

ICC-ES Evaluation Report


ESR-4947

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<p>DIVISION: 06 00 00— WOOD, PLASTICS AND COMPOSITES</p> <p>Section: 06 50 00— Structural Plastics</p> <p>Section: 06 53 00— Plastic Decking</p>	<p>REPORT HOLDER: FIBERON COMPOSITES, LLC</p>	<p>EVALUATION SUBJECT: FIBERON® DECKING</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012 and 2009 [International Building Code® \(IBC\)](#)
- 2024, 2021, 2018, 2015, 2012 and 2009 [International Residential Code \(IRC\)](#)

Properties evaluated:

- Structural
- Durability
- Surface-burning characteristics

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11
- 2020 and 2015 ICC 700 [National Green Building Standard™](#) (ICC 700-2020 and ICC 700-2015)

Attributes verified:

- See Section 3.4

2.0 USES

The Fiberon® Decking described in this evaluation report is limited to exterior use as deck boards for balconies, porches, decks and as stair treads for buildings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC. In addition, Fiberon® Decking may be used for balconies and similar projections on buildings of Type III, IV and V construction when sprinkler protection is extended to these areas, in accordance with Exception 3 to 2024, 2021 and 2018 IBC Section 705.2.3.1 (2015, 2012 and 2009 IBC Section 1406.3).

3.0 DESCRIPTION

3.1 General:

Fiberon® Decking materials are plastic composites, subject to the requirements of 2024, 2021, 2018 and 2015 IBC Section 2612; 2024, 2021 and 2018 IRC Sections R507.2.2 (2015 and 2012 IRC Section R507.3); and IRC Section R317.4.

3.2 Fiberon® PE Decking:

Fiberon® PE Decking has a core which is a composite of polyethylene (PE) and wood fiber, co-extruded with a high density polyethylene (HDPE) capstock. The decking is available in a variety of cross-sections having a nominal size of 1 inch by 6 inches (25.4 by 152 mm). The deck boards are available with square edges or with longitudinal grooves along each side of the board. These grooves are milled into the boards after the extrusion process for use with hidden fastening systems. See [Table 1](#) for detailed product descriptions. Refer to [Figures 1](#) through [4](#) for product cross-sections.

3.3 Fiberon® PVC Decking:

Fiberon® PVC Decking has a cellular foam polymer core, co-extruded with a polyvinyl chloride (PVC) on either three or all four sides. Fiberon® PVC Decking is available with square edges or with longitudinal grooves along each side of the board. The extruded grooves are located along both edges of the boards for use with hidden fastening systems. See [Table 2](#) for detailed product descriptions. Refer to [Figures 5](#) and [6](#) for product cross-sections.

3.4 Green Attributes:

The attributes of the composite deck boards have been verified as conforming to the provisions of (i) CALGreen Sections A4.405.1.3 and A5.406.1.2 for reduced maintenance; (ii) ICC 700-2020 and ICC 700-2015 Sections 602.1.6 and 11.602.1.6 for termite-resistant materials; and (iii) ICC 700-2020 Sections 601.7 and 11.601.7 and ICC 700-2015 Sections 601.7, 11.601.7, and 12.1(A).601.7 for site-applied finishing materials. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance. See Section 3.5 for limitations on termite-resistance use.

3.5 Durability:

When subjected to weathering, insect attack, and other decaying elements, the Fiberon® Decking is equivalent in durability to preservative-treated or naturally durable lumber when used in locations described in Section 2.0 of this report. The decking has been evaluated for structural capacity when exposed to temperatures from -20°F to 125°F (-29°C to 52°C).

3.6 Surface-burning Characteristics:

When tested in accordance with ASTM E84, the Fiberon® Decking has a flame spread index no greater than 200.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The Fiberon® Decking complies with ASTM D7032. See [Table 3](#) for span ratings for Fiberon® Decking with square edges. See [Table 4](#) for span ratings for Fiberon® Decking with grooved edges. Allowable wind uplift pressures based on fastener pull-through capacity and fastener withdrawal from Southern Pine exceed the load rating for the deck boards. If other wood species are used for supporting framing, withdrawal capacity must be addressed to the satisfaction of the code official.

4.2 Installation:

Installation of the Fiberon® Decking 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.

Fiberon® Decking has been evaluated for installation perpendicular to the supporting framing. The deck board ends must be supported. Deck boards must be installed with a $\frac{3}{16}$ inch (4.8 mm) gap between them. At butt joints, the boards must be gapped in accordance with the report holder's installation instructions, taking into account the ambient temperature at the time of installation.

Fiberon® Decking with square edges must be fastened to each support using two fasteners named in [Table 3](#). Fasteners must be installed at a 90-degree angle to the decking surface. Fasteners for square-edged PVC decking must be installed a minimum of $\frac{1}{2}$ inch (12.7 mm) from the end of the deck board and a minimum of 1 inch (25.4 mm) from each edge of the deck board. Fasteners for square-edged PE decking must be installed a minimum of 1 inch (25.4 mm) from the end of the deck board and a minimum of 1 inch (25.4 mm) from each edge of the deck board.

Fiberon® Decking with grooved edges must be fastened to each support using the applicable hidden fastening system named in [Table 4](#), in accordance with the Fiberon® Decking installation instructions.

Fiberon® Decking used as stair treads must be installed in a minimum of a two-span condition. When reinforcing is required by [Table 4](#), installation must be as shown in [Figure 8](#).

5.0 CONDITIONS OF USE:

The Fiberon® Decking described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The decking must be installed in accordance with the report holder's published installation instructions and this report. In the case of a conflict between this report and the report holder's published installation instructions, this report governs.
- 5.2 The Fiberon® Decking is limited to exterior use as deck boards for balconies, porches, decks and stair treads for Type V-B (IBC) construction and for dwellings constructed in accordance with the IRC, and for balconies and similar projections on building of Type III, IV & V construction where fire sprinkler protection is extended into those areas in accordance with Exception 3 of 2024, 2021 and 2018 IBC Section 705.2.3.1 (2015, 2012 and 2009 IBC 1406.3).
- 5.3 Compatibility of the supporting construction materials with all fasteners and other hardware components is subject to approval by the code official.
- 5.4 Only those types of fasteners and fastening methods described in this report have been evaluated for the installation of the Fiberon® Decking; other methods of attachment are outside the scope of this report.
- 5.5 Evaluation of slip resistance for the decking is outside the scope of this report.
- 5.6 Fiberon® Decking is produced in North Carolina and Idaho under quality control programs with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems \(Guards and Handrails\) \(AC174\)](#) dated January 2012 (editorially revised April 2024).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4947) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, each deck board and/or package of decking must be identified with the brand name (Fiberon®), the product name (see [Table 1](#)), the span rating for use as a deck board or stair tread as applicable, a statement regarding compliance with ASTM D7032, and a manufacturing plant identifier.
- 7.3 The report holder's contact information is the following:

FIBER COMPOSITES, LLC
181 RANDOM DRIVE
NEW LONDON, NORTH CAROLINA 28127
(800) 573-8841
www.fiberondecking.com
info@fiberondecking.com

TABLE 1—FIBERON® PE DECKING

PRODUCT NAME	DESCRIPTION	EVALUATED COLORS
Good Life Weekender	Solid board with two wide flutes on the bottom, coextruded with capstock on sides and top (See Figure 1)	Cabin, Cottage
Good Life Escapes		Beach House, Bungalow, Cabana, Tuscan Villa
Veranda® Builder's Select Collection		Timber Brown, Stone Gray
ArmorGuard®		Forest Brown, Coastal Gray, Aspen Gray
ArmorGuard® Pro		Honey Brown, Cool Gray
Sanctuary® Sanctuary® FR	Solid rectangular board coextruded with capstock on sides and top (See Figure 2)	Chai, Earl Grey, Espresso, Latte, Moringa
Concordia™ Astir	Solid rectangular board coextruded with capstock on all four sides (See Figure 3)	Mountain Ash, Prairie Wheat, Seaside Mist
Concordia™ Horizon®		Castle Gray, Ipe
Concordia™ Symmetry®		Burnt Umber, Graphite, Warm Sienna
Good Life Weekender FR	Solid board with two wide flutes on the bottom, coextruded with capstock on sides and top (See Figure 4)	Cabin, Cottage
Good Life Escapes FR		Beach House, Bungalow, Cabana, Tuscan Villa
ArmorGuard® Pro FR		Honey Brown, Cool Gray

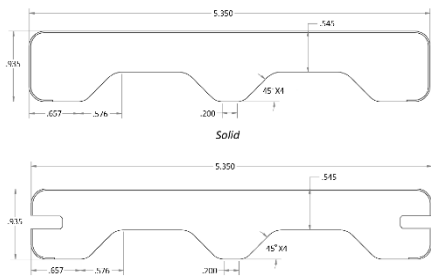


FIGURE 1—FIBERON® GOOD LIFE WEEKENDER, GOOD LIFE™ ESCAPES, VERANDA® BUILDER'S SELECT COLLECTION, ARMORGUARD® AND ARMORGUARD® PRO CROSS-SECTIONS

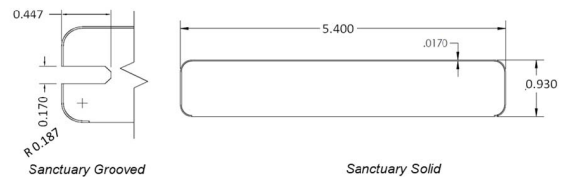


FIGURE 2—FIBERON® SANCTUARY® AND SANCTUARY FR CROSS-SECTIONS

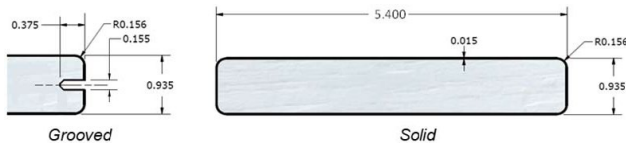


FIGURE 3—FIBERON® CONCORDIA™ ASTIR, CONCORDIA™ HORIZON® AND CONCORDIA™ SYMMETRY® CROSS-SECTIONS

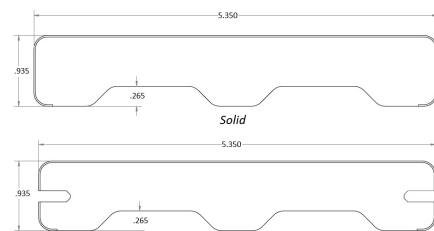


FIGURE 4—FIBERON® GOOD LIFE WEEKENDER FR, GOOD LIFE™ ESCAPES FR AND ARMORGUARD® PRO FR CROSS-SECTIONS

TABLE 2—FIBERON® PVC DECKING

PRODUCT NAME	DESCRIPTION	EVALUATED COLORS
Paramount®	Solid rectangular board coextruded with capstock on sides and top (See Figure 5)	Brownstone, Clay, Mineral, Sandstone
Promenade®	Solid rectangular board coextruded with capstock on all four sides (See Figure 6)	Moonlit Cove, Natural Reef, Russet Dune, Sandy Pier, Shaded Cay, Weathered Cliff

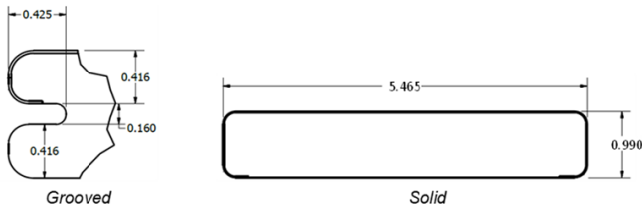


FIGURE 5—FIBERON® PARAMOUNT® CROSS-SECTION

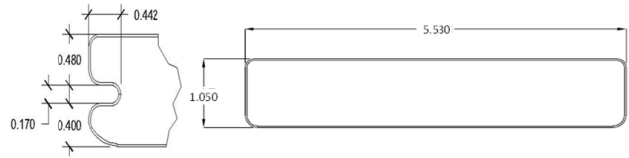


FIGURE 6—FIBERON® PROMENADE CROSS-SECTION

TABLE 3—SPAN RATINGS FOR FIBERON® SQUARE EDGE DECK BOARDS

PRODUCT NAME	FASTENERS ¹	MAXIMUM DECK BOARD SPAN (inches)	MAXIMUM STAIR TREAD SPAN ¹ (inches)	LOAD RATING (psf)
Good Life	#9 x 2 1/2" SplitStop™ Titan III Composite Screws	16	12	100
ArmorGuard®	#9 x 2 1/2" SplitStop™ Titan III Composite Screws	16	12	100
ArmorGuard® Pro	#9 x 2 1/2" SplitStop™ Titan III Composite Screws	16	12	100
ArmorGuard® Pro FR	#9 x 2 1/2" SplitStop™ Titan III Composite Screws	16	12	100
Veranda® Builder's Select Collection	#9 x 2 1/2" SplitStop™ Titan III Composite Screws	16	12	100
Good Life	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	12	100
ArmorGuard®	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	12	100
ArmorGuard® Pro	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	12	100
ArmorGuard® Pro FR	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	12	100
Veranda® Builder's Select Collection	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	12	100
Sanctuary®	#10 x 2 1/2" SplitStop Titan III Composite Screws	16	12	100
Concordia™	#10 x 2 1/2" SplitStop Titan III Composite Screws	16	12	100
Paramount®	#10 x 2 3/4" Cortex® composite deck screws	16	24 (reinforced) ²	100
	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	24 (reinforced) ²	100
Promenade	#9 x 2 3/4" FastenMaster TrapEase II Composite Screws	16	24 (reinforced) ²	100
	#10 x 2 3/4" Cap-Tor XD Headcote 305 w/Type 17 Auger Tip composite deck screws	16	24 (reinforced) ²	100

For SI: 1 inch = 25.4 mm; 1 psf = 47.9 Pa.

¹A minimum two-span condition is required when deck boards are utilized for a stair tread application.

²Deck boards used in a stair tread application must be reinforced with 2x4 [1.5 by 3.5 inches (38 by 89 mm)] preservative treated SYP lumber blocking as shown in [Figure 8](#).

TABLE 4—SPAN RATINGS FOR FIBERON® GROOVED EDGE DECK BOARDS

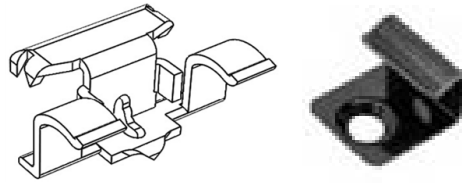
PRODUCT NAME	FIBERON® FASTENING SYSTEM ¹	MAXIMUM DECK BOARD SPAN (inches)	LOAD RATING (psf)
Good Life; ArmorGuard®, Veranda® Builder's Select Collection	Phantom GT Hidden Fastener System ²	16	100
	EDGE® Clips Hidden Fastener System	16	100
	EDGEX® Clips Hidden Fastener System	16	100
Sanctuary®	Phantom GT Hidden Fastener System ²	16	100
Concordia™	Phantom GT Hidden Fastener System ²	16	100
Paramount®	Phantom GT Hidden Fastener System ²	16	100
	EDGE® Clips Hidden Fastener System ³	16	100
	EDGEX® Clips Hidden Fastener System ³	16	100
Promenade	Phantom Universal Hidden Deck Fastener	16	100
	EDGE® Clips Hidden Fastener System ³	16	100
	EDGEX® Clips Hidden Fastener System ³	16	100

For SI: 1 inch = 25.4 mm; 1 psf = 47.9 Pa.

¹See [Figure 7](#) for depictions of the fastening systems.

²Clips must be fastened with #8 x 1.6" long trim head stainless steel screws having a major diameter of 0.165 inch and a minor diameter of 0.105 inch.

³Clips must be fastened with #7 x 2-1/4" long coated screws (8TPI, 2.21-in overall length, 0.156 major diameter, 0.105-in minor diameter, 0.120-in. shank, 0.200-in head diameter, star drive trim head, self drilling point).



PHANTOM GT HIDDEN FASTENER CLIP AND PHANTOM EC END CLIP



FIBERON® EDGE® HIDDEN FASTENER SYSTEM

FIBERON® EDGEX® HIDDEN FASTENER SYSTEM

FIGURE 7—FIBERON® HIDDEN FASTENING SYSTEMS

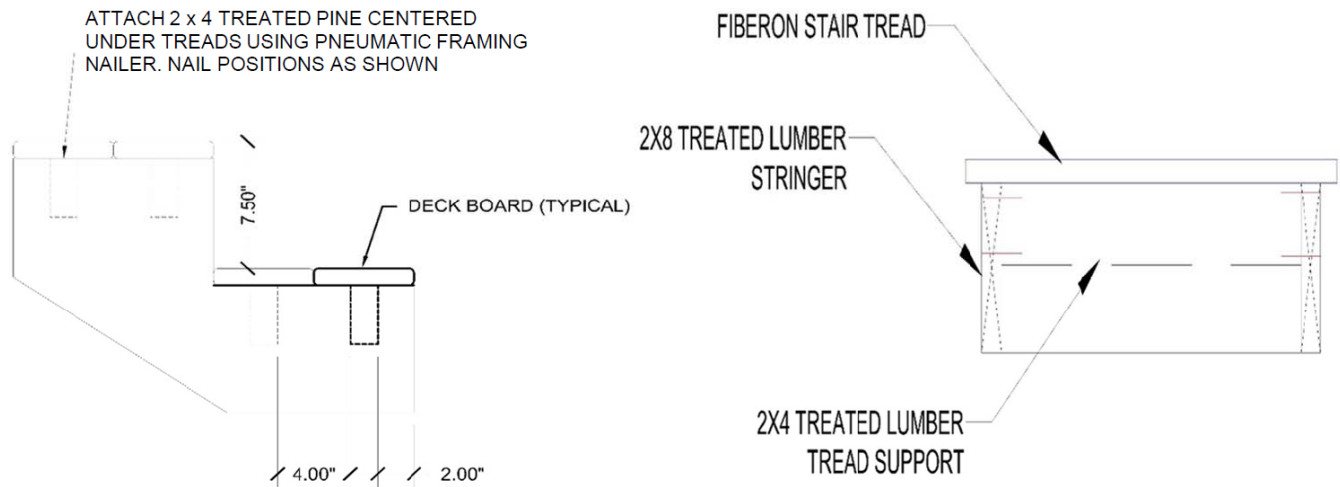


FIGURE 8—FIBERON® PARAMOUNT® AND PROMENADE STAIR TREAD INSTALLATION