



FLORIDA BUILDING CODE ENGINEERING EVALUATION REPORT

Date | 2023-07-26
File No. | 0064-22-3-5915
For | Westlake Davinci Roofscapes, LLC
Address | 13890 W 101 St, Lenexa, KS 66215

Subject

Westlake Davinci Handsplit Shake Siding

Evaluation Scope

This report is provided to assist registered design professionals and building officials in the United States for determining compliance to the performance objectives in the named building codes. The product(s) described herein have been evaluated to the 2023 Florida Building Code (FBC) and Residential Code (FBC-R).

CSI DIVISION: 07 00 00 THERMAL AND MOISTURE PROTECTION

SUBDIVISION: 07 46 33 Plastic Siding

FBC CATEGORY: Panel Walls

SUB-CATEGORY: Siding

CODE SECTIONS AND STANDARDS

FBC Section	Description	Referenced Standard or Code Section ¹	Year
1403.2	Weather Protection	ASTM E331	2009
1403.3	Wind Resistance	FBC Ch 16	2023
1404.12	Polypropylene Siding	ASTM D7254	2017
1404.12.1	Flame Spread Index	ASTM E84	2018b
1405.1	Installation of Wall Coverings, General (HVHZ)	TAS 202, 203	1994
1405.2	Weather Protection	FBC Ch 16	2023
1405.18	Polypropylene Siding	FBC Ch 16	2023
1609.1.1	Determination of Wind Loads	ASCE 7	2022
1609.1.3	Testing to Allowable or Nominal Loads	ASCE 7	2022
1625.2	Load Tests, Testing Method (HVHZ)	TAS 202	1994
1625.4	Fatigue Load Testing (HVHZ)	TAS 203	1994
1626.4	Construction Assemblies Deemed to Comply with Section 1626 (HVHZ)	FBC Ch 22, 23	2023
1709.2	Load Test Procedures Specified	ASTM D7254	2017
2606.4	Burning Rate, Specifications	ASTM D635	2014
2606.4	Self-Ignition Temperature, Specifications	ASTM D1929	2016
2606.4	Smoke Density, Specifications	ASTM E84	2018b
2606.5	Structural Requirements	ASCE 7	2022



2606.6	Fastening	ASCE 7	2022
2615.2	Weathering (HVHZ)	ASTM G155	2013
2615.2	Tensile Strength after Weathering (HVHZ)	ASTM D638	2003
FBC-R Section	Description	Referenced Standard or Code Section ¹	Year
R703.1.1	Water Resistance	ASTM E331	2009
R703.1.2	Wind Resistance	ASTM E330	2014
R703.1.2	Wind Resistance	Tables R301.2(2) & R301.2(3)	2023
Table R703.3(1)	Siding Minimum Attachment and Minimum Thickness	FBC Section R703.14.1	2023
R703.14	Polypropylene Siding	ASTM D7254	2017
R703.14.3	Flame Spread Index	ASTM E84	2018b
R4401.1	High Velocity Hurricane Zone – Exterior Wall Coverings (HVHZ)	FBC Ch 14	2023
R4412.1	Plastics (HVHZ)	FBC Ch 26	2023

1. Only the applicable reference standards and code sections cited in the main body text are listed. (-) indicates that the main body text covers the full explanation of the objective.

COMPLIANCE STATEMENT

It is the opinion of Boca Engineering Co. that Davinci Handsplit Shake Siding, when installed as described in this report, has demonstrated compliance with the listed sections of the 2023 Florida Building Code (FBC) and Residential Code (FBC-R), inclusive of the requirements for High Velocity Hurricane Zone (HVHZ), through testing in accordance with the listed standards. Design and performance information can be found in the Product Evaluation section this report.

This report has been prepared and reviewed on behalf of Boca Engineering Co. by:

Christopher Bowness, P.Eng., P.E.

2023-07-26

Issue Date

12-31-2026

Expiry Date



EVALUATION REPORT TERMS

- This report is a general evaluation of the building code section requirements as identified and applies only to the samples that were evaluated. It does not imply any endorsement or warranty, nor that the signatory Engineer is the Designer of Record of any construction project for which the information is used.
Rule 61G20-3 (17)(a) Definition: Evaluation report means a report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity or a licensed Florida professional engineer or architect indicating that the product was evaluated to be in compliance with the Code or the intent of the Code and that the product complies with the Code or is, for the purpose intended, at least equivalent to that required by the Code.
- This Evaluation Report expires Dec. 31, 2026, open to renewal. Up to the renewal date, the report is valid until such time as the named product(s) changes, the Quality Assurance Agency changes, or provisions of the Code that relate to the product change.

CERTIFICATION OF INDEPENDENCE

- Boca Engineering Co., it's employees and shareholders, do not have, nor do they intend to or will acquire, a financial interest in any company manufacturing or distributing products that they evaluate.
- Boca Engineering Co. is not owned, operated, or controlled by any company manufacturing or distributing products that they evaluate.



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Product Evaluation

1.0 PRODUCT DESCRIPTION

Davinci Handsplit Shake Siding is manufactured by injection molding of a polymer blend in to individual shakes. The shakes are 8 or 10 inches wide by 18 inches long, thickness at head end is 0.3125 inches and at the butt end 0.625 inches, and each weigh 680g or 850g. Shakes are nailed to wood sheathing or straps of exterior wall construction in overlapping courses with an exposed face of 6, 7 or 8 inches, and serve as exterior wall cladding.

1.1 MATERIAL PROPERTIES

The material properties can be found in ATTACHMENT 1: MATERIAL PROPERTIES.

2.0 INSTALLATION

The cladding systems as described in Section 1 shall be installed in accordance with the manufacturer's installation instructions, the 2023 Florida Building Code, and are subject to the Limitations stated within this report.

3.0 CODE SECTIONS REVIEW

<u>FBC Section</u>	<u>Description</u>
1403.2	Weather Protection A representative wall construction assembly with Handsplit Shake siding installed on wood frame construction with a water-resistive barrier and flashing as described in this evaluation report has been tested to ASTM E331, under the conditions of FBC 1403.2 Exception 2. The tested assembly meets the criteria and conforms to this code section.
1403.3	Structural The structural design loads described in this report are in accordance with Ch 16 of the FBC.
1404.12	Polypropylene Siding Davinci Handsplit Shake Siding has been tested and certified and is labeled as conforming with ASTM D7254 by an approved quality agency, see Section 5 of this report.
1404.12.1	Flame Spread Index The ASTM E84 flame spread test report cited in Section 9 states that the test specimen ahead of the flame front remained in position during the test.
1405.1	Installation of Wall Coverings, General (HVHZ) General installation instructions comply with the provisions of this section, and HVHZ assemblies comply with TAS 202 and 203, see this report commentary to FBC 1625 & 1626.



- 1405.18 Polypropylene Siding**
Tests and calculations to FBC Ch 16 have been conducted with the siding installation details presented in this report, for allowance per FBC 1405.18 to be permitted for use in installations where basic wind speed exceeds 100 mph and building height exceeds 40 ft. See attachment 1, Tables 1 and 2, of this report.
- 1609.1.1 Determination of Wind Loads**
Wind load pressure (psf) applied to the cladding for use with the design values published in this report are determined in accordance with Chapter 30 of ASCE 7.
- 1609.1.3 Testing to Allowable or Nominal Loads**
The ASD conversion factor of tested allowable loads has been applied in accordance with this code section.
- 1625.2 Load Tests, Testing Method (HVHZ)**
The representative test assembly for HVHZ applications was tested to FBC standard TAS 202 and achieved an allowable pressure rating of 90 psf. See Attachment 2, Table 2, of this report.
- 1625.4 Fatigue Load Testing (HVHZ)**
The representative test assembly for HVHZ applications was tested to FBC standard TAS 203 following the load sequencing of FBC 1625.4 and achieved an allowable pressure rating of 90 psf. See Attachment 2, Table 2, of this report.
- 1626.4 Construction Assemblies Deemed to Comply with Section 1626 (HVHZ)**
Exterior wall sheathing of wall assemblies with Davinci Handsplit Shake Siding in the HVHZ is specified as minimum of 19/32-inch (15 mm) CD exposure 1 plywood with an approved water-resistant barrier, and are found to satisfy this code section and TAS 203.
- 1709.2 Load Test Procedures Specified**
The load test procedure and load factors in FBC referenced standards ASTM D7254 and ASTM E330 were used.
- 2606.4 Burning Rate**
Handsplit Shake Siding materials have been tested to ASTM D635 and qualify as a Class CC2.
- 2606.4 Self-Ignition Temperature**
Handsplit Shake Siding materials have been tested to ASTM D1929 and have a self-ignition temperature of greater than 650°F.
- 2606.4 Smoke Density**
Handsplit Shake Siding materials have been tested to ASTM E84 in the manner intended for use and found to have a smoke density of less than 450.



2606.5	Structural Requirements Various representative wall construction assembly with Handsplit Shake siding installed on wood frame construction with a water-resistive barrier and flashing as described in this evaluation report has been tested in accordance to ASCE 7. See Attachment 2, Table 2 for configurations and maximum allowable pressure loads.
2606.6	Fastening A representative wall construction assembly with Handsplit Shake siding with various fastening configurations has been tested in accordance to ASCE 7. See Attachment 2, Table 2 for configurations and maximum allowable pressure loads.
2615.2	Weathering (HVHZ) Handsplit Shake Siding materials have been tested to 4500 hours of accelerated xenon arc weathering exposure to ASTM G155.
2615.2	Tensile Strength after Weathering (HVHZ) After 4500 hours of accelerated weathering exposure, Handsplit Shake Siding material tested to ASTM D638 loss of tensile strength yield does not exceed 10%.
<u>FBC-R Section</u>	<u>Description</u>
R703.1.1	Water Resistance Same as this report commentary to FBC 1403.2.
R703.1.2	Wind Resistance The load test procedure and load factors in FBC referenced standards ASTM D7254 and ASTM E330 were used to determine allowable wind pressure.
R703.1.2	Wind Resistance Allowable wind pressure values published in this report may be used with Tables R301.2(2) and R301.2(3) for walls using an effective wind area of 10 square feet.
Table R703.3(1)	Siding Minimum Attachment and Minimum Thickness Directs to FBC R703.14 and manufacturer's testing reports for details of attachment.
R703.14	Polypropylene Siding Same as this report commentary to FBC 1404.12.
703.14.3	Flame Spread Index Same as this report commentary to FBC 1404.12.1.
R4401.1	High Velocity Hurricane Zone – Exterior Wall Coverings (HVHZ) Refers user to FBC Ch 14. See this report commentary to FBC 1405.1.
R4412.1	Plastics (HVHZ) Refers user to FBC Ch 26. See this report commentary to applicable FBC Ch 26 sections.



4.0 LIMITATIONS

1. This Evaluation is for the base code requirements of the building system as addressed in this report. In some building applications, additional performance objectives may be required by Code which must be addressed in the building design for those specific cases.
2. Design calculations, drawings, and special inspections are to be furnished for building projects by registered professionals as required by the respective jurisdictional authorities and Codes.
3. Wall assemblies with Davinci Handsplit Shake siding, to achieve the wall assembly performance standards as stated in this report, must be constructed with the components of water-resistive barrier per FBC 1404.2 or R703.2, and flashing per FBC 1405.4 or R703.4.
4. Wall framing and sheathing to which the siding is attached must be designed and installed for the applicable wind pressure and other climate and occupancy loads as required by Code for the construction project. Where framing and sheathing details are provided in this report, they are representing the minimum tested or calculated materials for the required strength of attachment for the wall cladding. The wall framing structural design and performance is outside the scope of this report.
5. Handsplit Shake Siding is considered as a flexible finish with wall deflection limit of $L/120$ in accordance with FBC Table 1604.3.
6. Water-resistive barrier is not required for exterior concrete or masonry wall construction.
7. Handsplit Shake siding used in light-framed wall construction, non-HVHZ, shall be installed over and attached to wood structural panel sheathing with minimum thickness of 7/16 inch.
8. Handsplit Shake siding used in light-framed wall construction, HVHZ, shall be installed over minimum 19/32-inch (15 mm) CD exposure 1 plywood, and framing shall be in accordance with the HVHZ sections of FBC Ch 22 or 23.
9. Where wall construction is concrete or masonry, siding shall be nailed to wood straps that are securely fastened to the solid wall to transfer all loads back to the primary structure.
10. Scope of evaluation does not include siding applications where interior or exterior wall Fire Resistance rating is required.
11. Installations are limited to Type VB construction, in accordance with FBC 1405.18.
12. In accordance with FBC 1404.12.2, the fire separation distance between a building with Handsplit Shake siding and the adjacent building shall be not less than 10 feet, for applications under the FBC.
13. In accordance with FBC R703.14.2, Handsplit Shake siding shall not be installed on walls with a fire separation distance of less than 5 feet (1524 mm) and walls closer than 10 feet (3048 mm) to a building on another lot, for applications under the FBC-Residential.
14. Clearance between exterior wall coverings and final earth grade on the exterior of a building shall not be less than 6 inches, in accordance with FBC 1403.8.

5.0 FIRE CLASSIFICATION

Summary of fire performance classifications found by testing to code referenced standards:

ASTM E84: Flame Spread Index (FSI): < 200, Smoke Developed Index (SDI): < 450, Class C

ASTM D635: Burning Rate: < 2.5 in/min, Class CC2

ASTM D1929: Self-Ignition Temperature: > 650 °F

6.0 QUALITY ASSURANCE ENTITY

The products evaluated in this report are surveyed at the approved manufacturing locations with third-party quality assurance inspections and product certification labeling by QAI Laboratories, Inc.



7.0 MANUFACTURING PLANTS

The manufacturing plant of Davinci Handsplit Shake Siding covered in this evaluation report is located in Lenexa, KS.

8.0 LABELING

Labeling shall be in accordance with the requirements of the FBC, and the Accredited Quality Assurance Agency.

9.0 REFERENCE TESTING AND EVALUATION DOCUMENTS

<u>Entity</u>	<u>Entity Accreditation</u> ¹	<u>Standards</u>	<u>Report No.</u>	<u>Issued Date</u>
Intertek	IAS TL-274	ASTM E331	104048986COQ-001	2020-02-10
QAI	IAS TL-220	ASTM D7254	RJ6566P-5	2019-05-17
QAI	IAS TL-220	ASTM E84	RJ6566F-1	2018-10-09
QAI	IAS TL-220	TAS 202	RJ6566P-7	2019-10-28
QAI	IAS TL-220	TAS 203	RJ6566P-7	2019-10-28
Intertek	IAS TL-274	ASTM E330	104048986COQ-003(A-E)	2020-02-12
Intertek	IAS TL-274	ASTM D5206	104048986COQ-003(F-J)	2020-02-21
Intertek	IAS TL-274	ASTM D635	104011548-004 RO	2019-10-16
Intertek	IAS TL-274	ASTM D1929	104011548-003 RO	2019-10-15
Intertek	IAS TL-274	ASTM G155	104011548-001	2019-08-21
PRI	IAS TL-189	ASTM D638	DRM-156-02-01	2015-12-02
QAI	IAS AA-723	Quality Assurance	B0150-2	2023-07-26

1. Testing, certification, evaluation, and inspection agencies referenced have been verified to be accredited by the International Accreditation Service (www.iasonline.org) for the applicable scope, in good standing on the date of the evaluation, in accordance with ISO 17025 and ISO 17020 international standards for testing and inspection bodies.



Attachments

ATTACHMENT 1: MATERIAL PROPERTIES

Table 1: DaVinci Siding Physical Properties

Property	Standard	Result	Requirement	Compliance
General Material Properties				
Impact Strength (in.-lbf)	ASTM D7254	88 in.-lbf	≥ 35	Pass
Average Ultimate Load of Panel (psf)	ASTM D5206	119 psf	≥ 16.2	Pass
Flame Spread Index	ASTM E84	120	≤ 200	Pass
Spontaneous Ignition Temperature (°F)	ASTM D1929	747 °F	≤ 650	Pass
Linear Burn Rate (in/min)	ASTM D635	0.6 in/min	≤ 2.5	Pass
Average Smoke Density	ASTM D2843	8	≤ 75	Pass
Smoke Developed Index	ASTM E84	400	≤ 450	Pass
Tensile Strength (psi)	ASTM D638	1015 psi	Report Value	Pass
Tensile Strength After Heat Aging for 60 days at 176 °F Temperature (% of As Received)	ASTM D638	99 %	≥ 80 ²	Pass
Flexural Strength after 5000-hrs of Accelerated Weathering (% of As Received)	ASTM G155 ASTM D790	96 %	≥ 90 ²	Pass
Wall Assembly Tests, Regional Codes¹				
Florida High Velocity Hurricane Zone (HVHZ) Maximum Deflection and Permanent Deformation	TAS 202	90 psf	1.5x Design pressure without failure	Pass
Florida High Velocity Hurricane Zone (HVHZ) Recovery Over Maximum Deflection (%)	TAS 203	94 %	≥ 90	Pass
Californian Wildland Urban Interface - Flame Penetration and Glowing Combustion	SFM 12-7A-1	Absence of flame penetration and glowing combustion	Absence of flame penetration and glowing combustion at 60-min duration	Pass
Wall Assembly Tests, Performance Values¹				
Avg. Ultimate Wind Resistance (psf)	ASTM E330/D5206	Allowable (ASD) values of 41 – 104.5 psf, dependant on assembly details and installation conditions		
Avg. Ultimate Wind Speed Resistance (mph)	ASCE7	123 – 210 mph at heights of 15 – 60 ft, dependant on assembly details and installation conditions		
Drainage Efficiency (%)	ASTM E2273	90.3 % drainage efficiency with polymeric mesh rainscreen and 15 lb felt wall exterior		
Water Penetration Resistance	ASTM E331	No leakage observed after 2-hr pressurized rain exposure, assembly test per IBC 1402.2		
Ignitability (20 minute test)	NFPA 268	No Sustained Flaming occurred, passed		

1. Wall assembly tests results are dependent on installation components and environmental conditions consistent with tested details. See Davinci's document library of Engineering and Certifications reports for further details.

ATTACHMENT 2: WIND PRESSURE AND WIND SPEED TABLES

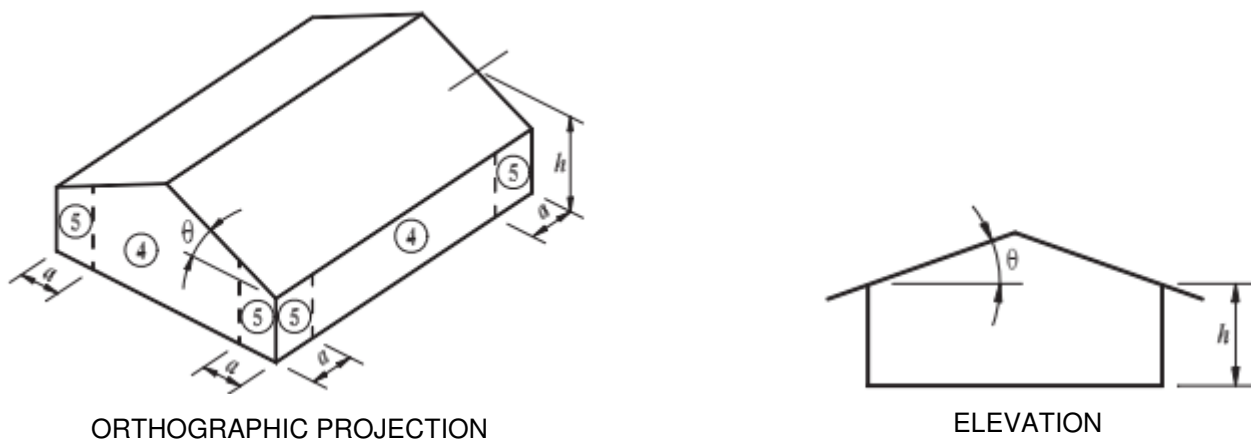
User's Guide to DaVinci Siding Wind Pressure and Wind Speed Tables:

The DaVinci siding wind pressures and wind speed conversion tables have been developed to assist users in determining appropriate installation details for a range of wall construction components, building dimension plans, and site and environmental conditions.

Wind speed conversion tables have been prepared following design methodology of ASCE7-22, Ch. 30.3, for low-rise buildings with maximum height of 60 ft, for enclosed buildings with topographic and elevation factors set to unity. These settings are typical of many installations, and consistent with the prescriptive approach used in FBC-R Table R301.2(2). All conditions must be consistent with Table Notes 1-14 and the details within the wind speed conversion tables to be considered valid. If the actual site, building dimension or climatic conditions (including the given variables) differ from those prescribed, the allowable pressure values may be used to calculate adjusted wind speed limits.

For building heights over 60 ft, the Allowable Pressure (ASD) values listed in the wind uplift tables may be used by a licensed design professional to calculate ultimate wind speed and/or allowable height, for the given DaVinci product installation detail and building project conditions.

At any building height, when the Allowable Pressure (ASD) has been pre-determined by the designer or building official, the user only needs to check that the installation detail is shown as capable of that pressure or greater.



$a = 10\%$ of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m).

Exception: For buildings with $\theta = 0^\circ$ to 7° and a least horizontal dimension greater than 300 ft (90 m), dimension a shall be limited to a maximum of $0.8h$.

$h =$ Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10^\circ$.

$\theta =$ Angle of plane of roof from horizontal, in degrees.

Figure 1. Wind Pressure Diagrams as Represented in ASCE7-22 for use in conjunction with Tables 2, 3, 4.



Tables 2, 3, 4 Notes:

- 1) Table limiting heights and wind velocity values are for low-rise buildings of maximum 60 ft height, developed in accordance with ASCE7-22, Table 30.3-1. Design input values: $GC_p = -1.1$ (Zone 4), -1.4 (Zone 5), $GC_{pi} = 0.18$, $K_{zt} = 1$, $K_d = 0.85$, $K_e = 1$, $I_w = 1.0$.
- 2) To convert to Factored Design Resistance Pressure (psf) (LRFD), multiply Allowable Pressure (psf) (ASD) by 1.67.
- 3) Wind speed conversion corresponds to the maximum Zone 4 and Zone 5 pressure with effective area of 10 ft². Table wind speeds are only valid under the design conditions stated. For other site conditions and/or building dimensions, designers can use the published Allowable Pressure (psf) (ASD) to determine allowable wind speeds with FBC-R Table R301.2(2) or calculations to FBC Ch 16.
- 4) Allowable pressure (psf) (ASD) represents tested assembly ultimate pressure divided by safety factor of 2.
- 5) Wood framing species SPF No. 2 or better. Members may be substituted with i) any larger section dimension of the same material, and/or, ii) any species/grade of 0.42 specific gravity or greater.
- 6) Steel framing dimensions 1-5/8 x 3-5/8, with minimum yield strength of 33 ksi and 18 ga (43 mil) thickness. The framing members may be substituted with i) any larger section dimension of the same material, and/or, ii) any greater yield strength and/or gauge thickness.
- 7) Plywood Sheathing: Min. 15/32, 0.42 SG, 4-ply Exposure 1, complying with NIST DOC PS 2. Plywood sheathing may be substituted with thicker profile of up to nominal 1-inch, and any specific gravity greater than 0.42.
- 8) OSB Sheathing: Min. 7/16, Exposure 1, complying with NIST DOC PS 2. OSB sheathing may be substituted with thicker profile of up to nominal 1-inch.
- 9) Gypsum sheathing must comply with ASTM C1396 and be rated by the manufacturer for exterior use; gypsum thickness may not be increased.
- 10) All fasteners are to be corrosion resistant. Nails must comply with ASTM F1667 and are to be of common or box type. Siding nail to have minimum head diameter of 1/4-inch, roofing nail to have minimum diameter of 3/8-inch.
- 11) Allowable pressure (psf) (ASD) for assemblies in HVHZ determined in accordance with TAS 202 and 203.
- 12) Further assembly details provided in Attachment 3: Assembly Diagrams are to be followed.
- 13) Wind exposure categories as defined in ASCE7-22, section 26.7.
- 14) Interpolation not permitted. For heights in between those listed, use next highest height column.
- 15) The wall structure must be designed to limit the deflection at the actual design wind load to no greater than L/120 in accordance with FBC Table 1604.3.

Table 2: Assembly Configurations for Handsplit Shake Siding^{1,12,15}				
Assembly Number	Min. Framing^{5,6}	Min. Sheathing^{7,8,9}	Fastening¹⁰	Max Allowable Design Pressure (ASD) (psf)^{2,4}
Non-HVHZ				
1	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	15/32 Plywood	Two (2) per shake, 5d 1.75-inch galv. siding nail	57.5
2	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	15/32 Plywood	Two (2) per shake, 11ga 1.75-inch galv. ring-shank roofing nail	104.5
3	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	7/16 OSB	Two (2) per shake, 5d 1.75-inch galv. siding nail	43
4	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	7/16 OSB	Two (2) per shake, 11ga 1.75-inch galv. ring-shank roofing nail	90
5	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	15/32 Plywood w/ mesh rainscreen	Two (2) per shake, 6d 2-inch galv. siding nail	55
6	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	7/16 OSB w/ mesh rainscreen	Two (2) per shake, 6d 2-inch galv. siding nail	41
7	Nom. 2 x 4 wood stud or steel stud @ 16-in o/c	7/16 OSB w/ 5/8 ext. gypsum ⁹	Two (2) per shake, 6d 2-inch galv. siding nail	71
8	CMU Block or Solid Concrete Wall	Nom. 1 x 3 P.T. SPF No. 2 straps	Two (2) per shake, 5d 1.75-inch galv. siding nail	69
HVHZ¹¹				
9	Nom. 2 x 4 wood stud @ 16-in o/c	5/8 D-Fir 5-ply Ext plywood	Two (2) per shake, 11ga 1.75-inch galv. ring-shank roofing nail	90

- Assembly Wind Load Values Tables Begin on Next Page -



Table 3: Maximum Wind Speeds of Wall Cladding Installed at Various Building Heights and Exposure Categories - 2023 FBC Non-HVHZ¹

System No. ¹²	Allowable Pressure (psf) (ASD) ^{2,4}	Exposure Category ¹³	ZONE 5 (CORNER) ³							ZONE 4 (FIELD) ³						
			Maximum Wind Speed V _{ult} (mph)							Maximum Wind Speed V _{ult} (mph)						
			Building Height (ft) ¹⁴							Building Height (ft) ¹⁴						
			15	20	25	30	40	50	60	15	20	25	30	40	50	60
1	57.5	B	210	210	206	200	194	188	183	210	210	210	210	210	209	204
		C	181	176	172	169	164	160	157	201	196	191	187	182	178	174
		D	165	161	158	155	151	148	146	183	178	175	172	168	165	162
2	104.5	B	191	183	178	173	168	162	158	210	210	210	210	210	210	210
		C	157	152	149	146	142	138	136	210	210	210	210	210	210	210
		D	142	139	136	134	131	128	126	210	210	210	210	210	210	210
3	43	B	210	210	210	210	210	210	210	210	204	197	192	186	180	176
		C	210	210	210	210	210	210	210	174	169	165	162	157	154	151
		D	210	210	210	209	204	200	197	158	154	152	149	145	142	140
4	90	B	210	210	210	210	210	210	210	210	210	210	210	210	210	210
		C	210	210	210	210	205	200	196	210	210	210	210	210	210	210
		D	206	201	197	194	189	185	182	210	210	210	210	210	206	203
5	55	B	210	207	201	195	190	184	179	210	210	210	210	210	204	199
		C	177	172	168	165	160	156	154	197	191	187	183	178	174	171
		D	161	157	154	152	148	145	143	179	175	171	168	164	161	159
6	41	B	187	179	174	169	164	159	155	207	199	193	187	182	176	172
		C	153	149	145	142	138	135	133	170	165	162	158	154	150	147
		D	139	136	133	131	128	125	123	154	151	148	145	142	139	137
7	71	B	210	210	210	210	210	209	204	210	210	210	210	210	210	210
		C	201	196	191	187	182	178	175	210	210	210	208	202	197	194
		D	183	179	175	172	168	165	162	203	198	195	191	187	183	180
8	69	B	210	210	210	210	210	206	201	210	210	210	210	210	210	210
		C	198	193	189	185	179	175	172	210	210	210	205	199	195	191
		D	180	176	173	170	166	162	160	200	196	192	189	184	180	178

Table 4: HVHZ Maximum Wind Speeds of Wall Cladding Installed at Various Building Heights and Exposure Categories - 2023 FBC HVHZ^{1,11}

System No. ¹²	Allowable Pressure (psf) (ASD) ^{2,4}	Exposure Category ¹³	ZONE 5 (CORNER) ³							ZONE 4, (FIELD) ³						
			Maximum Wind Speed V _{ult} (mph)							Maximum Wind Speed V _{ult} (mph)						
			Building Height (ft) ¹⁴							Building Height (ft) ¹⁴						
			15	20	25	30	40	50	60	15	20	25	30	40	50	60
9	90	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		C	210	210	210	210	205	200	196	210	210	210	210	210	210	210
		D	206	201	197	194	189	185	182	210	210	210	210	210	206	203

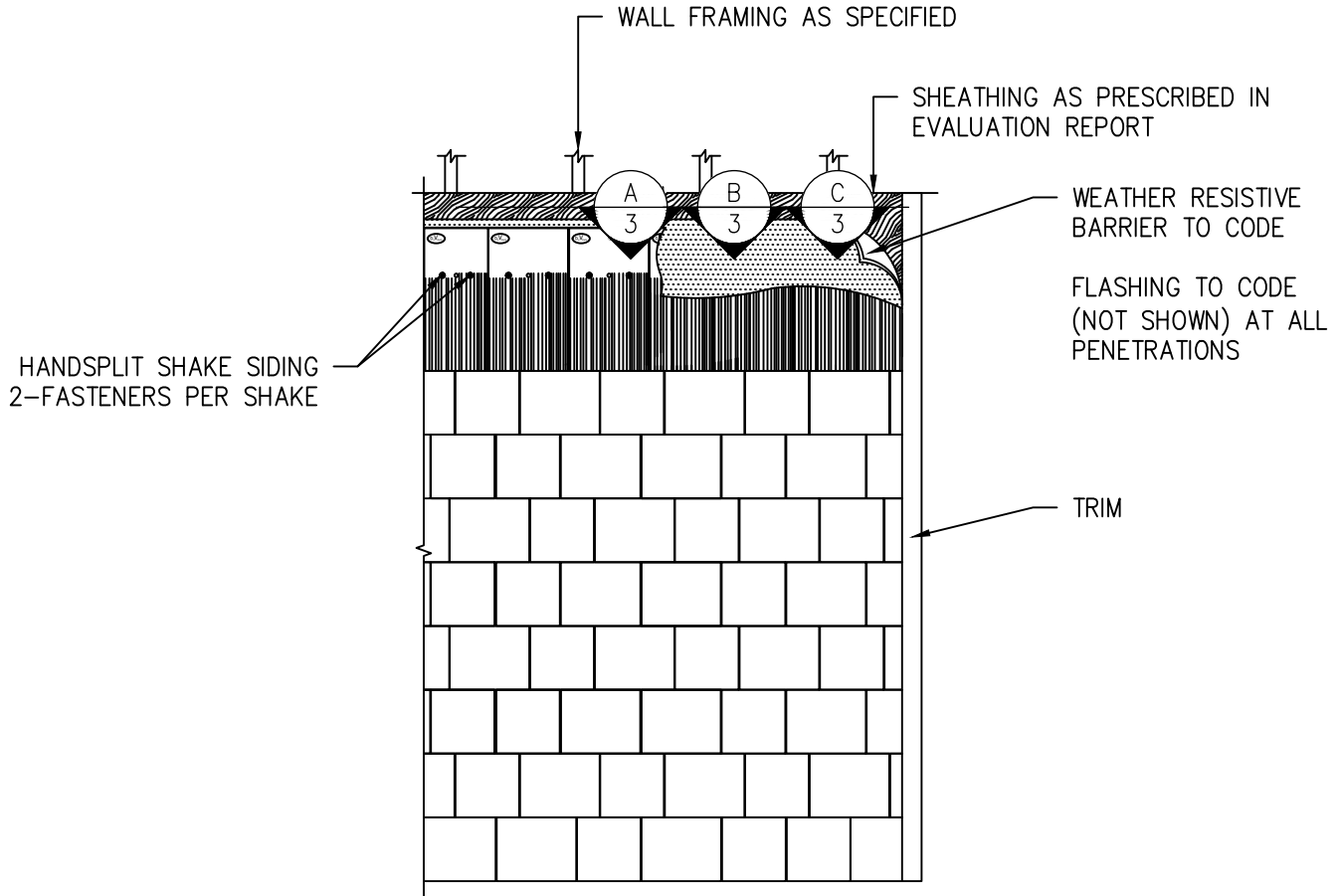
See General Notes for Tables 2,3,4 on page 10 for referenced superscript table notes.

ATTACHMENT 3: ASSEMBLY DIAGRAMS

Begins next page.



DAVINCI HANDSPLIT SHAKE SIDING
 DETAILS OF 2023 FBC WIND LOAD RESISTANCE ASSEMBLIES



A
1
 HANDSPLIT SHAKE SIDING WALL ELEVATION
 NOT-TO-SCALE

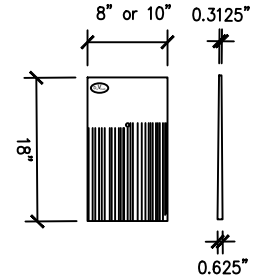
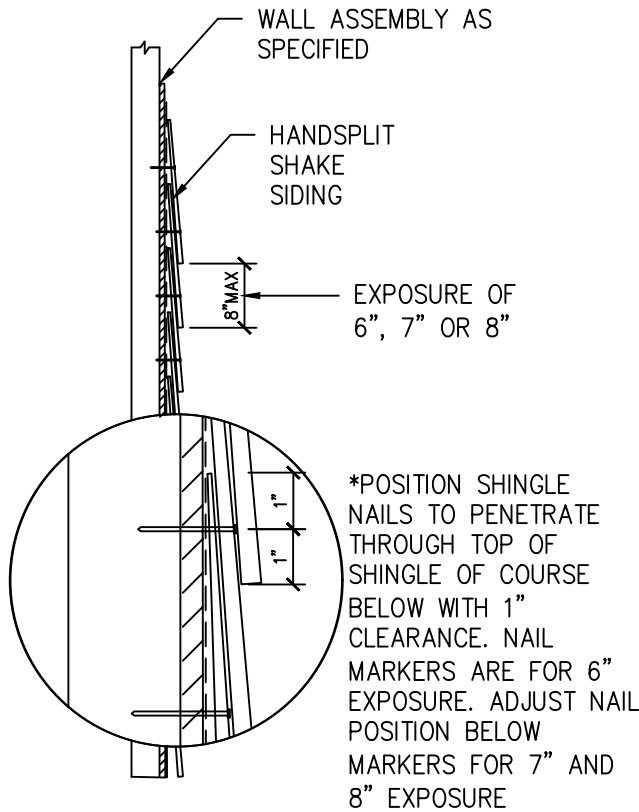
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DAVINCI HANDSPLIT SHAKE SIDING
 DETAILS OF 2023 FBC WIND LOAD RESISTANCE ASSEMBLIES



PROPERTY	HANDSPLIT SHAKE
LENGTH	18"
WIDTH	8", 10"
THICKNESS	HEAD END = 1/4" BUTT END = 5/8"
WEIGHT	8" - 680g 10" - 850g

A SIDING INSTALLATION
 2 SECTION VIEW NOT-TO-SCALE

B HANDSPLIT SHAKE
 2 ELEVATION NOT-TO-SCALE

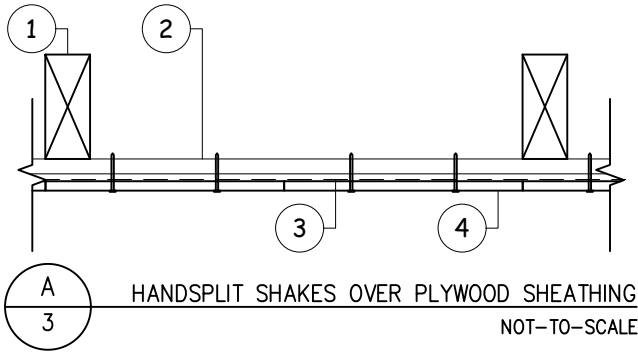
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			DATE JULY 26, 2023		DRN NN	
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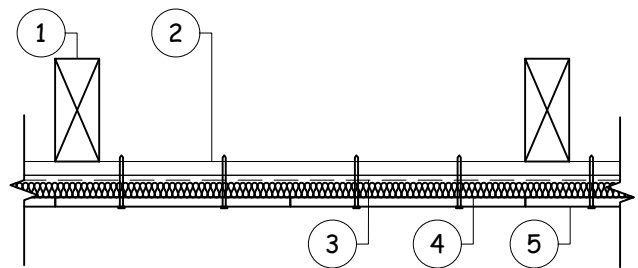


DAVINCI HANDSPLIT SHAKE SIDING
 DETAILS OF 2023 FBC WIND LOAD RESISTANCE ASSEMBLIES



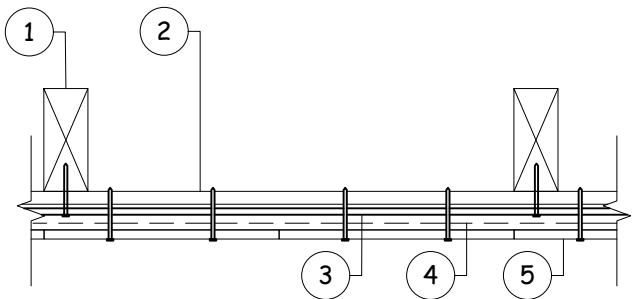
HANDSPLIT SHAKES OVER PLYWOOD SHEATHING
 NOT-TO-SCALE

LIGHT-FRAMED STUD & WOOD STRUCTURAL PANEL SHEATHING ASSEMBLY, INTERIOR TO EXTERIOR	
1	MIN. 2x4 WOOD OR STEEL STUDS @ 16" O.C., SEE ENGINEERING EVALUATION REPORT
2	PLYWOOD OR OSB SHEATHING FASTENED TO STUDS PER CODE, SEE ENGINEERING EVALUATION REPORT
3	WATER RESISTIVE BARRIER TO CODE
4	DAVINCI SIDING @ 8" EXPOSURE FASTENING PER ENGINEERING EVALUATION REPORT



HANDSPLIT SHAKES OVER MESH RAINSCREEN W/ PLYWOOD SHEATHING
 NOT-TO-SCALE

EXTERIOR MESH RAINSCREEN INTALLATION INTERIOR TO EXTERIOR	
1	MIN. 2x4 WOOD OR STEEL STUDS @ 16" O.C., SEE ENGINEERING EVALUATION REPORT
2	PLYWOOD SHEATHING FASTENED TO STUDS PER CODE, SEE ENGINEERING EVALUATION REPORT
3	WATER RESISTIVE BARRIER TO CODE
4	KEENE DRIWALL 10mm MESH RAINSCREEN INSTALLED PER MANUFACTURER'S INSTRUCTIONS
5	DAVINCI SIDING @ 8" EXPOSURE FASTENING PER ENGINEERING EVALUATION REPORT



HANDSPLIT SHAKES OVER EXT. GYPSUM AND OSB SHEATHING
 NOT-TO-SCALE

LIGHT-FRAMED STUD WALL W/GYPSUM AND OSB INSTALLATION INTERIOR TO EXTERIOR	
1	MIN. 2x4 WOOD OR STEEL STUDS @ 16" O.C., SEE ENGINEERING EVALUATION REPORT
2	OSB SHEATHING FASTENED TO STUDS PER CODE, SEE ENGINEERING EVALUATION REPORT
3	EXTERIOR GYPSUM FASTENED TO STUDS PER CODE, SEE ENGINEERING EVALUATION REPORT
4	WATER RESISTIVE BARRIER TO CODE
5	DAVINCI SIDING @ 8" EXPOSURE FASTENING PER ENGINEERING EVALUATION REPORT

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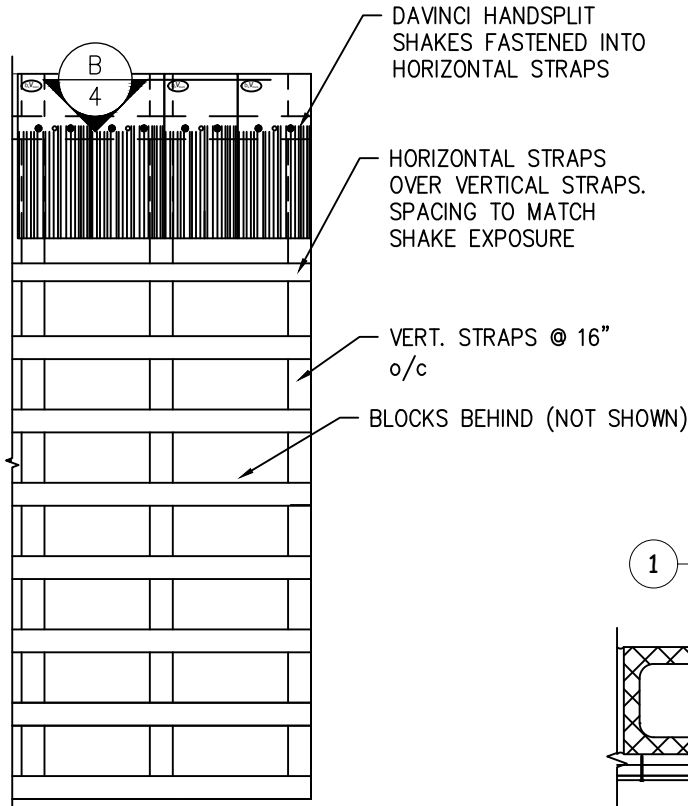
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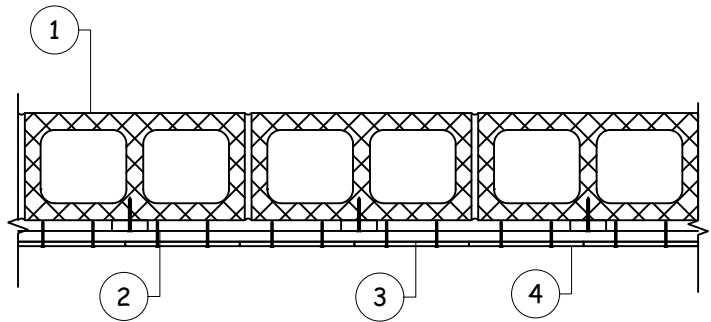
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DAVINCI HANDSPLIT SHAKE SIDING
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CMU/CONCRETE WALL ASSEMBLY INTERIOR TO EXTERIOR	
1	CMU BLOCKS MIN. 1500 PSI, OR SOLID CONCRETE MIN. 2500 PSI
2	VERT 1X3 P.T. SPF No.2 STRAPS @ 16" O.C. W/ $\frac{3}{16}$ " ITW TAPCON CONCRETE ANCHOR SCREWS W/MIN. 1 $\frac{1}{4}$ " EMBEDMENT @ 16" O.C.
3	HOR. 1X3 P.T. SPF No.2 STRAPS @ 8" O.C. W/#8 1 $\frac{1}{2}$ " GALV. WOOD SCREWS INTO EVERY STRAP INTERSECTION
4	DAVINCI SIDING @ 8" EXPOSURE W/(2)-1 $\frac{1}{2}$ "X $\frac{1}{4}$ " HEAD & 0.092" SHANK GALVANIZED SIDING NAILS PER SHAKE



A
4
HANDSPLIT SHAKES OVER CMU OR CONCRE WALL
ELEVATION VIEW NOT-TO-SCALE

B
4
HANDSPLIT SHAKES OVER CMU OR CONCRETE WALL
PLAN VIEW NOT-TO-SCALE

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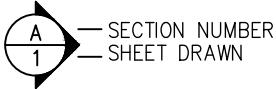
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DAVINCI HANDSPLIT SHAKE SIDING
DETAILS OF 2023 FBC WIND LOAD RESISTANCE ASSEMBLIES

LEGEND AND SYMBOLS



TESTING AND CODE COMPLIANCE

1. THE SIDING PRODUCT ASSEMBLY SHOWN IS DESIGNED TO COMPLY WITH THE 8TH EDITION (2023) FLORIDA BUILDING CODE (FBC).
2. THE STRUCTURAL FRAMING AND SHEATHING SHALL BE DESIGNED AND ANCHORED TO PROVIDE LATERAL BRACING TO NOT EXCEED DEFLECTION LIMITS, AND PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. FRAMING DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
3. THESE DRAWINGS APPLY TO THE TESTING ASSEMBLY ONLY AND DO NOT IMPLY THAT THE SIGNATORY ENGINEER IS THE DESIGNER OF RECORD FOR ANY FUTURE CONSTRUCTION ON WHICH THEY ARE USED.
4. SOME NON-STRUCTURAL COMPONENTS NOT SHOWN AND DO NOT IMPACT STRENGTH FOR ATTACHMENT. TO BE INSTALLED PER CODE AND MAY INCLUDE: FLASHING, INTERIOR INSULATION, INTERIOR FINISH.

INSTALLATION

THE INSTALLATION DETAILS DESCRIBED ARE OF THE LABORATORY TESTED ASSEMBLY AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, THE JOB ENGINEER OR ARCHITECT PREPARED SITE-SPECIFIC DOCUMENTS SHALL BE USED.

SHEATHING

1. WOOD-BASED STRUCTURAL SHEATHING:
 - 1.1. PLYWOOD – US DOC PS1-19 OR PS2-18 U.N.O.
 - 1.2. OSB – US DOC PS2-18 U.N.O.
2. GYPSUM SHEATHING: ASTM C1396, EXTERIOR TYPE.
3. RAINSCREEN MESH: ASTM E2925-17.

FASTENERS

1. WOOD SCREWS TO CONFORM TO ASME B18.6.1 U.N.O.
2. METAL SCREWS TO CONFORM TO ASTM C1513.
3. SIDING NAILS TO CONFIRM TO ASTM F1667.
4. ALL FASTENERS WITH CORROSION-RESISTANT GALVANIZED COATING.

FRAMING

1. METAL FRAMING MEMBERS MINIMUM 18 GAUGE U.N.O., 33ksi, COMPLIANCE WITH ANSI S100-16.
2. WOOD FRAMING MIN. 2x4 S.G. 0.42, COMPLIANCE WITH US DOC PS20-05.
3. CMU BLOCKS MIN. 1500 PSI, OR SOLID CONCRETE MIN. 2500 PSI.

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