

ICC-ES Evaluation Report

ESR-1573

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DIVISION: 06 00 00—WOOD, PLASTICS, AND COMPOSITES

Section: 06 53 00—Plastic Decking

REPORT HOLDER:

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EVALUATION SUBJECT:

SOLID WOOD COMPOSITE PLASTIC DECK BOARDS: LATITUDES CAPTIVA™—SOLID EDGE (ALSO KNOWN AS LATITUDES CAPRICORN®—SOLID EDGE AND WOLF-SOLID), LATITUDES CLASSIC—SOLID EDGE (ALSO KNOWN AS VERANDA®—SOLID EDGE AND LATITUDES WAVE-SOLID EDGE), LATITUDES INTREPID™—SOLID EDGE, LATITUDES® MARINE BOARD (ALSO KNOWN AS VERANDA® MARINE BOARD), STYLE SELECTIONS—SOLID EDGE, AND EVERX™

SLOTTED WOOD COMPOSITE PLASTIC DECK BOARDS: LATITUDES CAPTIVA™—SLOTTED (ALSO KNOWN AS LATITUDES CAPRICORN®—SLOTTED AND WOLF-SLOTTED), LATITUDES CLASSIC—SLOTTED (ALSO KNOWN AS VERANDA®—SLOTTED), LATITUDES INTREPID™—SLOTTED, LATITUDES WAVE—SLOTTED, STYLE SELECTIONS—SLOTTED

FASTENER SYSTEMS: EQUATOR® HIDDEN FASTENER SYSTEM AND TREX HIDEAWAY® PLASTIC HIDDEN FASTENER SYSTEM

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)

Properties evaluated:

- Structural
- Durability
- Surface-burning characteristics

2.0 USES

The wood plastic composite deck boards described 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. Deck boards for use as stair treads are limited to the deck boards in Section 4.3.

3.0 DESCRIPTION

3.1 General:

The deck boards 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. The deck boards are manufactured by an extrusion process in accordance with the approved quality assurance manual in four colors (redwood, cedar, gray and walnut). Latitudes Capricorn, Latitudes Captiva, and Style Selections have a 1/32-inch-thick (0.8 mm) polyethylene coating embossed on top. The deck boards are either solid or slotted.

3.2 Deck Boards:

3.2.1 Solid Edge (Unslotted) Deck Boards: The solid edge deck boards include Latitudes Captiva—Solid Edge, Latitudes Classic—Solid Edge, Latitudes Intrepid—Solid Edge, Latitudes Marine Board, Style Selections—Solid Edge, and Everx. See Figure 1 for dimensions of solid edge deck boards.

3.2.2 Slotted Deck Boards: The slotted deck boards include Latitudes Captiva—Slotted, Latitudes Classic—Slotted, Latitudes Intrepid—Slotted, Latitudes Wave—Slotted, and Style Selections—Slotted. The boards are slotted on each side for the use a hidden fastener system. The two types of hidden fastener systems recognized in this report are the Equator Hidden Fastener System and the Trex Hideaway Plastic Hidden Fastener System. See Figure 2 for dimensions of slotted deck boards.

3.2.3 Fastener Systems:

3.2.3.1 Equator Hidden Fastener System: 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 system is used with the slotted deck boards listed in Section 3.2.2. See Figure 3 for dimension of fastener system.

3.2.3.2 Trex Hideaway Plastic Hidden Fastener System: The Trex Hideaway Plastic Hidden Fastener System consists of a plastic clip and a No. 8 by 1.625-inch-long (41.3 mm) stainless steel flathead screw. The system is an alternative fastener system for the Style Selections—Slotted.

3.3 Durability:

When subjected to weathering, insect attack including Formosan termites, 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 -20°F to 125°F (-29°C to 52°C).

3.4 Surface-burning Characteristics:

When tested in accordance with ASTM E84, 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 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: The wood plastic composite deck boards have an allowable capacity, when installed at a maximum center-to-center spacing of the supporting construction as prescribed in Table 1. A minimum of $\frac{1}{4}$ 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 Solid deck boards: The solid deck boards described in Section 3.2.1 must be attached at each joist using two No. 7 by $2\frac{1}{2}$ -inch-long (64 mm) corrosion-resistant wood screws. The maximum allowable fastener head pull-through load is 296 lbf (1348 N) per fastener. Fasteners located within $1\frac{1}{2}$ inch (38 mm) of board ends must be predrilled.

4.2.2.2 Slotted deck boards:

4.2.2.2.1 Installation of the Equator Hidden Fastener System: The slotted deck boards described in Section 3.2.2 must be attached at each joist using the Equator Hidden Fastener System. The fastener wings must remain level with the joist for the boards to fit correctly. The 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 $1\frac{1}{2}$ inches (38 mm) of board ends must be predrilled. When installed in accordance with this section, the boards have an allowable capacity of 80 psf (3830 Pa). See Figure 3.

4.2.2.2.2 Installation of the Trex Hideaway Plastic Hidden Fastener System: The Trex Hideaway Plastic Hidden Fastener System as described in Section 3.2.3.2 is an alternative hidden fastener system for the Style Selections—Slotted deck boards. When the boards are installed on supports having a maximum span of 16 inches (406 mm) on center using the Trex Hideaway Plastic Hidden Fastener System installed at each joist, the boards have an allowable capacity of 100 psf (4788 Pa).

4.2.2.2.3 Deck Boards to Rim Joists: The boards must be attached to rim joists with one No. 8 or No. 9 by $2\frac{1}{2}$ -inch-long (64 mm) corrosion-resistant screw spaced at 16 inches (406 mm) on center.

4.3 Deck Boards Used as Stair Treads:

The wood plastic deck boards, 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

The 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** The deck boards listed in Table 1 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.
- 5.2** The deck boards listed in Table 2 are limited to exterior use as deck boards only for balconies, porches and decks of buildings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.
- 5.3** 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 deck boards mentioned in Section 4.2.2 of this report. In the event of conflict between this report and the manufacturer's published installation instructions, this report governs.
- 5.4** The use of deck boards as a component of a fire-resistance-rated assembly is outside the scope of this report.
- 5.5** The compatibility of the fasteners with the supporting construction, including chemically treated wood, is outside the scope of this report.
- 5.6** 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.
- 5.7** 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.
- 5.8** 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 January 2012.

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 span rating for use as deck board, the allowable span and allowable load for use as deck board or as a stair tread, 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	ALSO KNOWN AS:	DECK BOARD INSTALLED AT X° TO SUPPORTING JOIST:	MAXIMUM SPAN (in) ¹	ALLOWABLE CAPACITY (lbf/ft ²) ²
Solid Edge Deck Boards				
Latitudes Captiva—Solid Edge	Latitudes Capricorn—Solid Edge Wolf-Solid	45°	12	100
		90°	16	100
Latitudes Classic—Solid Edge	Veranda—Solid Edge Latitudes Wave-Solid Edge	45°	12	100
		90°	16	100
Latitudes Intrepid—Solid Edge	—	45°	12	100
		90°	16	100
Latitudes Marine Board	Veranda Marine Board	45°	16	100
		90°	24	100
Style Selections—Solid Edge	—	45°	12	100
		90°	16	100
EverX	—	45°	12	100
		90°	16	100
Slotted Deck Boards				
Latitudes Captiva—Slotted	Latitudes Capricorn—Slotted Wolf-Slotted	45°	12	100
		90°	16	100
Latitudes Classic—Slotted	Veranda—Slotted	45°	12	100
		90°	16	100
Latitudes Intrepid—Slotted	—	45°	12	100
		90°	16	100
Latitudes Wave—Slotted	—	45°	12	100
		90°	16	100
Style Selections—Slotted	—	45°	12	100
		90°	16	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.

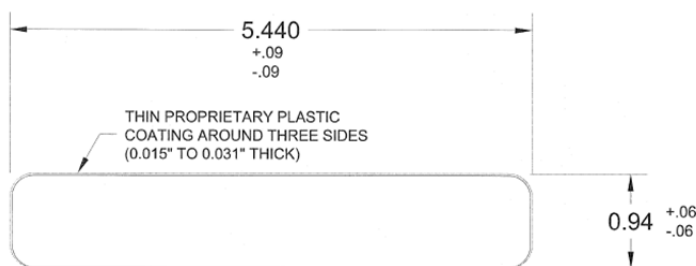
TABLE 2—MAXIMUM STAIR TREAD SPANS

DECK BOARD	ALSO KNOWN AS:	SPAN CONDITION	MAXIMUM SPAN (in) ^{1,2}
Solid Edge Deck Board			
Latitudes Marine Board	Veranda Marine Board	One-span	12
Latitudes Captiva—Solid Edge	Latitudes Capricorn—Solid Edge Wolf-Slotted	Two-span	12
Latitudes Classic—Solid Edge	Veranda—Solid Edge Latitudes Wave-Solid Edge		
Latitudes Intrepid—Solid Edge	—		
EverX	—	Two-span	8
Slotted Deck Board			
Latitudes Classic—Slotted	Veranda—Slotted	Two-span	12
Latitudes Intrepid—Slotted	—		
Style Selections—Solid	—		

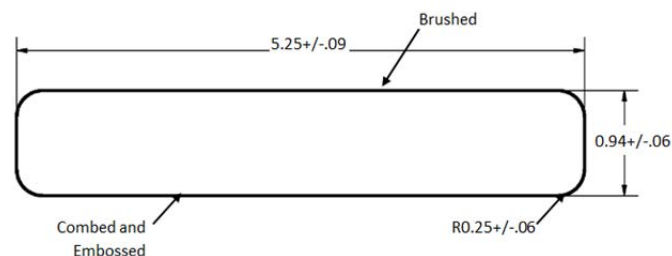
For **SI**: 1 inch = 25.4 mm; 1 lbf/ft² = 47.9 Pa.

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

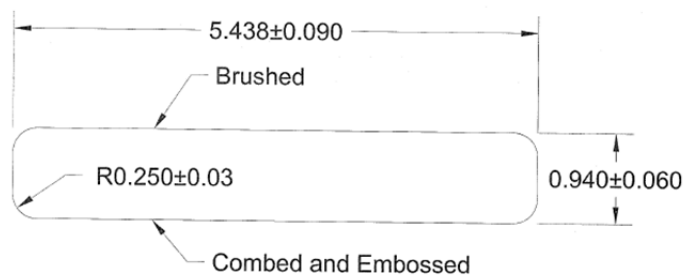
²Deck boards installed at 90° to supporting stringer.



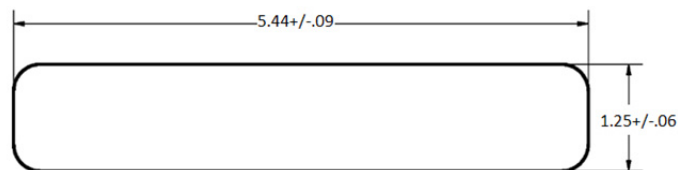
LATITUDES CAPTIVA—SOLID EDGE
(Also known as Latitudes Capricorn—Solid Edge and Wolf—Solid Edge)



LATITUDES CLASSIC—SOLID EDGE
(Also known as Veranda—Solid Edge and Latitudes Wave—Solid Edge)

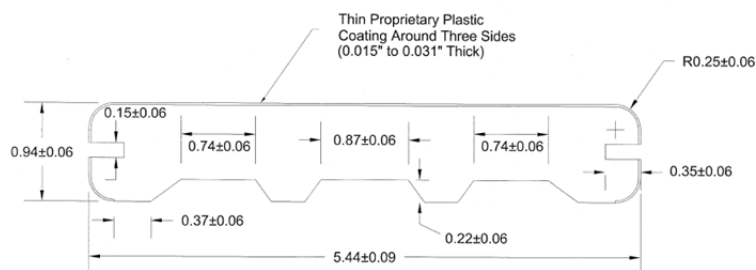


LATITUDES INTREPID—SOLID EDGE

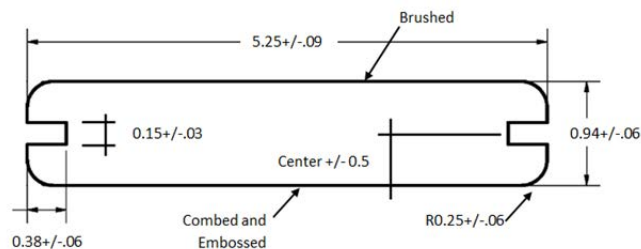


LATITUDES MARINE BOARD
(Also known as Veranda Marine Board)

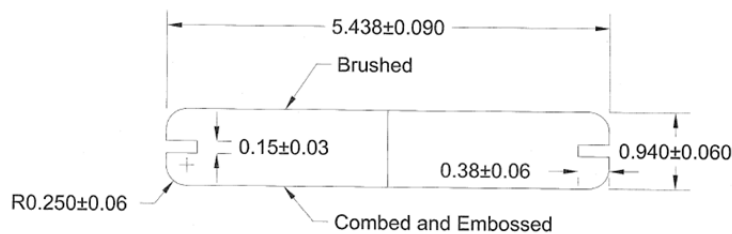
FIGURE 1—SOLID EDGE DECK BOARDS



LATITUDES CAPTIVA—SLOTTED
(Also known as Latitudes Capricorn—Slotted and Wolf—Slotted)

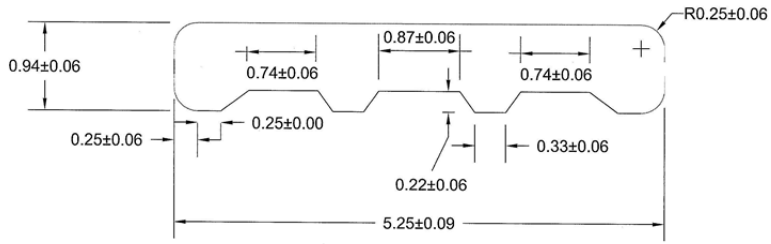


LATITUDES CLASSIC—SLOTTED
(Also known as Veranda—Slotted)

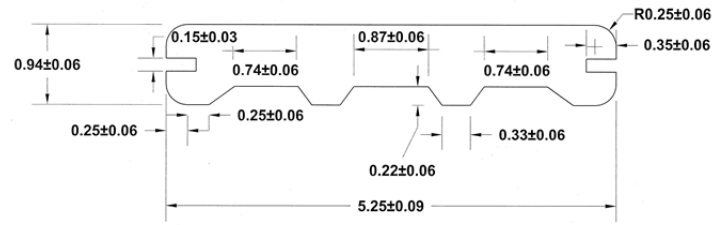


LATITUDES INTREPID—SLOTTED

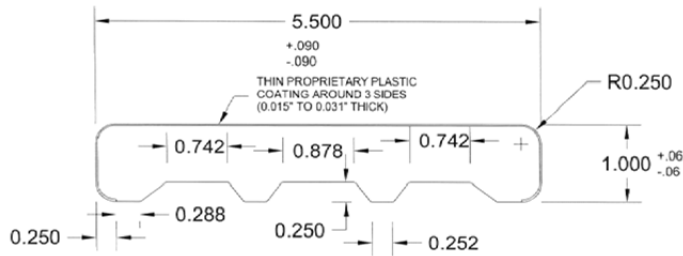
FIGURE 2—SLOTTED DECK BOARDS



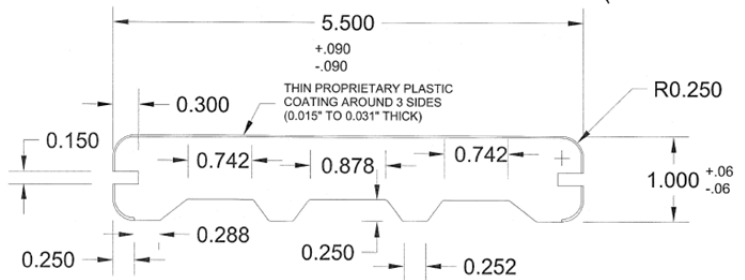
EverX



LATITUDES WAVE—SLOTTED



STYLE SELECTIONS—SOLID EDGE



STYLE SELECTIONS—SLOTTED

FIGURE 1—SOLID DECK BOARDS
(continued)

FIGURE 2—SLOTTED DECK BOARDS
(continued)

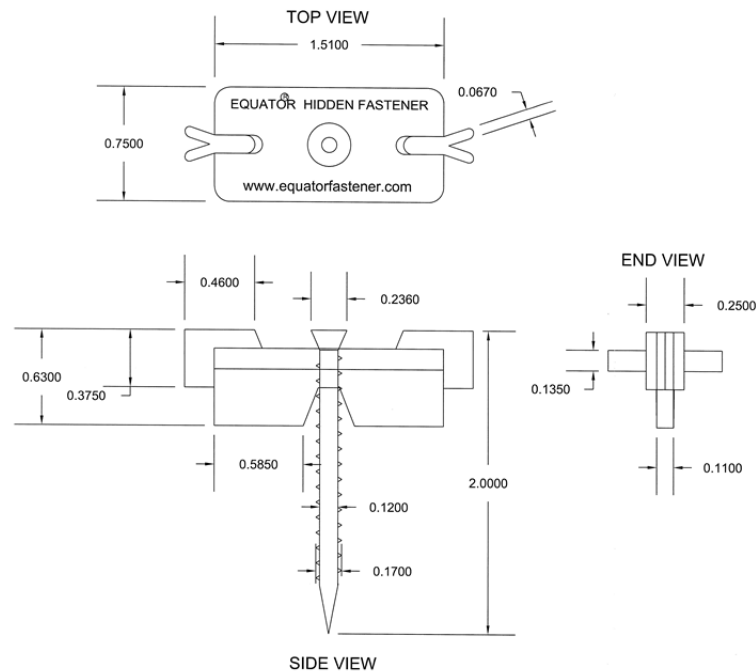


FIGURE 3—EQUATOR HIDDEN FASTENER SYSTEM