

ICC-ES Evaluation Report

ESR-1573*

Reissued December 1, 2007

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DIVISION: 06—WOOD AND PLASTICS
Section: 06500—Structural Plastics**REPORT HOLDER:****UFP VENTURES II, INC.**
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PRAIRIE DU CHIEN, WISCONSIN 53821
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www.ufpi.com**EVALUATION SUBJECT:****LATITUDES® SOLID (ALSO KNOWN AS VERANDA® SOLID), LATITUDES® SLOTTED (ALSO KNOWN AS VERANDA® SLOTTED), LATITUDES® CAPRICORN (ALSO KNOWN AS VERANDA® TROPICAL) AND LATITUDES® MARINE BOARD (ALSO KNOWN AS VERANDA® MARINE BOARD) WOOD PLASTIC COMPOSITE DECK BOARDS, AND EQUATOR® HIDDEN FASTENER SYSTEM****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Structural
- Durability
- Surface-burning characteristics

2.0 USES

Latitudes® Solid (also known as Veranda® Solid), Latitudes® Slotted (also known as Veranda® Slotted), Latitudes® Capricorn (also known as Veranda® Tropical) and Latitudes® Marine Board (also known as Veranda® Marine Board) wood plastic composite deck boards evaluated in this report are limited to exterior use as deck boards for balconies, porches, stair treads, and decks of buildings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC and IBC.

3.0 DESCRIPTION**3.1 General:**

Latitudes® Solid (also known as Veranda® Solid), Latitudes® Slotted (also known as Veranda® slotted), Latitudes® Capricorn (also known as Veranda® Tropical) and Latitudes® Marine Board (also known as Veranda® Marine Board) products described in this report are wood

thermoplastic composite lumber (WTCL) consisting of a minimum of 50 percent wood flour and a maximum of 50 percent high-density polyethylene and other processing additives. Latitudes® is manufactured by an extrusion process in accordance with the approved quality assurance manual in four colors (redwood, cedar, gray and walnut). Latitudes® Capricorn has a 1/32-inch-thick (0.8 mm) polyethylene coating embossed on top and bottom surfaces. Figure 1 provides dimensioned cross-sectional profiles of each board type.

The Equator® Hidden Fastener System consists of a plastic clip made of polypropylene copolymer and No. 8 by 2-inch-long (51 mm) square drive stainless steel screws with 0.22-inch (5.6 mm) head diameters. The Equator® Hidden Fastener System is designed specifically for attachment of Latitudes® Slotted and Latitudes® Capricorn deck boards. See Figure 2.

3.2 Deck Boards:

Latitudes® Solid (also known as Veranda® Solid), Latitudes® Slotted (also known as Veranda® slotted), Latitudes® Capricorn (also known as Veranda® Tropical) and Latitudes® Marine Board (also known as Veranda® Marine Board) wood plastic composite deck boards are manufactured in different sizes ranging from 0.9 inch by 5.2 inches (22.9 mm by 132.1 mm) to 1.25 inch by 5.4 inches (31.7 mm by 137.2 mm). The deck boards are all solid boards, with Latitudes® Slotted and Latitudes® Capricorn having two keyhole slot openings of 0.15 inch by 0.38 inch (3.8 by 9.7 mm) on each board edge to allow for fastener attachments.

3.3 Durability:

When subjected to weathering, insect attack, and other decaying elements, the material used to manufacture the deck board products is equivalent in durability to preservative-treated or naturally durable lumber when used in locations described in Section 2.0 of this report. The deck boards have been evaluated for use within a temperature range of -20F to 125F (-29C to 52C).

3.4 Surface-burning Characteristics:

When tested in accordance with ASTM E 84, the deck board products have a flame-spread index no greater than 200.

4.0 DESIGN AND INSTALLATION**4.1 General:**

Installation of deck boards must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must

***Revised October 2009**

be available at the jobsite at all times during installation. When the manufacturer's published installation instructions differ from this report, this report governs.

4.2 Deck Boards:

4.2.1 Structural: Latitudes[®] Solid (also known as Veranda[®] Solid), Latitudes[®] Slotted (also known as Veranda[®] slotted), Latitudes[®] Capricorn (also known as Veranda[®] Tropical) and Latitudes[®] Marine Board (also known as Veranda[®] Marine Board), when used as a deck board, have allowable capacity, when installed at a maximum center-to-center spacing of the supporting construction as prescribed in Table 1. A minimum of 1/4 inch (6.4 mm) side gapping must be provided between the decking materials and any permanent structure or post.

4.2.2 Fasteners:

4.2.2.1 Latitudes[®] Solid (also known as Veranda[®] solid), and Latitudes[®] Marine Board (also known as Veranda[®] Marine Board): The boards must be attached at each joist using two No. 9 by 2 1/2-inch-long (64 mm) corrosion-resistant screws. The maximum allowable fastener head pull-through load is 303 lbf (1348 N) per fastener. Fasteners located within 1 1/2 inch (38 mm) of board ends must be predrilled.

4.2.2.2 Latitudes[®] Slotted (also known as Veranda[®] slotted) and Latitudes[®] Capricorn (also known as Veranda[®] Tropical): The boards are attached at each joist using the Equator[®] Hidden Fastener and one No. 8 by 2-inch-long (51 mm) stainless steel, square drive screw with 0.22-inch (5.6 mm) head diameter through the plastic clip. The fastener wings must remain level with the joist for the boards to fit correctly. The Latitudes[®] Slotted and Latitudes[®] Capricorn deck boards must be attached to the outside and inside edges of the deck with No. 8 by 2-inch-long (51 mm) corrosion-resistant traditional screws at 16 inches on center. Fasteners located within 1 1/2 inches (38 mm) of board ends must be predrilled. The Equator[®] Hidden Fasteners have allowable negative pressure of 80 psf (3830 Pa).

4.2.2.3 Deck Boards to Rim Joists: The boards must be attached to rim joist with one No. 8 or No. 9 by 2 1/2-inch-long (64 mm) corrosion-resistant screw spaced at 16 inches (406 mm) on center.

4.3 Deck Boards Used as Stair Treads:

Latitudes[®] Solid (also known as Veranda[®] Solid), Latitudes[®] Slotted (also known as Veranda[®] slotted), Latitudes[®] Capricorn (also known as Veranda[®] Tropical) and Latitudes[®] Marine Board (also known as Veranda[®] Marine Board), when used as stair treads, are satisfactory to resist the code-prescribed concentrated load of 300 lbf (1.33 kN) when installed at a maximum center-to-center spacing of the supporting construction as shown in Table 2.

5.0 CONDITIONS OF USE

Latitudes[®] Solid (also known as Veranda[®] Solid), Latitudes[®] Slotted (also known as Veranda[®] Slotted), Latitudes[®] Capricorn (also known as Veranda[®] Tropical) and Latitudes[®] Marine Board (also known as Veranda[®] Marine Board) wood plastic composite deck boards 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 These products are limited to exterior use as a deck board for balconies, porches, stair treads, and decks of buildings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.
- 5.2 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. Only those fasteners and fastener configurations described in this report have been evaluated for the installation of Latitudes[®] Solid (also known as Veranda[®] Solid), Latitudes[®] Slotted (also known as Veranda[®] Slotted) Latitudes[®] Capricorn and Latitudes[®] Marine Board. In the event of conflict between this report and the manufacturer's published installation instructions, this report governs.
- 5.3 The use of deck boards as a component of a fire-resistance-rated assembly is outside the scope of this report.
- 5.4 The compatibility of the fasteners with the supporting construction, including chemically treated wood, is outside the scope of this report.
- 5.5 Adjustment factors outlined in the AF&PA *National Design Standard* and applicable codes must not apply to the allowable capacity and maximum spans for deck boards.
- 5.6 The deck boards must be directly fastened to supporting construction. Where required by the code official, engineering calculations and construction documents consistent with this report must be submitted for approval. The calculations must verify that the supporting construction complies with the applicable building code requirements and is adequate to resist the loads imparted upon it by the products and systems discussed in this report. The documents must contain details of the attachment to the supporting structure consistent with the requirements of this report. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.7 The deck boards are produced by UFP Ventures II in Prairie du Chien, Wisconsin, under a quality control program with inspections by PFS Corporation (AA-652).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated February 2007 2008, editorially revised April 2008.

7.0 IDENTIFICATION

The deck boards described in this report must be identified by a stamp on each individual piece bearing the manufacturer's name (UFP Ventures II, Inc.) or the company name, the product name, the name of the inspection agency (PFS Corporation) and the ICC-ES evaluation report number (ESR-1573).

TABLE 1—DECK BOARD SPAN RATINGS

DECK BOARD	MAXIMUM SPAN (in) ¹	ALLOWABLE CAPACITY (lbf/ft ²) ²
Latitudes [®] Solid (also known as Veranda [®] Solid) at 90° to supporting joist	16	100
Latitudes [®] Solid (also known as Veranda [®] Solid) at 45° to supporting joist	12	100
Latitudes [®] Slotted (also known as Veranda [®] Slotted) or Latitudes [®] Capricorn at 90° to supporting joist	16	100
Latitudes [®] Slotted (also known as Veranda [®] Slotted) or Latitudes [®] Capricorn at 45° to supporting joist	12	100
Latitudes [®] Marine Board at 90° to supporting joist	24	100

For SI: 1 inch = 25.4 mm; 1 lbf/ft² = 47.9 Pa.

¹Maximum span is measured center-to-center perpendicular, of the supporting construction.

²Maximum allowable capacity is adjusted for durability. No further increases are permitted.

TABLE 2—MAXIMUM STAIR TREAD SPANS

PRODUCT	MAXIMUM SPAN (in) ¹
Latitudes [®] Slotted (also known as Veranda [®] Slotted), Latitudes [®] Solid (also known as Veranda [®] Solid) at 90° to supporting stringer	8 ²
Latitudes [®] Slotted (also known as Veranda [®] Slotted), Latitudes [®] Solid (also known as Veranda [®] Solid) at 90° to supporting stringer	12 ³
Latitudes [®] Marine Board at 90° to supporting stringer	12

For SI: 1 inch = 25.4 mm; 1 lbf/ft² = 47.9 Pa.

¹Maximum span is measured center-to-center perpendicular, of the supporting construction.

²For use as a stair tread with a one-span condition.

³For use as a stair tread with a two-span condition.

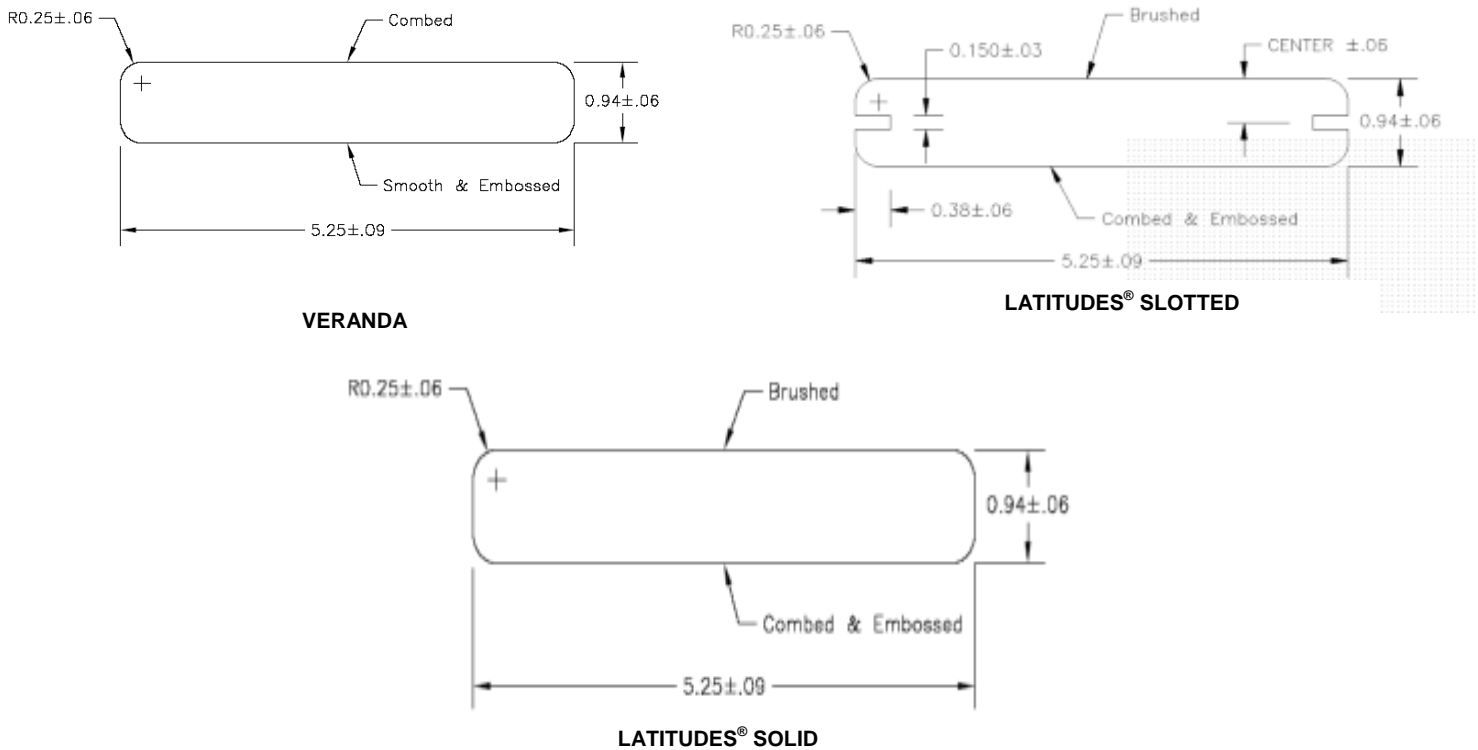


FIGURE 1—DECK BOARD PROFILES

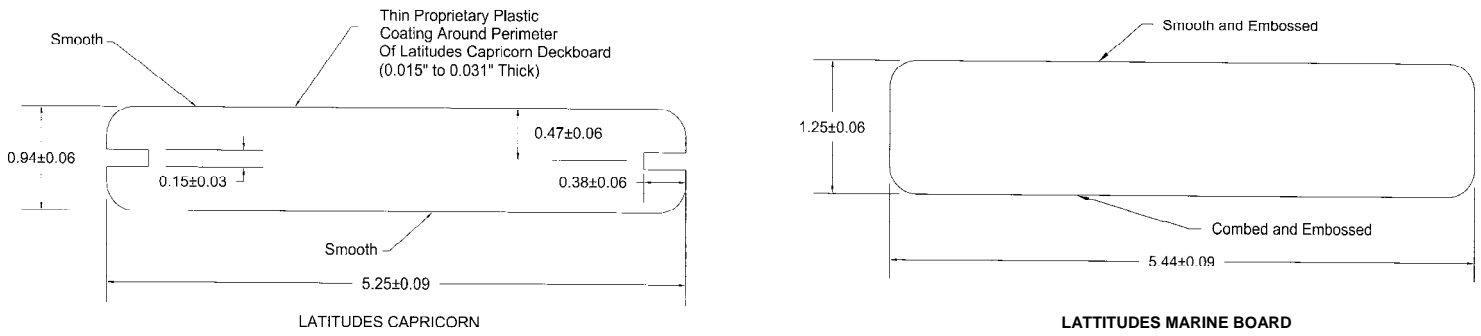


FIGURE 1—DECK BOARD PROFILES (Continued)

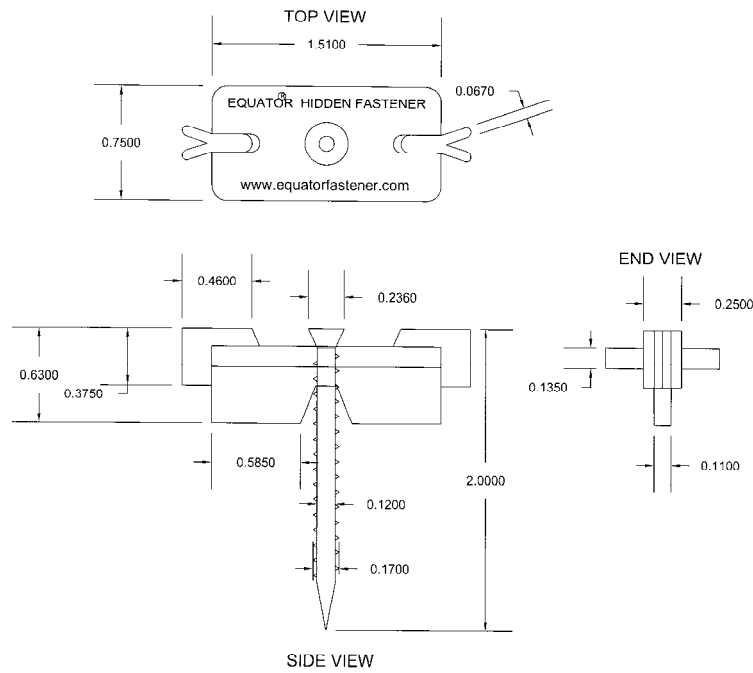


FIGURE 2—EQUATOR® HIDDEN FASTENER SYSTEM