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DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07320—Roof Tiles

REPORT HOLDER:

UNITED STATES TILE COMPANY
909 RAILROAD STREET
CORONA, CALIFORNIA 92882-1906
(951) 737-0200
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EVALUATION SUBJECT:

PROSHAKE PLUS CLAY ROOFING TILES

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)

Properties evaluated:

- Roof covering
- Fire classification
- Wind resistance

2.0 USES

The ProShake Plus clay roofing tiles are classified as Class A roof coverings in accordance with IBC Section 1505.2 and IRC Section R902.1, and are noncombustible roof coverings in accordance with UBC Section 1504.2.

3.0 DESCRIPTION

The roofing tiles are vitrified clay products, manufactured in two different surface textures, identified as Profile "A" and Profile "B". Tile profiles are illustrated in Figure 1. The tiles are extruded and pressed into molds, then cured in a drying chamber. Tiles are then glazed or left unglazed and fired in a tunnel kiln. The glazed or unglazed tiles are 14 inches (356 mm) long, 8.5 inches (216 mm) wide and 1 inch thick (25 mm), and have two nail holes at the head of the tile. Interlocking details on the left side and the head of the tile consist of water bars and weather channels, respectively, and provide for installation with an 0.8-inch (20.32 mm) side lap and a minimum 2¹/₄-inch (57 mm) head lap. The installed weight of the tiles is 5.9 pounds per square foot (28.8 kg/m²) when installation is with a 2¹/₄-inch (57 mm) head lap and tiles comply with the wet transverse breaking strength requirements

of ASTM C 1167. The tiles conform to the Grade 1 physical requirements of ASTM C 1167.

4.0 INSTALLATION

4.1 General:

Except as noted in this report, the roof tiles must be installed in accordance with the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, published by the Roof Tile Institute and recognized in ICC-ES evaluation report [ESR-2015P](#). Installation must be over code-complying solid sheathing with a minimum slope of 3:12 (25 percent slope). The bottom edge of tiles installed on roof slopes exceeding 21:12 (175 percent slope) must be secured with an approved clip or nail. For roof slopes between 3:12 (25 percent) and 4:12 (33 percent), the tiles must be installed over solid sheathing with two layers of underlayment. For roof slopes between 2:12 (16 percent slope) and 3:12 (25 percent slope), the tiles are considered decorative and must be applied over solid sheathing over a code-complying roof covering, subject to approval by the code official. The roof tiles must be fastened to the sheathing in accordance with Table 1 or 2 of this report. In jurisdictions subject to snow, a minimum of two fasteners are required per tile. The roof deck must be minimum 7¹/₁₆-inch-thick (11.1 mm) oriented strand board or 15¹/₃₂-inch-thick (11.9 mm) plywood. Fasteners must have a minimum corrosion resistance of ASTM A 641 Class 1 and must be of sufficient length to penetrate 3³/₄ inch (19 mm) into or through the thickness of the sheathing. Nails must be minimum No. 11 gage [0.1196 inch (3.03 mm)] and have minimum 3³/₈-inch-diameter (9.1 mm) heads. Screws must be No. 8 flat head wood screws having a minimum 0.135-inch (3.43 mm) shank diameter and minimum 0.335-inch (8.51 mm) head diameter.

4.2 Roof Covering Classification:

When installed in accordance with this report, the roof tiles are Class A roof coverings in accordance with IBC Section 1505.2 and IRC Section R902.1, and are noncombustible roof coverings in accordance with UBC Section 1504.2.

5.0 CONDITIONS OF USE

The ProShake Plus clay roofing tiles 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 The tiles are manufactured, identified and installed in accordance with this report and the manufacturer's published installation instructions. If there is a conflict between this report and the manufacturer's published installation instructions, this report governs.

*Revised January 2008

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5.2 The tiles are manufactured at the Boral Montoro manufacturing facility in New South Wales, Australia.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Clay and Concrete Tiles (AC180), dated October 2005.

7.0 IDENTIFICATION

The center, underside of each tiles are embossed with the words "BORAL US TILE PROSHAKE PLUS A" or "BORAL US TILE PROSHAKE PLUS B", and the front face of each tile, between the nail holes, is embossed with either "A" or "B". Additionally, each shipping pallet is identified by an attached tag bearing the evaluation report number (ESR-1273) and the installed weight.

TABLE 1—MAXIMUM WIND SPEEDS—IBC AND IRC

SHEATHING	MINIMUM THICKNESS (in.)	FASTENER(S)	BUILDING HEIGHT (ft)	MAXIMUM BASIC (3-SECOND GUST) WIND SPEED			
				2.25-inch Headlap			
				Slope: 3:12 to 7:12		Slope: > 7:12	
				Exposure B	Exposure C	Exposure B	Exposure C
Plywood	15/32	1 screw	20	106	94	136	120
			40	102	87	130	111
			60	97	84	124	107
Plywood	15/32	2 screws	20	170	151	170	170
			40	164	140	170	170
			60	155	135	170	170
Plywood	15/32	1 nail	20	92	81	118	104
			40	88	75	113	96
			60	83	72	107	92
Plywood	15/32	2 nails	20	115	101	146	129
			40	110	94	141	120
			60	104	90	133	115
OSB	7/16	1 screw	20	117	103	149	132
			40	112	96	143	123
			60	106	92	136	118
OSB	7/16	2 screws	20	153	135	170	170
			40	147	126	170	160
			60	139	120	170	154
OSB	7/16	2 nails	20	87	77	111	98
			40	84	71	100	91
			60	79	69	101	88

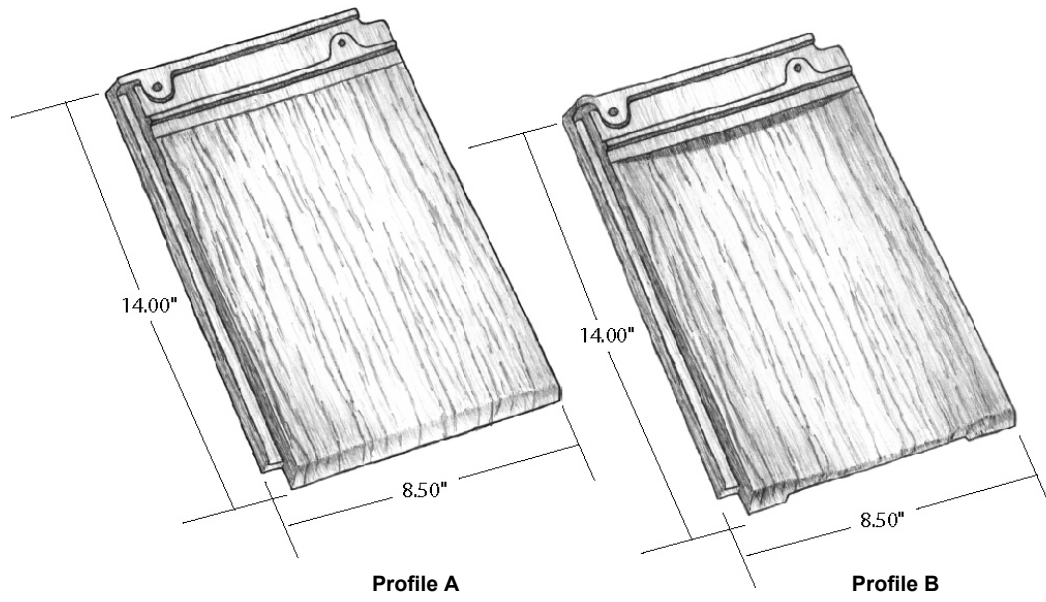
For SI: 1 mph = 1.61 km/h, 1 inch = 25.4 mm, 1 foot = 304.8 mm.

¹Topographic effects, located in any exposure category, is designed in accordance with Section 6.5.7 of ASCE 7.

TABLE 2—MAXIMUM WIND SPEEDS—UBC

SHEATHING	MINIMUM THICKNESS (in.)	FASTENER(S)	BUILDING HEIGHT (ft)	MAXIMUM BASIC (FASTEST MILE) WIND SPEED			
				2.25-inch Headlap			
				Slope: 3:12 to 7:12		Slope: > 7:12	
				Exposure B	Exposure C	Exposure B	Exposure C
Plywood	15/32	1 screw	20	115	89	130	105
			40	103	82	130	105
			60	92	76	118	97
Plywood	15/32	2 screws	20	130	130	130	130
			40	130	130	130	130
			80	130	122	130	130
Plywood	15/32	1 nail	20	99	77	127	98
			40	89	71	113	91
			80	80	66	102	84
Plywood	15/32	2 nails	20	124	96	130	122
			40	111	89	130	113
			80	100	82	130	105
OSB	7/16	1 screw	20	104	130	130	130
			40	96	121	127	123
			60	92	113	119	118
OSB	7/16	2 screws	20	130	128	130	130
			40	130	118	130	130
			80	130	110	130	130
OSB	7/16	2 nails	20	94	73	120	90
			40	84	67	107	86
			80	76	62	96	80

For SI: 1 mph = 1.61 km/h, 1 inch = 25.4 mm, 1 foot = 304.8 mm.



For SI: 1 Inch = 25.4 mm.

FIGURE 1—TYPICAL PROSHAKE PLUS TILE PROFILES