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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 31 33—COMPOSITE RUBBER SHAKES

REPORT HOLDER:

DAVINCI ROOFSCAPES, LLC

**13890 WEST 101ST STREET
LENEXA, KANSAS 66215**

EVALUATION SUBJECT:

**DAVINCI SLATE, DAVINCI SHAKE, BELLAFORTÉ SHAKE, AND BELLAFORTÉ SLATE
ROOF SHINGLES**



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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**Section: 07 31 33—Composite Rubber Shakes****REPORT HOLDER:**

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EVALUATION SUBJECT:**DaVINCI SLATE, DaVINCI SHAKE, BELLAFORTÉ SHAKE, AND BELLAFORTÉ SLATE ROOF SHINGLES****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Weather resistance
- Fire classification
- Wind resistance

2.0 USES

The DaVinci Slate, DaVinci Shake, Bellaforté Shake, and Bellaforté Slate roof shingles are used as roof covering materials and are recognized as a Class A roof covering when installed in accordance with this report.

3.0 DESCRIPTION**3.1 General:**

The DaVinci Slate, DaVinci Shake, Bellaforté Shake, and Bellaforté Slate roof shingles are engineered polymeric-based roof shingles designed to provide the look of natural slate or shake, respectively. The shingles are manufactured with a proprietary formulation using both high-density and low-density polyethylene polymers and other additives.

3.2 DaVinci Slate Roof Shingle:

The DaVinci Slate roof shingle is available in various colors and in widths of 6, 7, 9, 10 and 12 inches (152, 178, 229,

254 and 305 mm) with a length of 18 inches (457 mm). Exposure is 6 to 7¹/₂ inches (152 to 191 mm), resulting in an installed weight of 325 to 260 pounds, respectively, per 100 square feet (15.9 to 12.7 kg/m²). See Figure 1 [10-inch- and 12-inch-wide (254 and 305 mm) shingles shown] for further details.

3.3 DaVinci Shake Roof Shingle:

The DaVinci Shake roof shingle is available in various colors and in widths of 4, 6, 7, 8 and 9 inches (102, 152, 178, 203 and 229 mm) with a length of 22 inches (559 mm). Exposure is 9 to 10 inches (229 to 254 mm), resulting in an installed weight of 324 to 288 pounds, respectively, per 100 square feet (15.8 to 14 kg/m²). See Figure 1 [9-inch-wide (229 mm) shingle shown] for further details.

3.4 Bellaforté Shake:

The Bellaforté Shake roof shingle is available in various colors and in a width of 12.75 inches (324 mm) and a length of 16.25 inches (413 mm). Exposure is 12 inches (305 mm), resulting in an installed weight of 182 pounds per 100 square feet (8.9 kg/m²). See Figure 2 for further details.

3.5 Bellaforté Slate:

The Bellaforté Slate roof shingle is available in various colors and in a width of 11⁵/₈ inches (295 mm) and a length of 15¹/₂ inches (394 mm). Exposure is 12 inches (305 mm), resulting in an installed weight of 170 pounds per 100 square feet (8.3 kg/m²). See figure 2 for further details.

3.6 Underlayment:

Underlayment must be a minimum of one layer of either Type II (No. 30) asphalt-saturated organic felt, complying with ASTM D226; or GAF Versashield® Fire-Resistant Roof Deck Protection recognized in ICC-ES [ESR-2053](#), unless noted otherwise in this report. Where an ice barrier is required as noted in Section 4.2 of this report, an ICC-ES evaluation report indicating the membrane's compliance with requirements of the ICC-ES Acceptance Criteria for Self-adhered Roof Underlayments for Use as Ice Barriers (AC48) must be submitted to the code official.

3.7 Flashing:

Flashing must be minimum 16-oz/ft² (No. 23 gage) copper or other corrosion-resistant metal with a thickness of not less than 0.019 inch (0.483 mm). See Section 4.5 for valley flashing.

3.8 Fasteners:

No. 12 gage corrosion-resistant roofing nails with ³/₈-inch-diameter (9.5 mm) heads must be used to fasten the ASTM D226 Type II underlayment to the sheathing. Nails must have sufficient length to penetrate into the sheathing

$\frac{3}{4}$ inch (19 mm) or through the sheathing, whichever is less.

Fasteners used to attach GAF Versashield® Fire Resistant Roof Deck Protection must be as described in [ESR-2053](#).

No. 12 gage, ring-shank, corrosion-resistant nails must be used to secure flashing to the sheathing. Nails must be compatible with the flashing material, and have sufficient length to penetrate the sheathing $\frac{3}{4}$ inch (19 mm) or through the sheathing, whichever is less.

To secure the roof shingles to the sheathing, 1 $\frac{1}{2}$ -inch-long-by- $\frac{1}{8}$ -inch-diameter-shank (38 mm by 3.18 mm) hot-dipped galvanized roofing nails, with $\frac{3}{8}$ -inch-diameter (9.5 mm) heads, must be used.

4.0 INSTALLATION

4.1 General:

The roof shingles must be installed in accordance with this report, the applicable code and the manufacturer's published installation instructions. The manufacturer's installation instructions must be available at the jobsite at all times during installation.

The shingles must be installed on roofs with solid sheathing and a minimum slope of 3:12 (25 percent slope). Solid sheathing must be minimum $\frac{15}{32}$ -inch-thick (11.9 mm) exterior-grade plywood, $\frac{7}{16}$ -inch-thick (11.1 mm) oriented strand board (OSB), or nominally 1-inch-thick (25.4 mm) lumber. The sheathing must be structurally adequate and fastened to resist the wind loads as specified by IBC and UBC Section 1609, or IRC Section R301.2, for components and cladding.

4.2 Underlayment:

Underlayment described in Section 3.6 is installed parallel to the roof eave with a 6-inch (152 mm) lap on the ends, a 6-inch (152.4 mm) side lap and a minimum 6-inch (152 mm) lap over eaves. The underlayment is fastened, only as necessary to hold in place. In areas where the average daily temperature in January is 25°F (-4°C) or less, or where there is a possibility of ice forming along the eaves and causing a backup of water, an ice barrier as described in Section 3.6, in addition to the underlayment, is required on all eaves, valleys, and gable ends, and around roof projections. At roof eaves, the ice dam membrane must extend from the eave's edge to a point 24 inches (610 mm) inside the exterior wall line of the building.

4.3 Roof Shingles:

4.3.1 DaVinci Slate and DaVinci Shake Roof Shingles: Starting with a row of 12-inch-wide (305 mm) DaVinci Starter Slates or Shakes, the shingles must extend approximately 1 inch (25.4 mm) over the eaves and $\frac{3}{4}$ inch (19 mm) over the rakes. The shingles are secured to the sheathing using two fasteners, as noted in Section 3.8, through the premolded nail markers.

The field shingles must be installed flush with the starter slate or shake shingles on the outer and lower edges. A maximum gap of $\frac{3}{8}$ inch (9.5 mm) is recommended between shingles, with a minimum $\frac{1}{4}$ -inch (6.4 mm) gap required. The gaps between shakes at adjacent courses must be offset a minimum of 1 $\frac{1}{2}$ inches (38 mm). The maximum allowable exposure is 7 $\frac{1}{2}$ inches (191 mm) for Slateroof shingles, and 10 inches (254 mm) for Shake roof shingles.

4.3.2 Bellaforté Shake and Bellaforté Slate Roof Shingles: Bellaforté Shake (12.75 inches wide [324 mm]) or Bellaforté Slate (11 $\frac{5}{8}$ inches wide (295 mm)) must be

installed on top of starter tiles and must extend approximately 1 inch (25.4 mm) over the eaves. The shingles are secured to the sheathing using three fasteners as noted in Section 3.8, two through the premolded nail markers and one through the tab.

The field shingles must be installed flush with the starter slate or shake shingles on the lower edges.

4.4 Hips and Ridges:

4.4.1 General: The top of hips and ridges must be covered with a minimum 6-inch-wide (152 mm) flashing as noted in Section 3.7.

4.4.2 DaVinci Slate Roof Shingles: On top of the flashing, 76-inch-wide (178 152 mm) or 7-inch-wide (178 mm) DaVinci Slate roof shingles are installed on each side of hips and ridges, with the shingles butting at the top. Both hip and ridge shingles must be installed with a 6-inch (152 mm) exposure. Shingles and flashing must be secured with fasteners as noted in Section 3.8.

4.4.3 DaVinci Shake Roof Shingles: On top of the flashing, 6-inch-wide (152 mm) DaVinci Shake roof shingles are installed on each side of hips and ridges, with the shingles butting at the top. Both hip and ridge shingles must be installed with a 10-inch (254 mm) exposure. Shingles and flashing must be secured with fasteners as noted in Section 3.8.

4.4.4 Bellaforté Shake: Bellaforté Shake one-piece hip and ridge tiles are installed at a 12-inch (305 mm) exposure. The tiles are nailed once on each side approximately $\frac{3}{4}$ inch (19 mm) from the outside edge and 12 $\frac{1}{2}$ inches (305 mm) from the butt of the tile. Shingles and flashing must be secured with fasteners as noted in Section 3.8.

4.4.5 Bellaforté Slate: Bellaforté Slate one piece hip and ridge tiles are installed at a 12-inch (305 mm) exposure. The tiles are nailed once on each side approximately $\frac{3}{4}$ inches (19 mm) from the outside edge and 12 $\frac{1}{2}$ inches (318 mm) from the butt of the tile. Shingles and flashing must be secured with fasteners as noted in Section 3.8.

4.5 Valleys:

Valleys must be flashed in accordance with 2009 IBC Section 1507.7.7, 2006 IBC Section 1507.7.6, IRC Section R905.6.6 or UBC Section 1508.4, as applicable, and the manufacturer's published installation instructions, using the flashing and fasteners described in Sections 3.7 and 3.8, respectively.

4.6 Fire Classification:

The roof shingles comply with IBC Section 1505.2, IRC Section R902.1 and UBC Standard 15-2 as a Class A roof covering, when installed in accordance with Section 4.6.1, 4.6.2, 4.6.3, or 4.6.4:

4.6.1 DaVinci Slate Roof Shingles: When the shingles are installed with a maximum 6-inch (152 mm) exposure, the underlayment must be either a minimum of one layer of Type II (No. 30) asphalt-saturated organic felt, complying with ASTM D226; or a minimum of one layer of GAF Versashield® Fire-Resistant Roof Deck Protection as recognized in [ESR-2053](#). When the shingles are installed with a maximum exposure of 7 $\frac{1}{2}$ inches (191 mm), the underlayment must be a minimum of one layer of the GAF product mentioned above.

4.6.2 DaVinci Shake Roof Shingles: The underlayment must be a minimum of one layer of GAF Versashield® Fire-Resistant Roof Deck Protection as recognized in [ESR-2053](#).

4.6.3 Bellaforté Shake: When the shakes are installed with a maximum 12-inch (304 mm) exposure, the underlayment must be a minimum of one layer of Type II (No. 30) asphalt-saturated organic felt complying with ASTM D226, plus one layer of mineral-surfaced cap sheet complying with ASTM D3909.

4.6.4 Bellaforté Slate: When the shingles are installed with a maximum 12-inch (305 mm) exposure, the underlayment must be a minimum of two layers of Type II, (No. 30) asphalt-coated glass-fiber-mat, complying with ASTM D226.

4.7 Wind Resistance:

4.7.1 DaVinci Roof Shingles: The DaVinci Slate and DaVinci Shake roof shingle system described in Section 3.0 and installed in accordance with Sections 4.1 through 4.5 has an allowable wind uplift resistance of 50 pounds per square foot (2.39 kPa).

4.7.2 Bellaforté Shake Roof Shingle:

4.7.2.1 2012 IBC: When installed in accordance with this report, the Bellaforté Shake roof shingle system is limited to areas subject to a maximum ultimate design wind speed (V_{ult}) of 130 mph (209 km/h) in accordance with 2012 IBC Figure 1609, on structures having a maximum mean roof height of 60 feet (18.3 m).

4.7.2.2 2009 and 2006 IBC: When installed in accordance with this report, the Bellaforté Shake roof shingle system is limited to areas subject to a maximum basic wind speed of 100 mph (161 km/h) in accordance with 2009 or 2006 IBC Figure 1609, as applicable, on structures having a maximum mean roof height of 60 feet (18.3 m).

4.7.2.3 IRC: When installed in accordance with this report, the Bellaforté Shake roof shingle system is limited to areas subject to a maximum basic wind speed of 100 mph (161 km/h) in accordance with 2012 IRC Figure R301.2(4)A, or 2009 or 2006 IRC Figure R301.2(4), as applicable, on structures having a maximum mean roof height of 40 feet (12.2 m).

4.7.3 Bellaforté Slate Roof Shingles: The Bellaforté Slate roof shingle system described in Section 3.0 and

installed in accordance with Sections 4.1 through 4.5 has an allowable wind uplift resistance of 75 pounds per square foot (11.2 kPa).

4.8 Reroofing:

Prior to application of the shingles, the existing roof covering and underlayment must be completely removed. Any damaged sheathing must be replaced. The installation of the shingles must then proceed as described in Sections 4.1 through 4.5. An existing self-adhered ice barrier membrane may remain in place if covered with a new ice barrier membrane in accordance with the applicable code. The roof classification is as noted in Section 4.6

5.0 CONDITIONS OF USE

The DaVinci Slate, DaVinci Shake, Bellaforté Shake, and Bellaforté Slate roof shingles described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with the applicable code, the manufacturer's published installation instructions and this report. The instructions within this report govern if there are any conflicts between the manufacturer's installation instructions and this report.

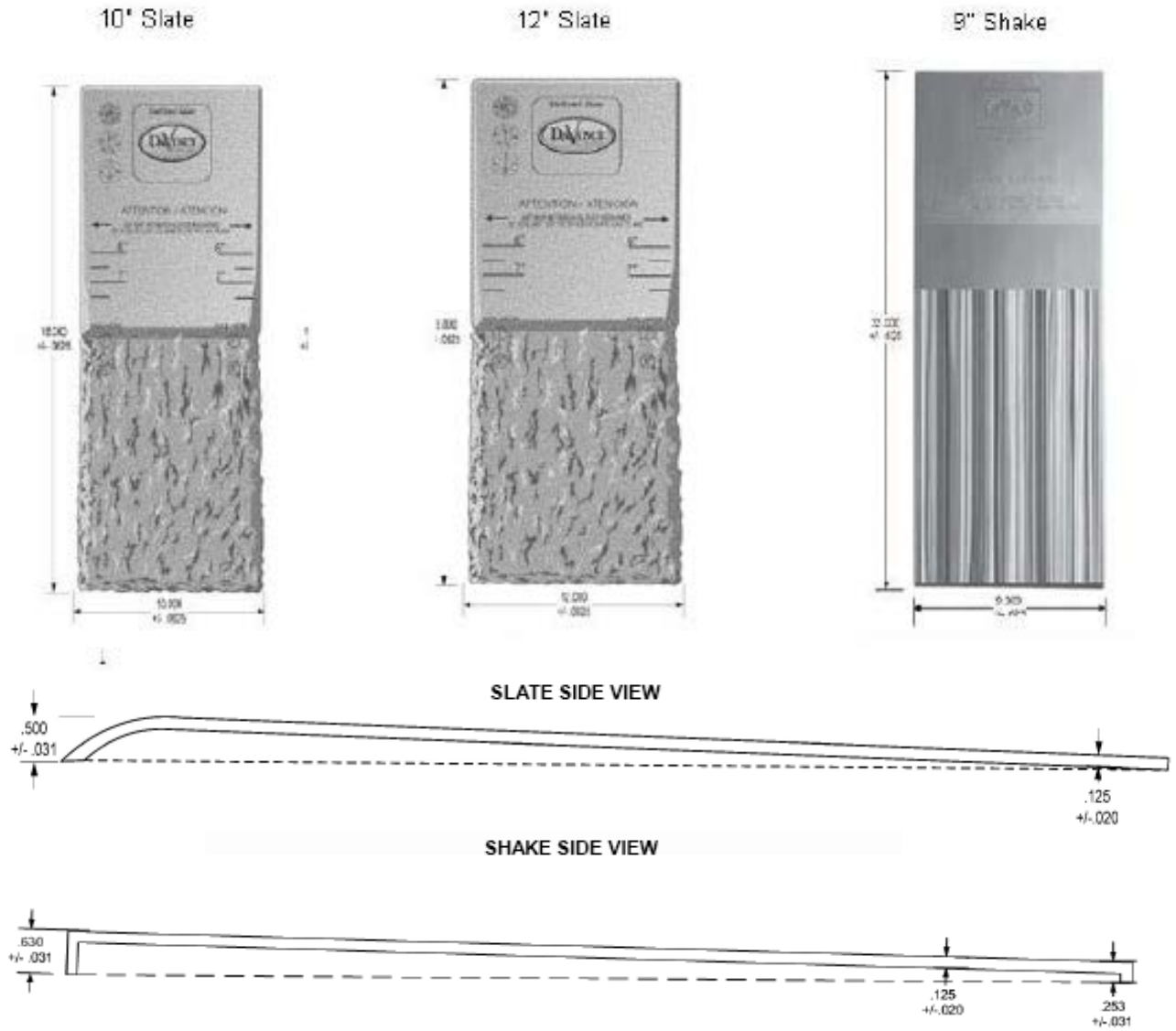
5.2 The roof shingles are manufactured in Lenexa, Kansas, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Special Roofing Systems (AC07), dated February 2014.

7.0 IDENTIFICATION

Each roof shingle is labeled with the report holder's name (DaVinci Roofscapes, LLC) and address, the product name, the shingle width, a production date code, and the ICC-ES evaluation report number (ESR-2119).



For SI: 1 inch = 25.4 mm.
NOTE: Narrower shingles similar

FIGURE 1—DaVINCI SLATE ROOF SHINGLES AND SHAKE ROOF SHINGLES



FIGURE 2—BELLAFORTÉ SHAKE



FIGURE 3—BELLAFORTÉ SLATE