



PFS TECO Research Report 0100

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TYPE OF ACCEPTANCE: Product Material - Wood and Plastics
CSI Specification Division 065000 (Structural Plastic) and Section 065300 (Plastic Decking)

MANUFACTURER IDENTIFICATION:

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RESEARCH REPORT SUBJECT: UFP Ventures II, Deck Boards and Stair Treads for Exterior Applications
Installation on Residential and Commercial Structures

DESCRIPTION OF BUILDING COMPONENTS:

UFP Ventures II deck board is a wood thermoplastic composite lumber (WTCL) products consisting of high-density polyethylene, wood flour filler plus additives and color. The product specifications are listed in the approved quality control manual. The UFP Ventures II deck board components are manufactured by an extrusion process (mono-extruded or co-extruded) in several colors. All deck boards can be used as stair treads except where noted. See Drawings table 1.

1. Deck Boards: Solid

The **Latitudes Wave-Solid** deck board is rectangular in shape, has rounded edges and is completely solid. See attached drawing in Table 1 Section A. This deck board is also named **Everex VE Reversible-Solid**.

The **Latitudes Captiva-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on top of the board. See attached drawing in Table 1 Section A. This deck board is also named **Latitudes Capricorn-Solid**.

The **DeckKorators Classic-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on top of the board. See attached drawing in Table 1 Section A. This deck board is also named **DeckKorators Vista-Solid**, **DeckKorators Heritage-Solid**, **Captiva Plus-Solid**, **Terrace Collection-Solid** and **Carolina Stair Deck**.

The **Latitudes Marine Board-Solid** deck board is rectangular in shape, has rounded edges and is completely solid. See attached drawing in Table 1 Section A. This deck board is also named **Veranda Marine Board-Solid**.

The **Latitudes Intrepid** deck board is rectangular in shape, has rounded edges and is completely solid. See attached drawing in Table 1 Section A.

The **DeckKorators 4"-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on top of the board. This deck board cannot be used as a stair tread. See attached drawing in Table 1 Section A.

The **DeckKorator Stair Tread** deck board is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on top of the board. This deck board can only be used as a stair tread. See attached drawing in Table 1 Section A.

The **DeckKorators Fire Rated-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on top of the board. See attached drawing in Table 1 Section A.

2. Deck Boards: Solid with Lobes

The **EverX 4 Lobed-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has four (4) lobes on the bottom of the board. See attached drawing in Table 1 Section B.

The **Style Selections-Solid** deck board with three (3) lobes is rectangular in shape, has rounded edges, is completely solid and has a proprietary cap on the top of the board. See attached drawing in Table 1 Section B. This board is also named **Tropics-Solid**, **DeckKorators Tropics-Solid** and **DeckKorators Distressed-Solid**.

The **Latitudes Captiva Contour-Solid Edge** deck board is rectangular in shape, has rounded edges, is completely solid, has four (4) lobes on the bottom of the board and has a proprietary cap on the top of the board. See attached drawing in Table 1 Section B. This deck board is also named **Latitudes Capricorn Contour-Solid Edge**.

The **Veranda-Solid** deck board is rectangular in shape, has rounded edges, is completely solid and has three (3) lobes on the bottom of the board. This deck board has a proprietary cap on the top of the deck board. See attached drawing in

Table 1 Section B. This deck board is also named **Veranda Elite-Solid, Veranda HP-Solid, Pacific Collection-Solid, Veranda Tropics-Solid, Veranda Vintage-Solid, DecKorail Vintage-Solid** and **Composite E 3 Lobed-Solid**.

3. Deck Boards: Solid with Side Grooves

The **Latitudes Serrated Intrepid-Slotted** deck board is rectangular in shape, has rounded edges, is completely solid, has a groove on each side of the board. See attached drawing in Table 1 Section C. This deck board is also named **Intrepid Slotted Reversible**.

The **DecKorators Classic-Slotted** deck board is rectangular in shape, has rounded edges, is completely solid, has a groove on each side of the board and has a proprietary cap on the top of the board. See attached drawing in Table 1 Section C. This deck board is also named **DecKorators Vista-Slotted, DecKorators Heritage-Slotted, Terrace Collection-Slotted** and **Capitiva Plus-Slotted**.

The **DecKorators Fire Rated-Slotted** deck board is rectangular in shape, has rounded edges, is completely solid, has a groove on each side of the board and has a proprietary cap on top of the board.

The **DecKorators 4" Slotted** deck board is rectangular in shape, has rounded edges, is completely solid, has a groove on each side of the board and has a proprietary cap on the top of the board. This deck board cannot be used as a stair tread. See attached drawing in Table 1 Section C.

4. Deck Boards: Solid with Side Grooves and Lobes

The **Style Selections-Slotted** deck board with three (3) lobes is rectangular in shape, has rounded edges, is solid, has a groove on each side of the board and has a proprietary cap on the top of the board. See attached drawing in Table 1 Section D. This board is also named **Tropic-Slotted, DecKorators Tropics-Slotted** and **DecKorators Distressed-Slotted**.

The **Latitudes Wave-Slotted** deck board is rectangular in shape, has rounded edges, is solid, has a groove on each side of the board and has four (4) lobes on the bottom of the board. This board is also named **Veranda Contour-Slotted**. See attached drawing in Table 1 Section D.

The **Latitudes Captiva-Slotted** deck board is rectangular in shape, has rounded edges, is solid, has a groove on each side of the board, has four (4) lobes on the bottom of the board and has a proprietary cap on the top of the board. See attached drawing in Table 1 Section D. This deck board is also named **Latitudes Capricorn-Slotted, Decking-Slotted** and **Capitiva Contour-Slotted**.

The **Veranda Vintage-Slotted** deck board is rectangular in shape, has rounded edges, is solid, has a groove on each side of the board and has three (3) lobes on the bottom of the board. See attached drawing in Table 1 Section D. This deck board is also named **Veranda Elite-Slotted/Rainuree, Veranda HP-Slotted, Pacific Collection-Slotted, Veranda Tropic-Slotted, DecKorators Vintage-Slotted** and **Composite E 3 Lobed-Slotted**.

APPLICABLE CODES:

- 2018 *International Building Code*® (IBC)
- 2015 *International Building Code*® (IBC)
- 2012 *International Building Code*® (IBC)
- 2009 *International Building Code*® (IBC)
- 2006 *International Building Code*® (IBC)
- 2018 *International Residential Code* (IRC)
- 2015 *International Residential Code* (IRC)
- 2012 *International Residential Code* (IRC)
- 2009 *International Residential Code* (IRC)
- 2006 *International Residential Code* (IRC)

APPLICABLE CHARACTERISTICS REVIEWED:

1. Deck Board: Structural Performance

- (a) The deck boards have been reviewed for a uniform load, maximum span and deck board direction when installed on support framing members. See attached Table 1.

(b) The deck boards have been reviewed for wind uplift resistance and have an uplift load rating when installed as indicated in Table 1 in this report.

(c) The deck boards used as stair treads meet the code prescribed concentrated load of 300 lbf when installed in accordance with the manufacturers' installation instructions and Table 1 in this report. Figure 1 provides a typical installation for the 3 Lobed Deck Board.

2. Deck Board: Fastening

(a) Solid Deck Boards and Solid Deck Boards with lobes must be fastened in accordance with the manufacturer's installation instructions and Table 1 in this report. When manufacturer's installation instructions differ, from this report, this report governs.

(b) Solid Deck Boards with side grooves and Solid Deck Boards with side grooves and lobes can be installed with the Equator Hidden Fastener, Trex Hideaway Hidden Fastener, FastenDry Hidden Fastener or the Stowaway Hidden Fastener. These fasteners must be installed in accordance with manufacturer's installation instructions and Table 1 of this report. When manufacturer's installation instructions differ from this report, this report governs.

(c) The deck board attachment to rim and floor joist is outlined in the manufacturers' installation instructions and Table 1 of this report. When the manufacturer's installation instructions differ from this report, this report governs.

(d) When deck boards are used as stair treads, they must be installed in accordance with the manufacturer's installation instructions and Table 1, in this report. When the manufacturer's installation instructions differ from this report, this report governs.

3. Deck Board Durability: Temperature

(a) The deck boards have been reviewed for the temperature range of -20 degrees F (-29 degrees C) to +125 degrees F (52 degrees C).

4. Deck Board Flame Spread Index:

(a) The flame spread rating for the deck boards, described in this report was less than 100 when tested with ASTM E84 "Standard Test Method for Surface Burning Characteristics of Building Materials."

(b) The flame spread rating for the fire rated deck board – solid and slotted is 65 and the smoke development index is 250 when tested with ASTM E84 "Standard Test Method for Surface Burning Characteristics of Building Materials."

5. Deck Board Decay Resistance:

(a) The deck boards have been reviewed for this report and have been deemed comparable to naturally durable wood for resistance to fungal decay.

6. Deck Board Termite Resistance:

(a) The deck boards reviewed for this report have been deemed comparable to preservative treated wood for resistance to termite attack.

APPLICABLE USES:

The UFP Ventures II deck boards have been evaluated in this report for use in exterior decks (balconies, porches, etc.) stair treads, and walking surfaces in Type V-B construction. Under the International Building Code, the UFP Ventures II deck boards, when used in exterior balconies and similar exterior projections, in construction Types IIB, IIIA, IV and VA, the construction must comply with Section 1406.3 and Section 1406.3, Exception 3.

LIMITATIONS OF ACCEPTANCE:

The UFP Ventures II deck boards described in this report comply with those codes listed in Applicable Codes section above and are subject to the following conditions:

1. The deck boards are limited to the "Applicable Uses" indicated above.
2. Installation of the deck board must comply with this report; the manufacturer's published installation instructions (dated 8/2014 and/or 11/ 2014) and the applicable code. When deck board manufacturer's installation instructions differ from this report, this report governs.
3. The fasteners described in this report must be used for the installation of the UFP Ventures II deck boards only. Compatibility of the fasteners to treated supporting construction has not been evaluated.
4. The UFP Ventures II deck boards indicated in the report must be fastened to the supporting construction as indicated in the manufacturer's installation manual and outlined in this report. When deck board manufacturer's fastening instructions differ from this report, this report governs.
5. When required, the structural deck board layout must be designed by a design professional and submitted to the authority having jurisdiction for final acceptance.

6. The UFP Ventures II deck boards have not been evaluated as a member of a fire-resistance-rated assembly.
7. UFP Ventures II has Third Party inspections program provided by PFS Corporation.
8. Solid and 4 lobed deck boards used as stair treads require a minimum of two span installation conditions. All 3 lobed deck boards used as stair treads are to be supported full length continuously over all stringers by minimum 5/4" x 6" pressure preservative treated (or equivalent resistant species) boards having a specific gravity not less than 0.42. See Figure 1.
9. The structural design for code compliance of supporting members for the deck boards have not been evaluated and is not part of this research report.

DOCUMENTATION SUBMITTED:

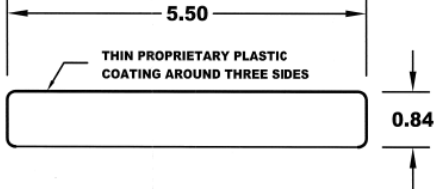
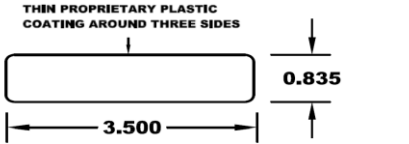
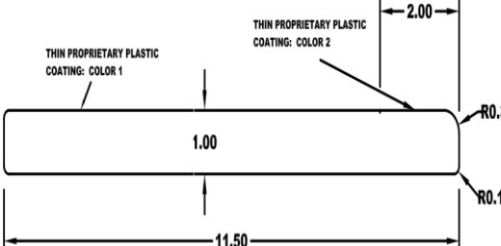
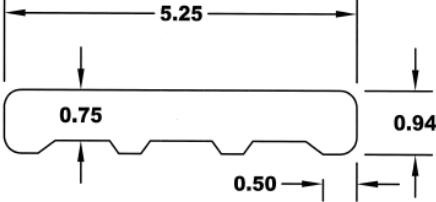
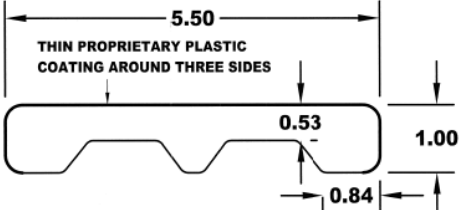
Submitted data was provided in accordance with PFS TECO 1601 (Quality control manual, Specifications, Manufacturer's installation instructions, Test data and Descriptive information) and the products have been evaluated in accordance with "Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (AC174)."

PRODUCT IDENTIFICATION:

The UFP Ventures II deck boards evaluated in this Research Report must be identified with a label, stamp, or laser on every deck board. The required information is as follows: UFP Ventures II, Inc., product identification, compliance to ASTM D7032 including the maximum deck board span and loading (inches on center/psf), the Research Report number (RR 0100), and PFS Certification Mark. Deck boards without this information are not covered under this report.

Table 1: Span Table and Fastening Schedule

Deck Board ID	Deck Board Profile	Maximum Span Rating (in/psf) with Deck Board Orientation to Support Joists		Fastening Schedule ¹ and Uplift Values	Maximum Stair Tread Span ² (in)
		90°	45°		
A. Solid Deck Board					
Latitudes Captiva-Solid Latitudes Capricorn-Solid		16/100	12/100	296 lbf per #8 x 3-in Deck Screw	8 in
Latitudes Wave-Solid Everex VE Reversible-Solid		16/100	12/100	296 lbf per #8 x 3-in Deck Screw	8 in
Latitudes Intrepid		16/100	12/100	296 lbf per #8 x 3-in Deck Screw	8 in
Latitudes Marine Board-Solid Veranda Marine Board-Solid		24/100	16/100	296 lbf per #8 x 3-in Deck Screw	12 in
DecKorators Classic-Solid DecKorators Vista-Solid DecKorators Heritage-Solid Captiva Plus-Solid Terrace Collection-Solid Carolina Stair Deck		16/100	12/100	296 lbf per #8 x 3-in Deck Screw	8 in

<p>DecKorators Fire Rated - Solid</p>		<p>16/100</p>	<p>12/100</p>	<p>296 lbf per #8 x 3-in Deck Screw</p>	<p>8 in</p>
<p>DecKorators 4" Solid</p>		<p>16/100</p>	<p>12/100</p>	<p>296 lbf per #8 x 3-in Deck Screw</p>	<p>- n/a -</p>
<p>DecKorator Stair Tread</p>		<p>- n/a -</p>	<p>- n/a -</p>	<p>296 lbf per #8 x 3-in Deck Screw</p>	<p>12 in</p>
<p>B. Solid Deck Board with Lobes on Bottom</p>					
<p>EverX 4 Lobed-Solid</p>		<p>16/100</p>	<p>12/100</p>	<p>296 lbf per #8 x 3-in Deck Screw</p>	<p>8 in</p>
<p>* Style Selections-Solid * Tropics-Solid * DecKorators Tropics- Solid * DecKorators Distressed- Solid</p>		<p>16/100</p>	<p>12/100</p>	<p>212 lbf per #8 x 3-in Deck Screw</p>	<p>16 in Fully Supported (Fig. 1)</p>

<ul style="list-style-type: none"> * Veranda-Solid * Veranda Elite-Solid * Veranda HP-Solid * Pacific Collection-Solid * Veranda Tropics-Solid * Veranda Vintage-Solid * Composite E 3 Lobed-Solid * DeckKorail Vintage-Solid 		<p>16/100</p>	<p>12/100</p>	<p>212 lbf per #8 x 3-in Deck Screw</p>	<p>16 in Fully Supported (Fig. 1)</p>
<p>Latitudes Captiva Contour-Solid Edge</p> <p>Latitudes Capricorn Contour-Solid Edge</p>		<p>16/100</p>	<p>12/100</p>	<p>296 lbf per #8 x 3-in Deck Screw</p>	<p>8 in</p>
<p>C. Solid Deck Board with Side Grooves</p>					
<p>Latitudes Serrated Intrepid-Slotted</p> <p>Intrepid Slotted Reversible</p>		<p>16/100</p>	<p>12/100</p>	<p>80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)</p>	<p>8 in</p>
<p>DeckKorators Classic-Slotted</p> <p>DeckKorators Vista-Slotted</p> <p>DeckKorators Heritage-Slotted</p> <p>Captiva Plus-Slotted</p> <p>Terrace Collection- Slotted</p>		<p>16/100</p>	<p>12/100</p>	<p>80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)</p>	<p>8 in</p>
<p>DeckKorators 4" Slotted</p>		<p>16/100</p>	<p>12/100</p>	<p>80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)</p>	<p>- n/a -</p>
<p>DeckKorators Fire Rated - Slotted</p>		<p>16/100</p>	<p>12/100</p>	<p>80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)</p>	<p>8 in</p>

D. Solid Deck Board with Lobes on Bottom and Side Grooves					
Latitudes Captiva-Slotted Latitudes Capricorn-Slotted Captiva Contour-Slotted		16/100	12/100	80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)	8 in
Latitudes Wave-Slotted Veranda Contour-Slotted		16/100	12/100	80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)	8 in
* Style Selections-Slotted * Tropics-Slotted * DecKorators Tropics-Slotted * DecKorators Distressed-Slotted		16/100	12/100	80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)	16 in Fully Supported (Fig. 1)
* Veranda Elite-Slotted/Rainure'e * Veranda HP-Slotted * Pacific Collection-Slotted * Veranda Tropics-Slotted * Veranda Vintage-Slotted * DecKorail Vintage-Slotted * Composite E 3 Lobed-Slotted		16/100	12/100	80 psf - Equator (Fig. 2), 100 psf - Trex (Fig. 3) and Stowaway (Fig. 4)	16 in Fully Supported (Fig. 1)

for SI conversion: 1 in = 25.4 mm, 1 psf = 47.9 Pa, 1 lbf = 0.0044 kN

¹ Deck boards installed with screws must be attached to each joist with 2 #8 x 3-in. deck screws with a recommended minimum end/edge distance of 1-1/2 in. All fasteners installed with an end/edge distance closer than 1-1/2 in. must be predrilled. Deck boards with side grooves installed with hidden fasteners (Equator, Stowaway, or Trex) must be attached to each joist with a fastener as per manufacturer's installation instructions.

² Deck boards installed as stair tread must be supported over 3 or more supports.

The joist to which the deck boards are attached must have a minimum specific gravity of 0.50 or better (treated Southern Pine) or the fastening must be designed.

No duration of load increase is allowed for the uplift values noted in Table 1 in this report.

* Denotes that deck board used as a stair tread must be fully supported, see Figure 1.

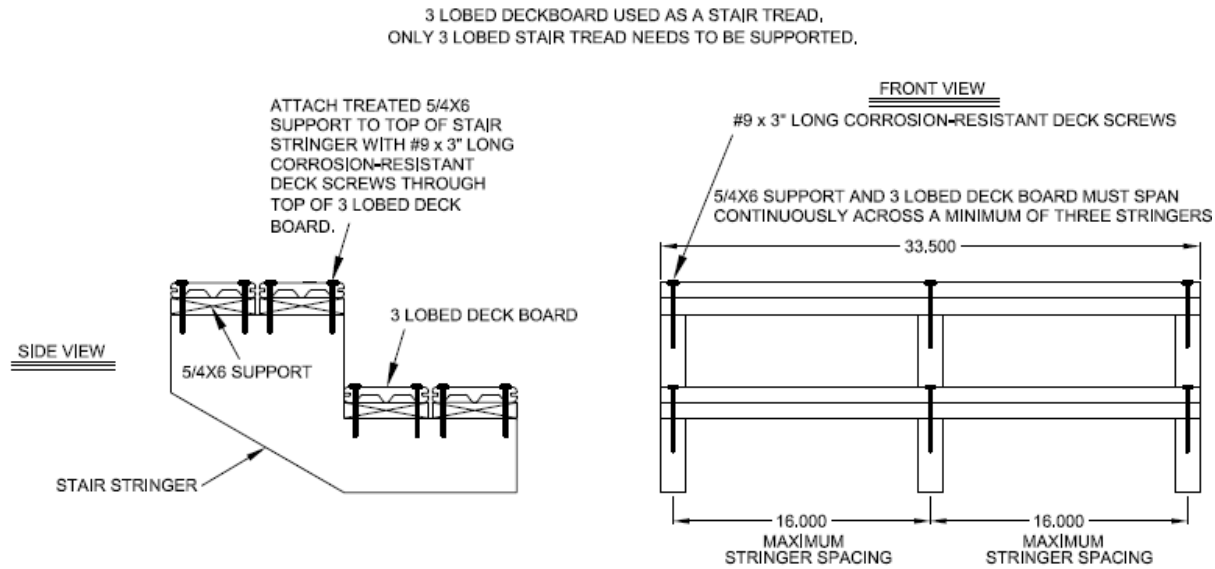


Figure 1: Typical Installation Schematics for a Fully Supported Stair Tread Applicable to Only 3 Lobed Deck Boards Marked with a *



Figure 2: Equator Clip



Figure 3: Trex Clip



Figure 4: Stowaway Clip