (in)	Maximum Distance from Face of Framing to Underside of Fastener Head ^{4,5} (in) (GAP)	Maximum Vertical Spacing (in) of Fasteners along Each Stud ¹⁰						
					Maximum Cladding Weight (psf)						
					5	10	15	18	22	25	
Steel Framing ² (54 mil, 16-gauge, 50-ksi) Continued	#8 Screw	Lath ¹ / Mortar	3	2 ⁵ / ₈	7	7	7	7	7	6	
			3 ¹ / ₂	3 ¹ / ₈	7	7	7	6	6	4	
			4	3 ⁵ / ₈	7	6	4	4	-	-	
	#10 Screw		See table footnote 3	≤ 2 ⁵ / ₈	7	7	7	7	7	7	7
			3 ¹ / ₂	3 ¹ / ₈	7	7	7	7	7	6	6
			4	3 ⁵ / ₈	7	7	7	6	6	4	4
			4 ¹ / ₂	4 ¹ / ₈	7	7	4	4	-	-	-
	#12 Screw		See table footnote 3	≤ 3 ⁵ / ₈	7	7	7	7	7	7	7
			4 ¹ / ₂	4 ¹ / ₈	7	7	7	7	6	4	4
			5	4 ⁵ / ₈	7	7	6	4	4	-	-
	#14 Screw		See table footnote 3	≤ 4 ¹ / ₈	7	7	7	7	7	7	7
			5	4 ⁵ / ₈	7	7	7	7	6	6	6
	TRUFAST SIP LD		3	≤ 2 ¹ / ₈	7	7	7	7	7	7	7
			3	2 ⁵ / ₈	7	7	7	7	7	6	6
			3 ¹ / ₂	3 ¹ / ₈	7	7	7	6	4	4	4
			4	3 ⁵ / ₈	7	6	4	-	-	-	-

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

- Lath shall be minimum 2.5-lb. metal lath having a minimum 0.020" thickness and shall be attached in accordance with **Section 9.3.9**. Tensile strength of the lath steel shall be minimum 43,900-psi.
- Maximum stud spacing is 16" o.c. Expanded metal lath shall be attached with fasteners, vertically along each stud, a maximum of 7" o.c.
- Screws shall be corrosion-resistant, self-drilling, self-tapping and penetrate a minimum of 3/8" and have a wafer or pancake head or a washer with a diameter sufficient to prevent the head from pulling through the openings in the lath and shall be in accordance with ASTM C954 or ASTM C1002.
- For thicker continuous insulation applications, design is required in accordance with accepted engineering practice.
- The total distance from the face of the stud to the underside of the fastener head shall not be more than that listed above. This includes any additional sheathing materials such as OSB, plywood, Gypsum, DensGlass, lath, rain screen or airspace incorporated in the design of the wall assembly.
- Not all fasteners are commonly available in the lengths specified. Proprietary fasteners of equal strength and size are permitted.
- This table provides some options evaluated by DrJ for the attachment of Westlake Royal Stone Products over foam plastic insulating sheathing. Other methods, such as the Cascadia Clip or Knight Wall Systems, may be considered, but have not been evaluated by DrJ.
- Framing is defined as steel studs.
- Continuous insulation shall be foam plastic sheathing with a minimum compressive strength of 15-psi in accordance with ASTM C578 or ASTM C1289.
- Values were calculated considering only eccentric gravity loads. Where transverse load resistance is required, withdrawal resistance of the fastener shall also be considered.



Table 3. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Masonry & Concrete^{8,11}

Lath ¹ Fastener Substrate ²	Lath Fastener Type	Maximum Veneer Weight (Includes Lath, Scratch Coat, and Mortar Setting Bed) (psf)	Maximum Distance From Face of Framing to Underside of Fastener Head ^{5,6} (in)	Lath Fastener – Minimum Size ⁷ (Diameter x Length)
Concrete ⁴ (minimum 2,500-psi)	TRUFAST ¹⁰ TRUGRIP, TRUFAST SIP LD, or Tapcon ^{®9} Hex Screw	15	1 ³ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 3" or Tapcon Hex Screw ³ / ₁₆ " x 3 ¹ / ₄ "
			1 ⁷ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 3 ¹ / ₂ " or Tapcon Hex Screw ¹ / ₄ " x 3 ³ / ₄ "
			2 ³ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 4" or Tapcon Hex Screw ¹ / ₄ " x 4"
			3 ³ / ₈	TRUFAST TRUGRIP 4 ¹ / ₂ " or Tapcon Hex Screw ¹ / ₄ " x 5"
		18	1 ³ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 3" or Tapcon Hex Screw ³ / ₁₆ " x 3 ¹ / ₄ "
			1 ⁷ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 3 ¹ / ₂ " or Tapcon Hex Screw ¹ / ₄ " x 3 ³ / ₄ "
			2 ³ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 4" or Tapcon Hex Screw ¹ / ₄ " x 4"
			3 ³ / ₈	Tapcon Hex Screw ¹ / ₄ " x 5"
		22	1 ³ / ₈	TRUFAST SIP LD or TRUFAST TRUGRIP 3" or Tapcon Hex Screw ¹ / ₄ " x 3 ¹ / ₄ "
			1 ⁷ / ₈	TRUFAST TRUGRIP 3.5" or Tapcon Hex Screw ¹ / ₄ " x 3 ³ / ₄ "
			2 ³ / ₈	TRUFAST TRUGRIP 4" or Tapcon Hex Screw ¹ / ₄ " x 4"
			3 ³ / ₈	Tapcon Hex Screw ¹ / ₄ " x 5"
		25	1 ³ / ₈	TRUFAST TRUGRIP 3" or Tapcon Hex Screw ¹ / ₄ " x 3 ¹ / ₄ "
			1 ⁷ / ₈	TRUFAST TRUGRIP 3 ¹ / ₂ " or Tapcon Hex Screw ¹ / ₄ " x 3 ³ / ₄ "
			2 ³ / ₈	Tapcon Hex Screw ¹ / ₄ " x 4"
			3 ³ / ₈	Tapcon Hex Screw ⁵ / ₁₆ " x 5"



Table 3. Fastener Requirements to Support Cladding Weight for Westlake Royal Stone Products Installation Over Continuous Insulation – Masonry & Concrete^{8,11}

Lath ¹ Fastener Substrate ²	Lath Fastener Type	Maximum Veneer Weight (Includes Lath, Scratch Coat, and Mortar Setting Bed) (psf)	Maximum Distance From Face of Framing to Underside of Fastener Head ^{5,6} (in)	Lath Fastener – Minimum Size ⁷ (Diameter x Length)
Masonry ³ (medium/normal Hollow CMU per ASTM C90)	TRUFAST SIP LD, or Tapcon Hex Screw	15	1 ³ / ₈	TRUFAST SIP LD 3" or Tapcon Hex Screw 3/16" x 2 ³ / ₄ "
			1 ⁷ / ₈	TRUFAST SIP LD 3 ¹ / ₂ " or Tapcon Hex Screw 3/16" x 3 ¹ / ₄ "
			2 ³ / ₈	Tapcon Hex Screw 1/4" x 3 ³ / ₄ "
			3 ³ / ₈	Tapcon Hex Screw 1/4" x 5"
		18	1 ³ / ₈	TRUFAST SIP LD 2 ¹ / ₂ " or Tapcon Hex Screw 3/16" x 2 ³ / ₄ "
			1 ⁷ / ₈	Tapcon Hex Screw 3/16" x 3 ¹ / ₄ "
			2 ³ / ₈	Tapcon Hex Screw 1/4" x 3 ³ / ₄ "
			3 ³ / ₈	Tapcon Hex Screw 1/4" x 5"
		22	1 ³ / ₈	Tapcon Hex Screw 1/4" x 2 ³ / ₄ "
			1 ⁷ / ₈	Tapcon Hex Screw 1/4" x 3 ¹ / ₄ "
			2 ³ / ₈	Tapcon Hex Screw 1/4" x 3 ³ / ₄ "
			3 ³ / ₈	Tapcon Hex Screw 5/16" x 5"
		25	1 ³ / ₈	Tapcon Hex Screw 1/4" x 2 ³ / ₄ "
			1 ⁷ / ₈	Tapcon Hex Screw 1/4" x 3 ¹ / ₄ "
			2 ³ / ₈	Tapcon Hex Screw 1/4" x 3 ³ / ₄ "

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

- Lath shall be minimum 2.5 lb. metal lath having a minimum 0.020" thickness and shall be attached in accordance with **Section 9.3.9**. Tensile strength of the lath steel shall be minimum 43,900-psi.
- Maximum fastener spacing in masonry and concrete is 16" o.c. horizontally and 7" o.c. vertically.
- Masonry Construction: Tapcon fasteners shall penetrate a minimum of 1". TRUFAST SIP LD and TRUGRIP fasteners shall penetrate a minimum of 1¹/₂".
- Concrete Construction: Tapcon fasteners shall have a minimum penetration depth of 1¹/₂". TRUFAST SIP LD and TRUGRIP fasteners shall penetrate a minimum of 1¹/₂".
- For thicker continuous insulation applications, design is required in accordance with accepted engineering practice.
- The total distance from concrete or masonry to the underside of the fastener head shall not be more than that listed above. This includes any additional sheathing materials such as OSB, plywood, Gypsum, DensGlass, rain screen or airspace incorporated in the design of the wall assembly.
- Not all fasteners are commonly available in the lengths specified. Proprietary fasteners of equal strength and size are permitted.
- This table provides some options evaluated by DrJ for the attachment of Westlake Royal Stone Products over foam plastic insulating sheathing. Other methods, such as the Cascadia Clip or Knight Wall Systems, may be considered, but have not been evaluated by DrJ.
- Tapcon fasteners are proprietary fasteners manufactured by ITW Buildex. For Tapcon fastener code-compliance issues, see the manufacturer product literature and code-compliance reports.
- TRUFAST fasteners are proprietary fasteners manufactured by TRUFAST, LLC. For TRUFAST fastener code-compliance issues, see the manufacturer product literature and code-compliance reports.
- Continuous insulation shall be foam plastic sheathing with a minimum compressive strength of 15-psi in accordance with ASTM C578 or ASTM C1289.



6.3 Westlake Royal Stone Products are used as an exterior wall covering installed over furring. The furring is placed over the continuous insulation and fastened to the wood or steel studs or concrete or masonry substrate. The maximum foam thickness for various fastener sizes and types is listed in **Table 4**.

Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
Minimum 1 x 3 Wood Furring	Minimum 2x Wood Stud ⁶	See Table Footnote 6	15	1	0.148" x 3 1/4" Nail or HeadLOK 4 1/2", or TRUFAST SIP (LD or TP) 4"
				1 1/2	HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4 1/2"
				2	HeadLOK 5" or TRUFAST SIP (LD or TP) 5"
				3	HeadLOK 6" or TRUFAST SIP (LD or TP) 7"
			18	1	0.148" x 3 1/4" Nail or HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4"
				1 1/2	HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4 1/2"
				2	HeadLOK 5" or TRUFAST SIP (LD or TP) 5"
				3	HeadLOK 6" or TRUFAST SIP (LD or TP) 7"
			22	1	0.148" x 3 1/4" Nail or HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4"
				1 1/2	HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4 1/2"
				2	HeadLOK 5" or TRUFAST SIP (LD or TP) 6"
				3	HeadLOK 6" or TRUFAST SIP (LD or TP) 7"



Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
Minimum 1 x 3 Wood Furring Continued	Minimum 2x Wood Stud ⁶ Continued	See Table Footnote 6 Continued	25	1	0.148" x 3 1/4" Nail or HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 4"
				1 1/2	HeadLOK 4 1/2" or TRUFAST SIP (LD or TP) 5 1/2"
				2	HeadLOK 5" or TRUFAST SIP (LD or TP) 6"
				3	None
Steel Hat Channel (Minimum 33 mil, 33-ksi)	Steel Stud ⁷ (33 mil or thicker, 33-ksi)	Steel Thickness + 3 Threads	15	1	#4 (0.112" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#6 (0.138" x 2") or TRUFAST SIP LD 2"
				2	#6 (0.138" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#10 (0.186" x 3 1/2") or TRUFAST SIP LD 3 1/2"
			18	1	#4 (0.112" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#6 (0.138" x 2") or TRUFAST SIP LD 2"
				2	#8 (0.164" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#12 (0.216" x 3 1/2") or TRUFAST SIP LD 3 1/2"
			22	1	#6 (0.138" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#8 (0.164" x 2") or TRUFAST SIP LD 2"
				2	#10 (0.186" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#14 (0.242" x 3 1/2") or TRUFAST SIP LD 3 1/2"



Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
Steel Hat Channel (Minimum 33 mil, 33-ksi) Continued	Steel Stud ⁷ (33 mil or thicker, 33-ksi) Continued	Steel Thickness + 3 Threads Continued	25	1	#8 (0.164" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#10 (0.186" x 2") or TRUFAST SIP LD 2"
				2	#12 (0.216" x 3 1/2") or TRUFAST SIP LD 2 1/2"
				3	#16 (0.268" x 3 1/2") or TRUFAST SIP LD 3 1/2"
Steel Hat Channel (Minimum 33 mil, 33-ksi)	Steel Stud (43 mil or Thicker, 33-ksi)	Steel Thickness + 3 Threads	15	1	#4 (0.112" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#6 (0.138" x 2") or TRUFAST SIP LD 2"
				2	#6 (0.138" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#8 (0.164" x 3 1/2") or TRUFAST SIP LD 3 1/2"
			18	1	#4 (0.112" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#6 (0.138" x 2") or TRUFAST SIP LD 2"
				2	#6 (0.138" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#10 (0.186" x 3 1/2") or TRUFAST SIP LD 3 1/2"
			22	1	#6 (0.138" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#6 (0.138" x 2") or TRUFAST SIP LD 2"
				2	#8 (0.164" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#10 (0.186" x 3 1/2") or TRUFAST SIP LD 3 1/2"



Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
Steel Hat Channel (Minimum 33 mil, 33-ksi) Continued	Steel Stud (43 mil or Thicker, 33-ksi) Continued	Steel Thickness + 3 Threads Continued	25	1	#6 (0.138" x 1 1/2") or TRUFAST SIP LD 1 1/2"
				1 1/2	#8 (0.164" x 2") or TRUFAST SIP LD 2"
				2	#8 (0.164" x 2 1/2") or TRUFAST SIP LD 2 1/2"
				3	#12 (0.216" x 3 1/2") or TRUFAST SIP LD 3 1/2"
Steel Hat Channel (Minimum 33 mil, 33-ksi)	Masonry ⁸ (Medium/Normal Hollow CMU per ASTM C90)	See Table Footnote 8	15	1	3/16" x 2 1/4" Tapcon Hex Screw or TRUFAST SIP LD 2 1/2"
				1 1/2	3/16" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD 3"
				2	3/16" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD 3 1/2"
				3	1/4" x 5" Tapcon Hex Screw or TRUFAST SIP LD 4"
			18	1	3/16" x 2 1/4" Tapcon Hex Screw or TRUFAST SIP LD 2 1/2"
				1 1/2	3/16" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD 3"
				2	1/4" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD 3 1/2"
				3	1/4" x 5" Tapcon Hex Screw
			22	1	3/16" x 2 1/4" Tapcon Hex Screw or TRUFAST SIP LD 2 1/2"
				1 1/2	1/4" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD 3"
				2	1/4" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD 3 1/2"
				3	1/4" x 5" Tapcon Hex Screw



Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
Steel Hat Channel (Minimum 33 mil, 33-ksi) Continued	Masonry ⁸ (Medium/Normal Hollow CMU per ASTM C90) Continued	See Table Footnote 8 Continued	25	1	1/4" x 2 1/4" Tapcon Hex Screw or TRUFAST SIP LD 2 1/2"
				1 1/2	1/4" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD 3"
				2	1/4" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD 3 1/2"
				3	5/16" x 5" Tapcon Hex Screw
Steel Hat Channel (Minimum 33 mil, 33-ksi)	Concrete ⁹ (Minimum 2,500-psi)	See Table Footnote 9	22	1	3/16" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 3"
				1 1/2	3/16" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 3 1/2"
				2	3/16" x 3 3/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 4"
				3	3/16" x 5" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 5"
			25	1	3/16" x 2 3/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 3"
				1 1/2	3/16" x 3 1/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 3 1/2"
				2	3/16" x 3 3/4" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 4"
				3	1/4" x 5" Tapcon Hex Screw or TRUFAST SIP LD or TRUFAST TRUGRIP 5"



Table 4. Maximum Foam Thickness for Fastener Type and Size^{1,13,15}

Furring Material ^{2,3,4,5}	Framing Member ²⁰	Minimum Fastener Penetration into Wall Framing	Cladding Weight ¹⁶ (psf)	Maximum Distance from the Face of Framing to the Underside of Furring Material ¹⁴ (in)	Fastener Type and Minimum Size ^{10,11,12,17,18,19} (diameter x length)
SI: 1 in = 25.4 mm, 1 psf = 0.0479 kN/m ²					
<ol style="list-style-type: none"> 1. Lath shall be minimum 2.5 lb. metal lath having a minimum 0.020" thickness and shall be attached in accordance with Section 9.3.9. Tensile strength of the lath steel shall be minimum 43,900-psi. 2. Where furring is installed vertically over wall studs, maximum stud spacing shall be 16" o.c., and furring shall be attached to each stud at a maximum of 7" o.c. along the length of the stud. Where furring is attached vertically to concrete or masonry walls, it shall be spaced a maximum of 16" o.c. and fastened a maximum of 7" o.c. vertically. 3. Where furring is installed horizontally over wall studs, maximum stud spacing shall be 16" o.c., and furring shall be installed at a maximum 7" o.c. along the length of the stud and attached to each wall stud. Where furring is attached horizontally to concrete or masonry, it shall be spaced a maximum of 7" o.c. and shall be fastened to the concrete or masonry with fasteners spaced a maximum of 16" o.c. 4. Wood furring shall be a minimum 3/4" thick. Wood furring and wood studs shall have a minimum specific gravity of 0.42. 5. Steel hat-channel furring shall be a minimum 33 mil thick steel (33-ksi) with a depth of 7/8". 6. <i>Wood Construction:</i> Nails shall penetrate wood framing a minimum of 1 1/2" and have a head size or a washer with a diameter sufficient to prevent the head from pulling through the openings in the lath. Screws shall penetrate the studs a minimum of 1 1/4". Nails supporting the furring strips shall penetrate the studs a minimum of 1 1/2". 7. <i>Steel Framing:</i> Screws shall be corrosion-resistant, self-drilling, self-tapping and penetrate a minimum of 3/8" and have a wafer or pancake head or a washer with a diameter sufficient to prevent the head from pulling through the openings in the lath. 8. <i>Masonry Construction:</i> Tapcon fasteners shall penetrate a minimum of 1". TRUFAST SIP LD and TRUGRIP fasteners shall penetrate a minimum of 1 1/2". 9. <i>Concrete Construction:</i> Tapcon fasteners shall have a minimum penetration depth of 1 1/2". TRUFAST SIP LD and TRUGRIP fasteners shall penetrate a minimum of 1 1/2". 10. Corrosion-resistant, self-drilling, self-tapping screw fasteners for connection of siding to steel framing shall comply with the requirements of AISI S200. Other approved fasteners of equivalent or greater diameter and bending strength shall be permitted. 11. Nail fasteners shall be common or box nails and shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths. Minimum bending yield strength for nails with a diameter up to 0.148", 0.162", and 0.225" shall be 90,000-psi, 90,000-psi and 80,000-psi, respectively. 12. A minimum 2x wood furring shall be used where the required wall covering fastener penetration into wood material exceeds 3/4" (19 mm) and is not more than 1 1/2" (38 mm), unless approved deformed shank siding nails or siding screws are used to provide equivalent withdrawal strength, allowing the wall covering connection to be placed into 1x wood furring. 13. Continuous insulation shall be foam plastic sheathing with a minimum compressive strength of 15-psi in accordance with ASTM C578 or ASTM C1289. 14. The total distance from the face of the stud, concrete, or masonry to the underside of the furring shall not be more than the maximum thickness listed above. This includes any additional sheathing materials such as OSB, plywood, Gypsum, DensGlass, rain screen or airspace incorporated in the design of the wall assembly. Cladding shall be attached to the furring in accordance with the manufacturer installation instructions. Not all fasteners are commonly available in the lengths specified. Proprietary fasteners of equal strength and size are permitted. 15. This table provides some options evaluated by DrJ for the attachment of Westlake Royal Stone Products over foam plastic insulating sheathing. Other methods, such as the Cascadia Clip or Knight Wall Systems, may be considered, but have not been evaluated by DrJ. 16. Materials in the assembly, other than the veneer, lath and mortar setting bed and furring, are assumed to be separately attached and are not included in the fastener size calculations. Furring weight shall be included as part of the listed cladding weight. 17. HeadLOK Screws are proprietary fasteners manufactured by OMG, Inc. (dba FastenMaster). For HeadLOK fastener code compliance issues, see the manufacturer product literature and code compliance reports. 18. Tapcon fasteners are proprietary fasteners manufactured by ITW Buildex. For Tapcon fastener code-compliance issues, see the manufacturer product literature and code-compliance reports. 19. TRUFAST fasteners are proprietary fasteners manufactured by TRUFAST, LLC. For TRUFAST fastener code-compliance issues, see the manufacturer product literature and code-compliance reports. 20. Framing is defined as wood studs, steel studs, concrete, or masonry substrates. 					



6.4 *Transverse Wind Loads*

- 6.4.1 Westlake Royal Stone Products shall not be installed in areas where the design wind pressure exceeds the capacity of the cladding and its attachment to resist the load in accordance with **Table 5**.
- 6.4.2 **Table 5** provides the maximum design wind pressure allowed for the installation of Westlake Royal Stone Products. The maximum wind speed that corresponds with this wind pressure is provided to aid the user in determining where the product can be used. See the applicable building code for the maximum design wind speed allowed for the location of the building. The wind speed listed in **Table 5** shall exceed the required design wind speed from the applicable code.

Table 5. Maximum Allowable Wind Pressure and Wind Speeds for Westlake Royal Stone Products Lath Fasteners

Exposure Category	Maximum Allowable Wind Pressure ^{2,5} (psf)	Maximum Wind Speed ^{1,3,4} V _{ult} /V _{asd} (mph)
B	70	≤ 200/155
C		≤ 185/145
D		≤ 170/130

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

1. The first wind speed listed is V_{ult}, per ASCE 7-16 and 7-22, and is the maximum allowed wind speed for the Exposure Category shown with a maximum Mean Roof Height (MRH) of 30'. The second wind speed capacity shown for each exposure category is the ASCE 7-16 and 7-22 ultimate wind speed converted to V_{asd} for allowable stress design and rounded to the nearest 5 mph.
2. Design wind pressure is per ASCE 7-16 and 7-22 for components and cladding (K_d = 0.85), Method 1 for the condition shown.
3. Maximum allowable wind speeds are based on the average ultimate loads tested for each condition divided by an allowable stress design reduction factor of 1.6, in accordance with SDPWS Section 3.2.1.
4. Pressure Equalization factor in accordance with ASTM D5206, Procedure B equals 1.0. Additional assumptions include:
 - a. Enclosed Building (GC_{pi} = ±0.18)
 - b. Topographic Factor, K_{zt} = 1.0
 - c. Ground Elevation Factor, K_e = 1.0
 - d. Zone 5 with an effective area of 10 ft² (GC_p = -1.4)
5. Wind pressure resistance is based on the lowest published withdraw capacity for the fasteners shown. Fasteners of equal or greater withdrawal resistance and equal or greater head size are permitted.

6.4.3 For additional information or use in other applications, consult the manufacturer installation instructions:

- 6.4.3.1 Eldorado Stone: www.westlakeroyalbuildingproducts.com/stone/eldorado-stone
- 6.4.3.2 Dutch Quality Stone: www.westlakeroyalbuildingproducts.com/stone/dutch-quality-stone
- 6.4.3.3 Cultured Stone: www.westlakeroyalbuildingproducts.com/stone/cultured-stone
- 6.4.3.4 StoneCraft: www.westlakeroyalbuildingproducts.com/stone/stonecraft

6.5 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.



7 Certified Performance²⁷

- 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 Westlake Royal Stone Products Adhered Masonry Veneer products comply with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:
 - 8.1.1 Westlake Royal Stone Products were evaluated to determine:
 - 8.1.1.1 The ability of various fasteners to support the gravity and transverse loads induced by the products when installed over wood or steel light-frame construction with the addition of continuous insulation installed between the framing and the Westlake Royal Stone Products.
 - 8.1.1.2 The ability of various fasteners to support the gravity and transverse loads induced by the products when installed over concrete and masonry construction with the addition of continuous insulation installed between the framing and the Westlake Royal Stone Products.
 - 8.2 Use in applications requiring a fire-resistance rating are outside the scope of this evaluation.
 - 8.3 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 qualified³⁰ to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,³¹ respectively.
 - 8.4 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

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 *Installation Procedure*
 - 9.3.1 Westlake Royal Stone Products shall be installed in accordance with the manufacturer published installation instructions, the Masonry Veneer Manufacturer Association's Installation Guide, and this report. In the event of a conflict between the manufacturer installation instructions, the Masonry Veneer Manufacturer Association's Installation Guide, and this report, the more restrictive shall govern.
 - 9.3.2 Installation is subject to the conditions of use set forth in **Section 12**.
 - 9.3.3 Veneer must be applied to a wall framing system in which the studs are spaced a maximum of 16" o.c. (406 mm).
 - 9.3.4 Westlake Royal Stone Products may be installed over continuous insulation on masonry or concrete walls, and attached in accordance with **Table 3**.



- 9.3.5 Westlake Royal Stone Products may be installed over continuous insulation on wood or steel-framed walls, with or without WSP sheathing, and attached in accordance with **Table 1**, **Table 2**, or **Table 4**.
- 9.3.5.1 Where WSP sheathing is used, it shall be installed in accordance with the applicable building code or other standards as permitted by the building code (such as SDPWS or WFCM), and shall comply with one of the following minimum requirements:
- 9.3.5.1.1 Minimum $7/16$ " Structural 1, Exposure 1 OSB complying with PS 2
- 9.3.5.1.2 Minimum $1/2$ " Structural 1 rated, exterior grade plywood complying with PS 1
- 9.3.6 Westlake Royal Stone Products must be installed over two (2) layers of a Water-Resistant Barrier (WRB) in accordance with [IBC Section 1402.2](#), [IBC Section 1403.2](#), [IBC Section 2510.6](#), and [IRC Section R703.2](#). The base layer WRB may be liquid-applied, a sheet material, or a rigid continuous insulation with taped joints where the continuous insulation is approved for use as a WRB.
- 9.3.6.1 *Exception:* The WRB is not required when installed over concrete or masonry substrate.
- 9.3.7 Weep screeds and code compliant flashing must be installed at the bottom of walls, the top of windows, doors, and fenestrations, and at all horizontal terminations of the veneer.
- 9.3.7.1 The weep screed must comply with and be installed in accordance with [IBC Section 1404.11.1.2.1](#),³² [IBC Section 2512.1.2](#), or [IRC Section R703.7.2.1](#).
- 9.3.7.2 *Exception:* The weep screed is not required when installed over concrete or masonry substrate.
- 9.3.8 Veneer must be installed over 2.5 lb/yd² (1.4 kg/m²) galvanized diamond mesh metal lath, 3.4 lb/yd² (1.8 kg/m²) $3/8$ " thick (9 mm) galvanized expanded metal lath, 18-gauge, 0.051" thick (1.30 mm), galvanized woven wire mesh or other code-approved lath of equal or better performance.
- 9.3.9 Lath shall be:
- 9.3.9.1 Installed per the manufacturer installation instructions or ASTM C1063.
- 9.3.9.2 Installed over the two (2) WRB layers, unless one of the following conditions are met:
- 9.3.9.2.1 Lath is paper-backed, in which case only one (1) additional WRB is required, except as noted in **Section 9.3.9**.
- 9.3.9.2.2 If foam sheathing is used and has been qualified by the manufacturer to perform as a WRB, then only one (1) additional WRB is required.
- 9.3.9.2.3 If a rain screen is used, only one WRB is required, in accordance with [IBC Section 2510.6](#).
- 9.3.9.3 Fastened through continuous insulation to each stud at 7" o.c. (178 mm) vertically along the stud, or as shown in **Table 2** and **Table 4**.
- 9.3.9.4 When the lath is installed over furring, the furring shall be fastened to the wood, steel, or concrete substrate in accordance with **Table 4**.
- 9.3.10 Installations in Climate Zones 1A, 2A, or 3A must incorporate a drainage space of not less than $3/16$ " (5 mm) or utilize a drainage material with a minimum ninety percent (90%) drainage efficiency between the WRB and the lath in accordance with [IBC Section 2510.6](#) and [IRC Section R703.7.3](#).
- 9.3.11 Westlake Royal Stone Products shall be adhered to the supporting walls with a $1/2$ " thick to $3/4$ " thick (13 to 19 mm) mortar setting bed.
- 9.3.11.1 The mortar shall comply with [IBC Section 2103.2](#) or [IRC Table R606.2.8](#) for the application.
- 9.3.11.2 Other mortars of equal or greater performance shall be permitted when installed in accordance with the manufacturer installation instructions.
- 9.3.11.3 All other installation and flashing details germane to the project shall be in accordance with the applicable building code and the manufacturer installation instructions.



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 Wind-load resistance testing in accordance with ASTM E330
 - 10.1.2 Calculations in accordance with AWC NDS, AISI S100, and ACI 318 performed by DrJ Engineering
- 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.³³
- 10.6 Where additional condition of use and/or regulatory compliance information is required, please search for Westlake Royal Stone Products on the DrJ Certification website.

11 Findings

- 11.1 As outlined in **Section 6**, Westlake Royal Stone Products have 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, Westlake Royal Stone Products shall be approved for the following applications:
- 11.2.1 For use as an exterior wall covering in accordance with the applicable sections of IBC Chapter 14, IBC Chapter 25, and IRC Section R703.
- 11.3 Fasteners used in accordance with **Table 1**, **Table 2**, **Table 3**, and **Table 4** are adequate for the support of Westlake Royal Stone Products in applications where there is a layer of continuous insulation installed between the products and the underlying substrate (e.g., light-frame wood or steel-framed walls, concrete, or masonry walls).
- 11.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Westlake Royal Stone, LLC.
- 11.5 IBC Section 104.2.3³⁴ (IRC Section R104.2.2³⁵ and IFC Section 104.2.3³⁶ 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:**³⁷ Building regulations require that the building official shall accept duly authenticated reports.³⁸
- 11.6.1 An approved agency is “approved” when it is ANAB ISO/IEC 17065 accredited.
 - 11.6.2 An approved source is “approved” when an RDP is properly licensed to transact engineering commerce.
 - 11.6.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.
- 11.7 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.
- 11.8 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.³⁹

12 Conditions of Use

- 12.1 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.
- 12.2 As listed herein, Westlake Royal Stone Products shall be used:
- 12.2.1 Installation shall be on exterior walls consisting of wood framing, steel framing, masonry, or concrete, capable of supporting the imposed loads, including transverse wind loads.
 - 12.2.2 Where the seismic provisions of IRC Section R301.2.2 apply, the wall assembly shall not exceed the weight limits of IRC Section R301.2.2.2, unless an engineered design is provided in accordance with IRC Section R301.1.3.
 - 12.2.3 Walls shall be braced to resist in-plane shear (racking) load by other means and in accordance with the applicable code.
 - 12.2.4 Exterior wall framing shall be limited to a maximum out-of-plane deflection of H/360 (H equals the height of the wall)
 - 12.2.5 Interior adhered masonry veneers under IBC Section 1404.11.3⁴⁰ to a maximum weight of 20-psf (0.958 kg/m²) and must be supported by framing designed to limit deflection to L/600.
- 12.3 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:
- 12.3.1 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.
 - 12.3.2 This report and the installation instructions shall be submitted at the time of permit application.
 - 12.3.3 These innovative products have an internal quality control program and a third-party quality assurance program.
 - 12.3.4 At a minimum, these innovative products 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 These innovative products have 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 these innovative products in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.



- 12.4 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.
- 12.5 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).
- 12.6 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 owner.

13 Identification

- 13.1 Westlake Royal Stone Products Adhered Masonry Veneer (Eldorado Stone, Dutch Quality Stone, Cultured Stone, and StoneCraft Industries Adhered Masonry Veneers), as listed in **Section 1.1**, are identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.
- 13.2 Additional technical information can be found at www.westlakeroyalbuildingproducts.com.
- 13.2.1 Eldorado Stone: www.westlakeroyalbuildingproducts.com/stone/eldorado-stone
- 13.2.2 Dutch Quality Stone: www.westlakeroyalbuildingproducts.com/stone/dutch-quality-stone
- 13.2.3 Cultured Stone: www.westlakeroyalbuildingproducts.com/stone/cultured-stone
- 13.2.4 StoneCraft: www.westlakeroyalbuildingproducts.com/stone/stonecraft

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](#).



Appendix A. Eldorado Stone

Profile Name	Weight of Total Façade Includes Lath, Scratch, Bond Mortar, and Stone, Saturated (psf)	Weight of Total Façade Includes 1/2" Cement Board, Bond Mortar, and Stone, Saturated (psf)
Ashlar	20.4	17.1
Bluff Stone	19.3	16.1
Brick, Adobe	21.1	17.8
Brick, Arabian	18.5	15.3
Brick, Modena	17.0	13.7
Brick, Roma	19.6	16.3
Brick, Tundra	16.8	13.6
Brick, Via	18.4	15.1
Broken Top	22.4	19.2
Castlestone, English	20.0	16.7
Cliffstone	20.7	17.4
Coarsed Stone	21.3	18.0
Coastal Reef	20.6	17.3
Cobblestone	22.8	19.6
Country Rubble	21.0	17.7
Country Rubble, Oversized	24.9	21.7
Cut Coarsed Stone	22.2	19.0
Cypress Ridge	19.6	16.3
European Ledge Cut	22.2	18.9
Field Ledge	19.2	15.9
Top Rock	20.4	17.1
Hillstone	22.0	18.8
Latitude30	21.6	18.3
Ledgecut33	22.3	19.0
Limestone	21.2	18.0
Longitude24	21.6	18.3
Mountain Ledge Panel	22.0	18.8



Profile Name	Weight of Total Façade Includes Lath, Scratch, Bond Mortar, and Stone, Saturated (psf)	Weight of Total Façade Includes 1/2" Cement Board, Bond Mortar, and Stone, Saturated (psf)
Mountain Ledge	22.1	18.9
Ridgetop 18	21.6	18.3
River Rock, Northwest	21.7	18.5
River Rock, Creek Cobble	16.7	13.5
River Rock, Streamstone	22.5	19.3
River Rock, White Water	20.2	16.9
Rough Cut	22.2	18.9
Rustic Ledge	20.1	16.9
Shadow Rock	23.3	20.1
Sierra Cut24	27.3	24
Stack Stone	19.4	16.1
Vantage30	21.6	18.3
Vintage Ranch	20.5	17.2
Weathered Edge	22.0	18.8
Zen24	21.6	18.3

SI: 1 psf = 0.0479 kN/m²

1. This table is provided by the manufacturer to aid in selecting fasteners. DrJ Engineering has not independently verified the values in these tables.



Appendix B. Dutch Quality Stone

Profile Name	Weight of Total Façade Includes Lath, Scratch, Bond Mortar and Stone, Saturated (psf)	Weight of Total Façade Includes 1/2" Cement Board, Bond Mortar and Stone, Saturated (psf)
CastleStone	20.0	16.8
Drystack	20.5	17.3
FieldStone	19.6	16.3
Ledgestone	20.1	16.8
Limestone	20.7	17.5
Michigan Split Granite	22.0	18.8
River Rock	20.5	17.3
Stack Ledge	21.3	18.1
Tuscan Ridge	21.4	18.1
Tuscany Veneer	20.2	16.9
Weather Ledge	20.5	17.3

SI: 1 psf = 0.0479 kN/m²

1. This table is provided by the manufacturer to aid in selecting fasteners. DrJ Engineering has not independently verified the values in these tables.



Appendix C. Cultured Stone

Product Style	Stone Saturated Weight (psf)	Saturated Density Stone and Scratch and Lath and Bonding Mortar (psf)	Saturated Density Stone and Cement Board and Bonding Mortar (psf)
Ancient Villa Ledgestone	11.4	21.4	18.1
Cast-Fit 12x24	12.0	22.0	18.7
Cast-Fit 8x16	13.8	23.8	20.5
Cobblefield	13.9	23.9	20.6
Coral Stone	10.1	20.1	16.8
Country Ledgestone	12.6	22.6	19.3
Cultured Brick Veneer-Handmade Brick	10.2	20.2	16.9
Cultured Brick Veneer-Used Brick	11.2	21.2	17.9
Del Mare Ledgestone	12.3	22.3	19.0
Dressed Fieldstone	14.3	24.3	21.0
Drystack Ledgestone	14.7	24.7	21.4
European Castle Stone	10.0	20.0	16.7
Hewn Stone 308	14.2	24.2	20.9
Hewn Stone 314	14.7	24.7	21.4
Hewn Stone 514	14.5	24.5	21.2
Hewn Stone 522	13.9	23.9	20.6
Hewn Stone 822	13.0	23.0	19.7
Limestone	13.6	23.6	20.3
Old Country Fieldstone	13.5	23.5	20.2
Pro-Fit Alpine Ledgestone	13.3	23.3	20.0
Pro-Fit Ledgestone	10.3	20.3	17.0
Pro-Fit Modera Ledgestone	12.0	22.0	18.7
Pro-Fit Terrain Ledgestone	12.2	22.2	18.9
River Rock	13.4	23.4	20.1
Rock Face	12.5	22.5	19.2
Southern Ledgestone	12.6	22.6	19.3



Product Style	Stone Saturated Weight (psf)	Saturated Density Stone and Scratch and Lath and Bonding Mortar (psf)	Saturated Density Stone and Cement Board and Bonding Mortar (psf)
Split Face	13.3	23.3	20.0
Stream Stone	9.6	19.6	16.3

SI: 1 psf = 0.0479 kN/m²

1. This table is provided by the manufacturer to aid in selecting fasteners. DrJ Engineering has not independently verified the values in these tables.



Appendix D. Stone Craft

Profile ID	Weight of Total Façade Includes Lath, Scratch, Bond Mortar and Stone, Saturated (psf)	Weight of Total Façade Includes 1/2" Cement Board, Bond Mortar and Stone, Saturated (psf)
Cobble	24.4	21.2
Dutchcraft	24.5	21.3
Farmledge	21.6	18.4
Fieldstone	20.7	17.5
Heritage	24.2	20.9
Laurel Cavern	22.3	19.0
Ledgestone	23.7	20.5
Monarch	20.9	17.7
River Rock	23.2	19.9
Top Rock	21.6	18.4
SI: 1 psf = 0.0479 kN/m ² 1. This table is provided by the manufacturer to aid in selecting fasteners. DrJ Engineering has not independently verified the values in these tables.		



Issue Date: December 6, 2023

Supplement Revision Date: March 16, 2026

Subject to Renewal: April 1, 2027

FBC Supplement to Report Number 1312-01

REPORT HOLDER: Westlake Royal Stone, LLC

1 Evaluation Subject

- 1.1 Westlake Royal Stone Products:
 - 1.1.1 Eldorado Stone Adhered Masonry Veneer
 - 1.1.2 Dutch Quality Stone Adhered Masonry Veneer
 - 1.1.3 Cultured Stone Adhered Masonry Veneer
 - 1.1.4 StoneCraft Industries Adhered Masonry Veneer

2 Purpose and Scope

- 2.1 Purpose
 - 2.1.1 The purpose of this Report Supplement is to show Westlake Royal Stone Products, recognized in Report Number 1312-01, have 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 41520)*
 - 2.2.2 *FBC-R—20, 23: Florida Building Code – Residential (FL 41520)*

3 Conclusions

- 3.1 Westlake Royal Stone Products, described in Report Number 1312-01, comply with the FBC-B and FBC-R and are 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 1403.2 replaces IBC Section 1402.2.
 - 3.2.9 FBC-B Section 1404.2 replaces IBC Section 1403.2.
 - 3.2.10 FBC-B Section 1405.10.1.2.1 replaces IBC Section 1404.11.1.2.1.
 - 3.2.11 FBC-B Section 1405.10.3 replaces IBC Section 1404.11.3.



- 3.2.12 FBC-B Section 1707.1 replaces IBC Section 1707.1.
- 3.2.13 FBC-B Section 2306.1 replaces IBC Section 2306.1.
- 3.2.14 FBC-B Section 2306.3 replaces IBC Section 2306.3.
- 3.2.15 FBC-B Section 2510.6 replaces IBC Section 2510.6.
- 3.2.16 FBC-B Section 2512.1.2 replaces IBC Section 2512.1.2.
- 3.2.17 FBC-R Section R104 and Section R109 are reserved.
- 3.2.18 FBC-R Section R301.1.3 replaces IRC Section R301.1.3.
- 3.2.19 FBC-R Section R301.2.1 replaces IRC Section R301.2.1.
- 3.2.20 FBC-R Section R301.2.2 is reserved and replaces IRC Section R301.2.2.
- 3.2.21 FBC-R Section R301.2.2.2.1 is reserved and replaces IRC Section R301.2.2.2.
- 3.2.22 FBC-R Section R703 replaces IRC Section R703.
- 3.2.23 FBC-R Section R703.2 replaces IRC Section R703.2.
- 3.2.24 FBC-R Section R703.7.3 replaces IRC Section R703.7.3.

4 Conditions of Use

- 4.1 Westlake Royal Stone Products, described in Report Number 1312-01, must comply with all of the following conditions:
 - 4.1.1 All applicable sections in Report Number 1312-01.
 - 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%20or%20cause%20to%20be%20made%20the%20necessary%20tests%20and%20investigations%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.cbiteest.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-mia/#>:-:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%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%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%20livable%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 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.
31 <https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date,-Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH>
32 [2021 IBC Section 1404.10.1.2.1](#)
33 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>
34 [2021 IBC Section 104.11](#)
35 [2021 IRC Section R104.11](#)
36 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>
37 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.
38 <https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1>
39 Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.
40 [2021 IBC Section 1404.10.3](#)