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Legacy report on the BOCA® National Building Code/1999 and the 1998 International One-and Two-Family Dwelling Code®

DIVISION: 06—WOOD AND PLASTICS

Section: 06500—Structural Plastics

Section: 06610—Railings And Guards

REPORT HOLDER:

FIBER COMPOSITES, LLC
181 RANDOM DRIVE
NEW LONDON, NORTH CAROLINA 28127

EVALUATION SUBJECT:

- FIBERON® DECK BOARDS-EMBOSSSED (wood grain texture)
FIBERON® DECK BOARDS-BRUSHED (random groove texture)
FIBERON® DECK BOARDS-MOLDED (straight groove texture)
FIBER COMPOSITES' DECKING-MOLDED/EMBOSSSED (straight groove plus wood grain texture-embossing on one side-formally known as PERFECTION®)
FIBERON® PROFESSIONAL® DECK BOARDS-MOLDED/EMBOSSSED (straight groove plus wood grain texture-embossing on both sides)
PORTICO™-MOLDED/EMBOSSSED (straight groove plus wood grain texture-embossing on both sides)
VERANDA™ DECK BOARDS-MOLDED (straight groove texture)
FIBERON® GUARDRAIL SYSTEMS-HOME SERIES (Flat and Deluxe)
FIBERON® RAILING SEVERE WEATHER™ (Flat and Deluxe)
FIBERAIL® GUARDRAIL SYSTEMS-PROFESSIONAL SERIES (Flat and Deluxe)
FIBERAIL® PROFESSIONAL GUARDRAIL SYSTEMS (Provincial and Mission)
TOP RAIL GUARDRAIL SYSTEMS (Provincial and Mission)

EVALUATION SCOPE:

Compliance with the following codes:

- BOCA® National Building Code/1999
■ Section 106.4 Alternate materials and equipment
■ Section 1604.5.4 Floors

- Section 1606.1 Design live load
■ Section 1606.4 Loads on handrails, guards, grab bars and vehicle barriers
■ Section 1609.1.4 Uplift resistance
■ Section 1710.1 General
■ Section 1710.3.1 Test procedure
■ Section 2305.14 Flooring
■ Section 2601.2 Approved materials
■ Section 1021.2 Height
■ Section 1021.3 Opening limitations
■ Section 1705.2 Inspection of fabricators
■ Section 106.4 Alternate materials and equipment
■ Section 1404.2 Durability

1998 International One-and Two-Family Dwelling Code®

- Section 108.1 Alternate materials, methods and equipment
■ Section 301.4 Live load
■ Section 315.3 Guardrail details
■ Section 315.4 Guardrail opening limitations
■ Section 108.1 Alternate materials, methods and equipment
■ Section 301.2 Climatic and geographic design criteria

DESCRIPTION

Fiber Composites, LLC deck boards and guard systems are manufactured from a composite material comprised of wood fibers and a thermoplastic compound that is factory extruded into flooring and guard components. Guard systems include components that are covered with a modified PVC coating or components that are manufactured from PVC. Deck boards and guard systems are used as an alternative to combustible flooring, stair treads and guards for exterior balconies, porches, decks and similar appendages for buildings of combustible construction where the floor/ceiling assemblies are permitted to be unprotected construction.

Fiber Composites, LLC deck boards and guard systems are distributed by various distributors under their respective trade names. See Table 1 of this report for Fiber Composites, LLC deck boards and guard systems trade names and distributors.

*Revised August, 2005

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All Fiber Composites, LLC deck boards are composed of wood fibers and polyethylene. Fiberon® Deck Boards-Embossed/Brushed are 0.95-inch-thick (24 mm), 5.3 inches wide (135 mm), and are available in lengths of 8, 10, 12, 14, 16, or 20 feet (2438, 3048, 3658, 4267, 4877 or 6096 mm). Fiberon® Deck Boards-Embossed/Brushed are embossed or brushed on the top surface and are available in various color finishes. See Figure 1 of this report.

Fiberon® Deck Boards-Molded, Fiberon® Composites' Decking-Molded/Embossed, Fiberon® Professional® Deck Boards-Molded/Embossed, Portico™-Molded/Embossed and Veranda™ Deck Boards-Molded are molded after the extrusion process in dimensions of 0.95-inch-thick (24 mm), 5.3 inches wide (135 mm), and are available in lengths of 8, 10, 12, 14, 16, or 20 feet (2438, 3048, 3658, 4267, 4877 or 6096 mm). Fiber Composites' Decking-Molded/Embossed and Veranda™ Deck Boards-Molded are embossed on the top surface. Fiberon® Professional® Deck Boards-Molded/Embossed, and Portico™-Molded/Embossed are embossed on both the top and bottom surfaces. All molded deck boards are available in various color finishes. See Figure 2 of this report.

Fiber Composites, LLC deck boards are fastened to the supporting construction with a minimum of two 6d 2-inch (51 mm) ring or spiral shank stainless steel siding nails at each joist or stair stringer. Maximum span of the construction supporting the Fiber Composites, LLC deck boards (joists, stringers) is 16 inches (406 mm) on center.

Fiber Composites, LLC guard systems include posts, post brackets, post mount brackets, horizontal top and bottom rails, vertical balusters, rail to post brackets, rail to post angle brackets, rail to post corner angle brackets, crush block, moulding and post cap components that form a guard 36 or 42 inches (914 or 1067 mm) above the floor surface when assembled. Fiber Composites, LLC guard systems are available in various colors and are manufactured as railing systems under various brand names. See Tables 2 and 3 of this report for Fiberon® and Fiberail® guard components, dimensions and models. See Figures 3 and 4 of this report.

■ Posts

All posts are manufactured from a composite material comprised of wood fibers and a thermoplastic compound that is covered with a modified PVC coating. Posts for the 36-inch-high (914 mm) guards are the vertical structural support for the guards. Post for the 42-inch-high (1067 mm) guards acts as a non structural sleeve for the guards. A nominal 4-by-4-inch (102 by 102 mm) preservative-treated wood post is inserted into the sleeve to act as the vertical structural component for the guards. Post brackets are used to fasten the posts to wood supporting construction (joists). The composite posts can also be fit over the Ulti-Mount II Post mount, which is used to anchor the posts to a reinforced deck with wood supporting construction (joists) or concrete supporting construction (slab).

■ Post Brackets

An 11 gage [0.123-inch-thick (3.2 mm)] (Professional-for 42-inch-high guards), or a 14 gage [0.0785-inch-thick (1.9 mm)] (Standard-for 36-inch-high guards), by $5\frac{7}{8}$ -inch-wide (149 mm) by $5\frac{1}{8}$ -inch-deep (130 mm) by $7\frac{1}{4}$ -inch-high (184 mm) galvanized steel bracket composed of two bent plates, manufactured from Grade 50 steel complying with ASTM A 653 with minimum yield and tensile strengths of 50 and 60 ksi (345 and 414 MPa), respectively, is used to fasten the posts to wood supporting construction (joists). After the posts are inserted into the brackets, the bent plates are tightened with four $\frac{1}{2}$ -inch (12.7 mm), (for the Professional), or $\frac{3}{8}$ -inch-diameter (9.5 mm) (for the Standard), by 3-inch-long (76 mm) stainless steel

carriage bolts with washers and nuts. Note: both bent plates are used for in-line installations. The L-shaped bent plate is not used for corner installations.

■ ULTI-mount II Post

ULTI-MOUNT II post mount system is a metal insert which attaches the post to a wood deck or concrete slab. ULTI-MOUNT II is a 13 gage (0.089-inch-thick [2.26 mm]) by 2-inch-wide (51mm) by 2-inch-deep (51mm) by 24 inches high (619mm) steel tube with mounting plates. The tube is manufactured from Grade B steel complying with ASTM A 500 with minimum yield and tensile strengths of 50 and 58 ksi (345 and 400 MPa), respectively.

For wood decking installations, the minimum thickness of the wood deck and wood reinforcement shall be 3 inches (76 mm). The metal insert is fastened through the deck and reinforcement with four $\frac{5}{16}$ -inch-diameter (7.9 mm) by $4\frac{1}{2}$ -inch-long (114 mm), hex head bolts with washers and nuts.

For concrete slab installations, the metal insert is fastened to the slab with four $\frac{1}{4}$ -inch-diameter (6.4 mm) by 3-inch-long (76 mm) Wedge-Bolt™ anchors, provided by American Way, the ULTI-MOUNT II manufacturer.

■ Top And Bottom Rails

Horizontal top and bottom rails are structural components manufactured from a composite material comprised of wood fibers and a thermoplastic compound that is covered with a modified PVC coating. The top rails and the bottom rails for the Fiberon® systems and the top rail for the Fiberail® and Top Rail Guardrail Systems are manufactured with 1.3-inch-wide (33 mm) by 1.3-inch-long (33 mm) openings to accept the vertical baluster components. The bottom rails for the Fiberail® and Top Rail Guardrail Systems have a 0.199-inch-diameter (5.0 mm) hole on the top surface and a 0.4375-inch-diameter (11.1 mm) hole on the bottom surface for attachment of the vertical baluster components. A $3\frac{1}{2}$ -inch-wide (89 mm) by 3-inch-long (76 mm) by 2-inch-deep (51 mm) by $\frac{3}{16}$ -inch-thick (5.1 mm) (for the Fiberon® Guardrail Systems Home Series) or a $\frac{5}{16}$ -inch-thick (7.6 mm) (for the Fiberon® Railing Severe Weather™, Fiberail® and the Top Rail Guardrail Systems) crush block made of the same material as the top and bottom rails is positioned at midpoint at the underside of the bottom rail and attached with PVC adhesive to provide additional support.

■ Baluster

Vertical baluster components are manufactured from PVC. For the Fiberon® Guardrail Systems-Home Series, Fiberon® Railing Severe Weather™ and the Fiberail® Guardrail Systems-Professional Series the baluster components are inserted into the openings provided in the horizontal top and bottom railings. A 3-inch-long (76 mm) No.10 stainless steel screw is used to attach the Fiberail® and the Top Rail Guardrail Systems bottom rail to the balusters. The openings in the rail components are spaced such that the clear distance between the vertical baluster components, when they are installed in each opening, is less than 4 inches (102 mm).

■ Rail to Post Brackets

For the Fiberon® Guardrail Systems-Home Series, Fiberon® Railing Severe Weather™ and the Fiberail® Guardrail Systems-Professional Series the rail to post brackets are manufactured from PVC. Rail to post brackets are used to connect the top and bottom rails to the posts for the Fiberon® guard systems. A "key" is attached to each post with two No.10 × $\frac{7}{8}$ -inch-long (22.2 mm) sheet metal screws at the intersection of the rail and post. Post brackets are positioned over the ends of the top and bottom rails and snapped over the "key" at each post.

■ In-Line (90 Degree) Rail to Post Angle Brackets

For the Fiberail® Professional Guardrail Systems and Top Rail Guardrail Systems, the rail to post angle brackets are 11 gage [0.12-inch-thick (3.0 mm)] by 0.975-inch-wide (22.2 mm) by 1.25-inch-deep (32 mm) by 1.25-inch-long (32 mm) angles manufactured from 302 stainless steel complying with ASTM A 240 with minimum yield and tensile strengths of 30 and 75 ksi (207 and 517 MPa), respectively. Five No. 10 × 1-inch-long (25.4 mm) stainless steel screws are used at each angle bracket to connect the top and bottom rails to the posts.

■ Stair Rail to Post Brackets

For the Fiberon® Guardrail Systems-Home Series, Fiberon® Railing Severe Weather™ and the Fiberail® Guardrail Systems-Professional Series, rail to post brackets are manufactured from PVC. The stair rail to post brackets are used to connect the top and bottom stair rails to the posts. Two No. 10 × 3-inch-long (76 mm) stainless steel screws, are used at each bracket to secure the rail to the post.

■ Hinged Rail to Post Angle Brackets

For the Fiberail® Professional Guardrail Systems and Top Rail Guardrail Systems, the rail to post brackets are 11 gage [0.12-inch-thick (3.0 mm)] by 0.975-inch-wide (22.2 mm) by 1.25-inch-deep (32 mm) by 1.25-inch-long (32 mm) hinged angles manufactured from 302 stainless steel complying with ASTM A 240 with minimum yield and tensile strengths of 30 and 75 ksi (207 and 517 MPa), respectively. Five No. 10 × 1-inch-long (25.4 mm) stainless steel screws are used at each angle bracket to connect the top and bottom rails to the posts.

■ Rail to Post Corner Adaptor Brackets

For the Fiberon® Guardrail Systems-Home Series, Fiberon® Railing Severe Weather™ and the Fiberail® Guardrail Systems-Professional Series, the rail to post corner adaptor brackets are manufactured from PVC. The rail to post corner adaptor brackets are used to connect the top and bottom rails to the posts at various angles. Four No. 10 × 3-inch-long (76 mm) stainless steel screws are used to attach a corner adaptor bracket to the post at each rail location. A “key” is attached to the corner adaptor bracket with two No. 10 by $\frac{7}{8}$ -inch-long (22.2 mm) sheet metal screws at the intersection of the rail and the corner adaptor bracket. Rail to post brackets are positioned over the ends of the top and bottom rails and snapped over the “key” at each corner adaptor bracket.

■ Rail to Post Corner Angle Bracket

For the Fiberail® Professional Guardrail Systems-Professional Series and Top Rail Guardrail Systems, the rail to post corner angle brackets are 11 gage [0.12-inch-thick (3.0 mm)] by 0.975-inch-wide (22.2 mm) by 1.25-inch-deep (32 mm) by 1.25-inch-long (32 mm) hinged angles manufactured from 302 stainless steel complying with ASTM A 240 with minimum yield and tensile strengths of 30 and 75 ksi (207 and 517 MPa), respectively. Five No. 10 × 1-inch-long (25.4 mm) stainless steel screws are used at each angle bracket to connect the top and bottom rails to the posts at various angles.

■ Moulding And Post Caps

Moulding and post caps are non-structural decorative trim manufactured from PVC. They are fastened to the Fiber Composites, LLC guard system components with a PVC adhesive.

CONDITIONS OF USE

This report is limited to the applications and products as stated herein. ICC-ES intends that the report be used by the code official to determine that the report subject complies with the code requirements specifically addressed, provided that this product is installed in accordance with the following conditions:

- Fiber Composites, LLC Deck Boards and Fiberon® guard systems shall be installed in accordance with the manufacturer's published installation instructions, dated June 18, 2002, and this report. Fiberail® and Top Rail Guardrail Systems shall be installed in accordance with the manufacturer's published installation instructions, dated December 29, 2002, and this report. Fiber Composites, LLC shall provide the user of this report with a copy of the manufacturer's published installation instructions. Where the manufacturer's published installation instructions differ from this report, this report shall be null and void.
- Fiber Composites, LLC deck boards and guard systems shall be limited to use as flooring systems, stair treads and guards for exterior balconies, porches, decks and similar appendages for buildings of combustible construction where the floor/ceiling assemblies are permitted to be unprotected construction.
- The use of Fiber Composites, LLC deck boards and guard systems as components of fire-resistance-rated assemblies is outside the scope of this report.
- When used as a flooring system, Fiber Composites, LLC deck boards shall be limited to applications requiring a maximum uniformly distributed live load of 100 lbf/ft² (4.8 kPa) and a maximum uniformly distributed uplift load of 60 lbf/ft² (2.8 kPa). Other loading conditions are outside the scope of this report.
- When used as stair treads, Fiber Composites, LLC deck boards shall be limited to applications requiring a maximum concentrated live load of 300 lbf (136 kg) on an area of 4 square inches (2580 mm²). Other loading conditions are outside the scope of this report.
- The construction supporting Fiber Composites, LLC guard systems shall be capable of supporting a 200 lbf (890 N) concentrated load applied in any direction to the top rail. For jurisdictions adopting the BOCA® *National Building Code/1999*, the construction supporting Fiber Composites, LLC guard systems shall also be capable of supporting a 50 lbf/ft (730 N/m) uniform load applied in any direction to the top rail, and a 50 lbf (222 N) load applied over a 1 square foot (0.093 m²) tributary area of the balusters.
- Fiberon® Guardrail Systems-Home Series posts shall be spaced a maximum of 6 feet (1829 mm) on center. Fiberon® Railing Severe Weather™ posts shall be spaced a maximum of 8 feet (2438 mm) on center. Fiberail® Guardrail Systems-Professional Series, Fiberail® Professional Guardrail Systems and Top Rail Guardrail Systems posts shall be spaced a maximum of 8 feet (2438 mm) on center.
- Supporting construction of Fiber Composites, LLC guard systems, including the connections of the post mount components to the supporting construction, is outside the scope of this report and shall be designed and constructed in accordance with the BOCA® *National Building Code/1999* or the 1998 *International One-and Two-Family Dwelling Code*®, as applicable.
- The maximum spacing of the construction supporting Fiber Composites, LLC deck boards shall be 16 inches (406 mm) on center.
- Fasteners used in the installation of Fiber Composites, LLC deck boards and guard systems shall be as described in this report. Other methods of fastening are outside the scope of this report.
- Fasteners used in the installation of Fiber Composites, LLC deck boards and guard systems, when temperatures are below 40 degrees F (5 degrees C), or when fasteners are installed within 1-inch (25.4 mm) of the board end, shall require predrilling.

- The coefficient of friction of Fiberon® Deck Boards-Embossed and Fiberon® Deck Boards-Brushed has been determined to be 0.52 for dry conditions and 0.54 for wet conditions, when tested in accordance with ASTM D 2394. The coefficient of friction of Fiberon® Deck Boards-Molded, Veranda™ Deck Boards-Molded, Fiberon® Composites' Decking-Molded/Embossed, Fiberon® Professional® Deck Boards-Molded/Embossed, and Portico™-Molded/Embossed has been determined to be 0.62 for dry conditions and 0.69 for wet conditions, when tested in accordance with ASTM D 2394. The appropriateness of the determined coefficient of friction, with respect to the requirements in Section 1005.4 of the BOCA® *National Building Code/1999*, is subject to the specific approval of the code official.
- A minimum of $\frac{1}{8}$ -inch (3.2 mm) clearance shall be provided between adjacent Fiber Composites, LLC deck boards. A minimum of $\frac{1}{4}$ -inch (6.4 mm) clearance shall be provided between adjacent Fiber Composites, LLC deck boards and buildings. A minimum $\frac{1}{16}$ -inch (1.6 mm) clearance shall be provided between Fiber Composites, LLC deck boards (board end to board end) for every 25 degrees F(13.9 degrees C) variance between the temperature at the time of installation and the maximum service temperature anticipated.
- Fiber Composites, LLC deck boards are limited to a maximum cantilever of 1-inch (25.4 mm).
- The use of Fiber Composites, LLC guard systems top rail components as handrails has not been evaluated and is outside the scope of this report. Handrails shall be provided as required by the BOCA® *National Building Code/1999* or the 1998 *International One-and Two-Family Dwelling Code*®.
- The use of Fiber Composites, LLC guard systems standard post mount brackets for attachment to wood supporting construction (joists) is limited to guards which are a maximum of 36 inches (914 mm) in height.
- Architectural Testing Inc. Report No. 01-38483.02, dated March 15, 2001, containing results of thermal conductance testing of Fiberon® Deck Boards-Embossed/Brushed.
- Architectural Testing Inc. Report Nos. 01-43073.01, dated November 15, 2002, containing results of testing to determine the coefficient of friction of both dry and wet surfaces of Fiberon® Deck Boards-Embossed/Brushed, in accordance with ASTM D 2394.
- Architectural Testing Inc. Report No. 01-38483.04, dated April 29, 2001, containing results of physical testing of Fiberon® Deck Boards-Embossed/Brushed.
- Report on Evaluating the Termite Resistance of Wood Composite Fiberon® Deck Boards-Embossed/Brushed, by Dr. T. L. Amburgey and Ms. S. V. Parikh, Mississippi State University, dated March 26, 2001, revised April 20, 2001.
- Quality Assurance Manual for Fiber Composites, LLC Deck Boards, dated March 28, 2001, revised May 18, 2003, signed by representatives of Fiber Composites, LLC and PFS Corporation, containing procedures for product identification, maintaining the quality assurance program for Fiber Composites, LLC Deck Boards and establishing PFS Corporation as the third-party inspection agency.
- Quality Assurance Manual for Fiber Composites, LLC Guardrail Systems, dated January 21, 2002, revised May 18, 2003, signed by representatives of Fiber Composites, L L C and PFS Corporation, containing procedures for product identification, maintaining the quality assurance program for Fiber Composites, LLC Guard Systems and establishing PFS Corporation as the third-party inspection agency.
- Architectural Testing Inc. Report No. 01-40954.01, dated May 1, 2002, containing results of physical testing of Fiberon® guard systems components.
- Architectural Testing Inc. Report No. 01-40546.04, dated July 17, 2002, containing structural load testing of Fiberon® guard system components.

ITEMS REQUIRING VERIFICATION

The following items are related to the use of the report subject, but are not within the scope of this evaluation. However, these items are related to the determination of code compliance:

- U Construction documents indicating compliance with this report.
- U Design and construction of the supporting construction for the Fiber Composites, LLC deck boards and guard systems.
- U Determination of the requirements for slip resistance in the specific application.
- U Handrails in conformance with the applicable code.

INFORMATION SUBMITTED

- Architectural Testing Inc. Report No. 01-38483.01, dated March 14, 2001, containing results of physical testing of Fiberon® Deck Boards-Embossed/Brushed.
- SGS Report No. 152216, dated February 27, 2001, containing results of testing to determine the ignition properties of Fiberon® Deck Boards-Embossed/Brushed in accordance with ASTM D 1929.
- SGS Report No. 151625, dated February 16, 2001, containing results of testing to determine the surface-burning characteristics of Fiberon® Deck Boards-Embossed/Brushed in accordance with ASTM E 84.
- Architectural Testing Inc. Report Nos. 01-43073.02, dated December 2, 2002, containing results of testing to determine the coefficient of friction of both dry and wet surfaces of Fiberon® Deck Boards-Molded, in accordance with ASTM D 2394.
- PFS Corporation Report No. 01-55, dated December 5, 2001, containing results of physical testing in accordance with ASTM D 198.
- PFS Corporation letter, dated December 16, 2002, containing an engineering analysis of the structural load testing signed and sealed by Larry L. Turner, P.E.

- Architectural Testing Inc. Report No. 01-43127.01, dated January 23, 2003, containing structural load testing of Fiberail® Guardrail Systems-Professional Series, Fiberail® Professional Guardrail Systems and Top Rail Guardrail Systems, components.
- Architectural Testing Inc. Report No. 01-44337.01, dated May 16, 2003, containing structural load testing of Fiber Composites, LLC post brackets.

APPLICATION FOR PERMIT

To aid in the determination of compliance with this report, the following represents the minimum level of information to accompany the application for permit:

- The language “See ICC-ES Legacy Report No. 22-41” or a copy of this report.
- Construction documents consistent with this report. These documents shall be prepared by an individual competent and qualified in the application of the structural design principles involved. For jurisdictions adopting the BOCA® *National Building Code*/1999, the individual shall possess the registration or license in accordance with the professional registration laws of the state in which the project is constructed. For jurisdictions adopting the 1998 *International One-and Two-Family Dwelling Code*®, the seal of an architect or engineer shall be provided on the details and specifications when required by the code, the code official or the statutes of the jurisdiction in which the project is to be constructed. The following items, at a minimum, shall be provided on the construction documents:

- On-center spacing of the supporting construction.
- Design live load imposed on Fiber Composites, LLC deck boards.
- Type and location of fasteners to secure Fiber Composites, LLC deck boards and guard systems to the supporting construction.
- For jurisdictions adopting the BOCA® *National Building Code*/1999, structural calculations and details verifying the ability of the building structure to support all superimposed loads required by Chapter 16 of the code; and
- For jurisdictions adopting the 1998 *International One-and Two-Family Dwelling Code*®, details and specifications verifying that the building structure complies with the code.

PRODUCT IDENTIFICATION

Fiber Composites, LLC deck boards and guard systems, or the packaging, manufactured in accordance with this report shall bear the following identification:

- Product name.
- Manufacturer’s name and location.
- Method of identifying the date of manufacture.
- “See ICC-ES Legacy Report No. 22-41.”
- Labeling requirements of PFS, the third-party inspection agency.

**TABLE 1—FIBER COMPOSITES, LLC
DECK BOARD AND GUARDRAIL SYSTEMS**

PRODUCT NAME	DISTRIBUTOR	TRADE NAME
FIBER COMPOSITES' DECKING	LUMBERMENS	FIBER COMPOSITES' DECKING (formally known as PERFECTION™)
FIBERAIL® GUARDRAIL SYSTEMS-PROFESSIONAL SERIES	BOISE	PROVINCIAL GUARDRAIL SYSTEMS
FIBERAIL® PROFESSIONAL GUARDRAIL SYSTEMS	BOISE	MISSION GUARDRAIL SYSTEMS

TABLE 2—DIMENSIONS OF FIBERON® GUARD SYSTEMS

Component/Dimensions (inches)	Fiberon® Railing Severe Weather™	Fiberon® Guardrail Systems- Home Series	Fiberon® Guardrail Systems- Professional Series
Overall ² (Height × Length × Thickness)	36 × 48 × 0.20 36 × 72 × 0.20 36 × 96 × 0.30 42 × 48 × 0.20 42 × 72 × 0.20 42 × 96 × 0.30	36 × 48 × 0.20 36 × 72 × 0.20	36 × 48 × 0.30 36 × 72 × 0.30 36 × 96 × 0.30 42 × 48 × 0.30 42 × 72 × 0.30 42 × 96 × 0.30
Top Rail (Width × Depth × Length × Thickness)	Deluxe 2.775 × 2.265 × 48 × 0.20 2.775 × 2.265 × 72 × 0.20 2.775 × 2.265 × 96 × 0.30	Deluxe 2.775 × 2.265 × 48 × 0.20 2.775 × 2.265 × 72 × 0.20	Deluxe 2.775 × 2.265 × 48 × 0.30 2.775 × 2.265 × 72 × 0.30 2.775 × 2.265 × 96 × 0.30
	Flat 3.5 × 2.0 × 48 × 0.20 3.5 × 2.0 × 48 × 0.20 3.5 × 2.0 × 48 × 0.30	Flat 3.5 × 2.0 × 48 × 0.20 3.5 × 2.0 × 72 × 0.20	Flat 3.5 × 2.0 × 48 × 0.30 3.5 × 2.0 × 72 × 0.30 3.5 × 2.0 × 96 × 0.30
Bottom Rail (Width × Depth × Length × Thickness)	Edge 2.0 × 3.0 × 48 × 0.20 2.0 × 3.0 × 72 × 0.20 2.0 × 3.0 × 96 × 0.30	Edge 2.0 × 3.0 × 48 × 0.20 2.0 × 3.0 × 72 × 0.20	Edge 2.0 × 3.0 × 48 × 0.30 2.0 × 3.0 × 72 × 0.30 2.0 × 3.0 × 96 × 0.30
Balusters (Width × Depth × Thickness)	Square-1.25 × 1.25 × 0.120	Square-1.25 × 1.25 × 0.120	Square-1.25 × 1.25 × 0.120
	Colonial-1.25 × 1.25 × 0.120	Colonial-1.25 × 1.25 × 0.120	Colonial-1.25 × 1.25 × 0.120
Baluster Lengths	Square-31.5, 33.5 & 40	Square-31.5, 33.5 & 40	Square-31.5, 33.5 & 40
	Colonial-31.5 & 34.0	Colonial-31.5 & 34.0	Colonial-31.5 & 34.0
Baluster Spacing ³	Square-5.0 Colonial-4.5	Square-5.0 Colonial-4.5	Square-5.0 Colonial-4.5
Post (Width × Depth × Thickness × Length)	4.0 × 4.0 × 0.25 × 48 or 54	4.0 × 4.0 × 0.25 × 48 or 54	4.0 × 4.0 × 0.25 × 48 or 54
Post Bracket (36-inch-high guards) (Width × Depth × Thickness × Length)	Standard 5.875 × 5.125 × 0.074 × 7.25	Standard 5.875 × 5.125 × 0.074 × 7.25	Standard 5.875 × 5.125 × 0.074 × 7.25
Post Bracket (42-inch-high guards) (Width × Depth × Thickness × Length)	Professional 5.875 × 5.125 × 0.123 × 7.25	Professional 5.875 × 5.125 × 0.123 × 7.25	Professional 5.875 × 5.125 × 0.123 × 7.25
ULTI-MOUNT Post (concrete slab or wood surface mount) (Width × Depth × Thickness × Length)	3.5 × 3.5 × 0.375 × 24	3.5 × 3.5 × 0.375 × 24	3.5 × 3.5 × 0.375 × 24

Notes to Table 2:

- 1 inch = 25.4 mm
- Height dimension is measured from the top of the horizontal top rail to the top of the floor surface. Length dimension is measured from centerline to centerline of vertical posts.
- Spacing dimension is measured from centerline to centerline of balusters.

TABLE 3—DIMENSIONS OF FIBERAIL® AND TOP RAIL GUARDRAIL SYSTEMS

Component/Dimensions (inches)	Provincial	Mission
Overall ² (Height × Length × Thickness)	36 × 48 × 0.275 36 × 72 × 0.275 36 × 96 × 0.275 42 × 48 × 0.275 42 × 72 × 0.275 42 × 96 × 0.275	36 × 48 × 0.275 36 × 72 × 0.275 36 × 96 × 0.275 42 × 48 × 0.275 42 × 72 × 0.275 42 × 96 × 0.275
Top Rail (Width × Depth × Length × Thickness)	3.15 × 3.30 × 48 × 0.275 3.15 × 3.30 × 72 × 0.275 3.15 × 3.30 × 96 × 0.275	3.15 × 3.30 × 48 × 0.275 3.15 × 3.30 × 72 × 0.275 3.15 × 3.30 × 96 × 0.275
Bottom Rail (Width × Depth × Length × Thickness)	Edge 3.5 × 1.975 × 48 × 0.275 3.5 × 1.975 × 72 × 0.275 3.5 × 1.975 × 96 × 0.275	Edge 3.5 × 1.975 × 48 × 0.275 3.5 × 1.975 × 72 × 0.275 3.5 × 1.975 × 96 × 0.275
Balusters (Width × Depth × Thickness)	Square-1.25 × 1.25 × 0.120	Square-1.25 × 1.25 × 0.120
	Colonial-1.25 × 1.25 × 0.125	Colonial-1.25 × 1.25 × 0.125
Baluster Lengths	Square-33.5 & 40	31.5, 33.5 & 40
	Colonial-34.0	Colonial-34.0
Baluster Spacing ³	Square-5.0	Square-5.0
	Colonial-4.5	Colonial-4.5
Post (Width × Depth × Thickness × Length)	4.0 × 4.0 × 0.25 × 48 or 54	4.0 × 4.0 × 0.25 × 48 or 54
Post Bracket (36-inch-high guards) (Width × Depth × Thickness × Length)	Standard 5.875 × 5.125 × 0.074 × 7.25	Standard 5.875 × 5.125 × 0.074 × 7.25
Post Bracket (42-inch-high guards) (Width × Depth × Thickness × Length)	Professional 5.875 × 5.125 × 0.123 × 7.25	Professional 5.875 × 5.125 × 0.123 × 7.25
ULTI-MOUNT Post (concrete slab or wood surface mount) (Width × Depth × Thickness × Length)	3.5 × 3.5 × 0.375 × 24	3.5 × 3.5 × 0.375 × 24

Notes to Table 3:

- 1 inch = 25.4 mm
2. Height dimension is measured from the top of the horizontal top rail to the top of the floor surface. Length dimension is measured from centerline to centerline of vertical posts.
3. Spacing dimension is measured from centerline to centerline of balusters.

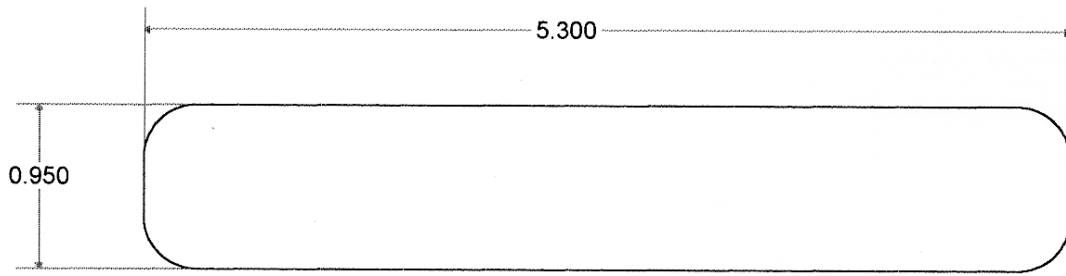


FIGURE 1*
FIBERON® DECK BOARDS-EMBOSSSED/BRUSHED

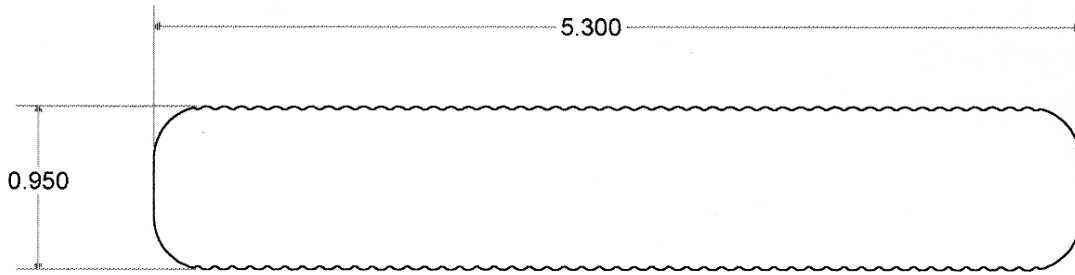


FIGURE 2*
FIBERON® DECK BOARDS-MOLDED
FIBER COMPOSITES' DECKING-MOLDED/EMBOSSSED
FIBERON® PROFESSIONAL® DECK BOARDS-MOLDED/EMBOSSSED
PORTICO™-MOLDED/EMBOSSSED
VERANDA™ DECK BOARDS-MOLDED

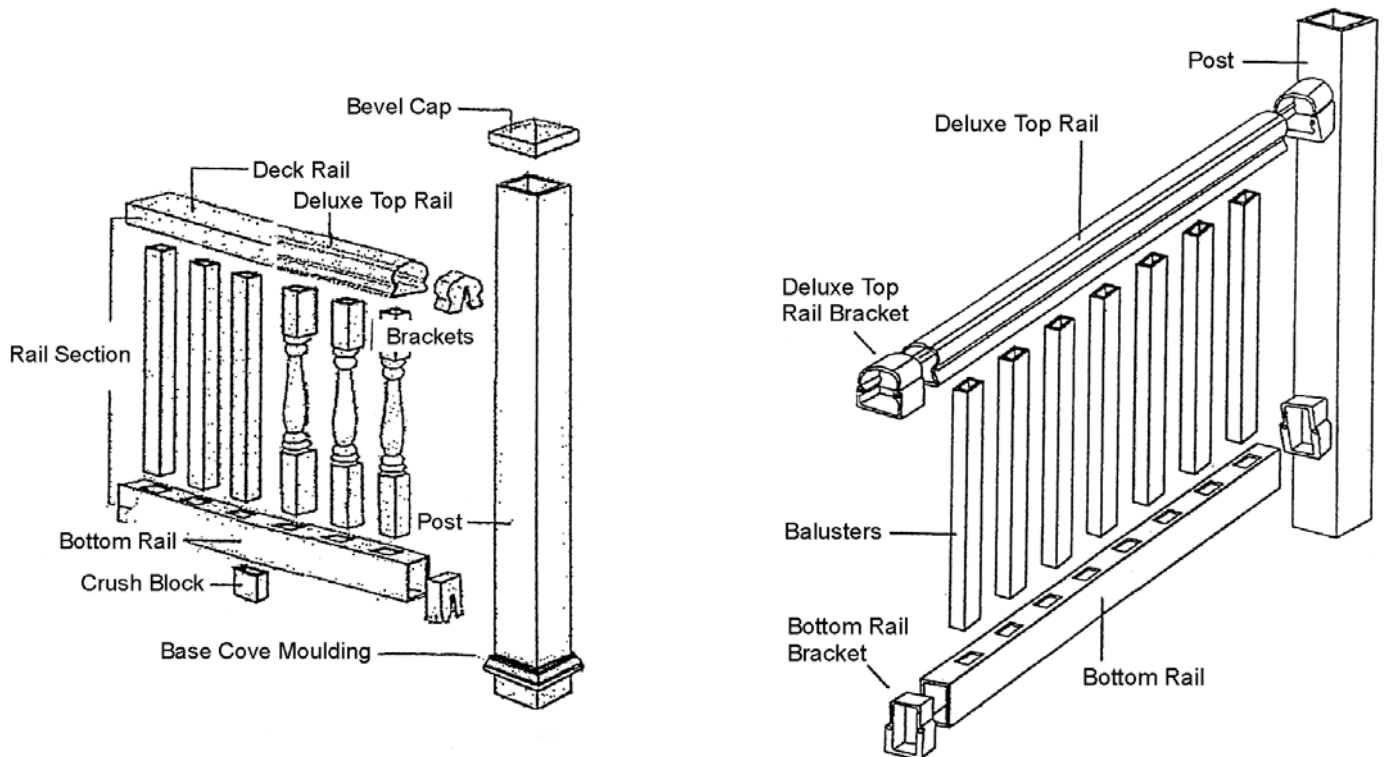


FIGURE 3*
FIBERON® GUARDRAIL SYSTEMS-HOME SERIES
FIBERON® RAILING SEVERE WEATHER™

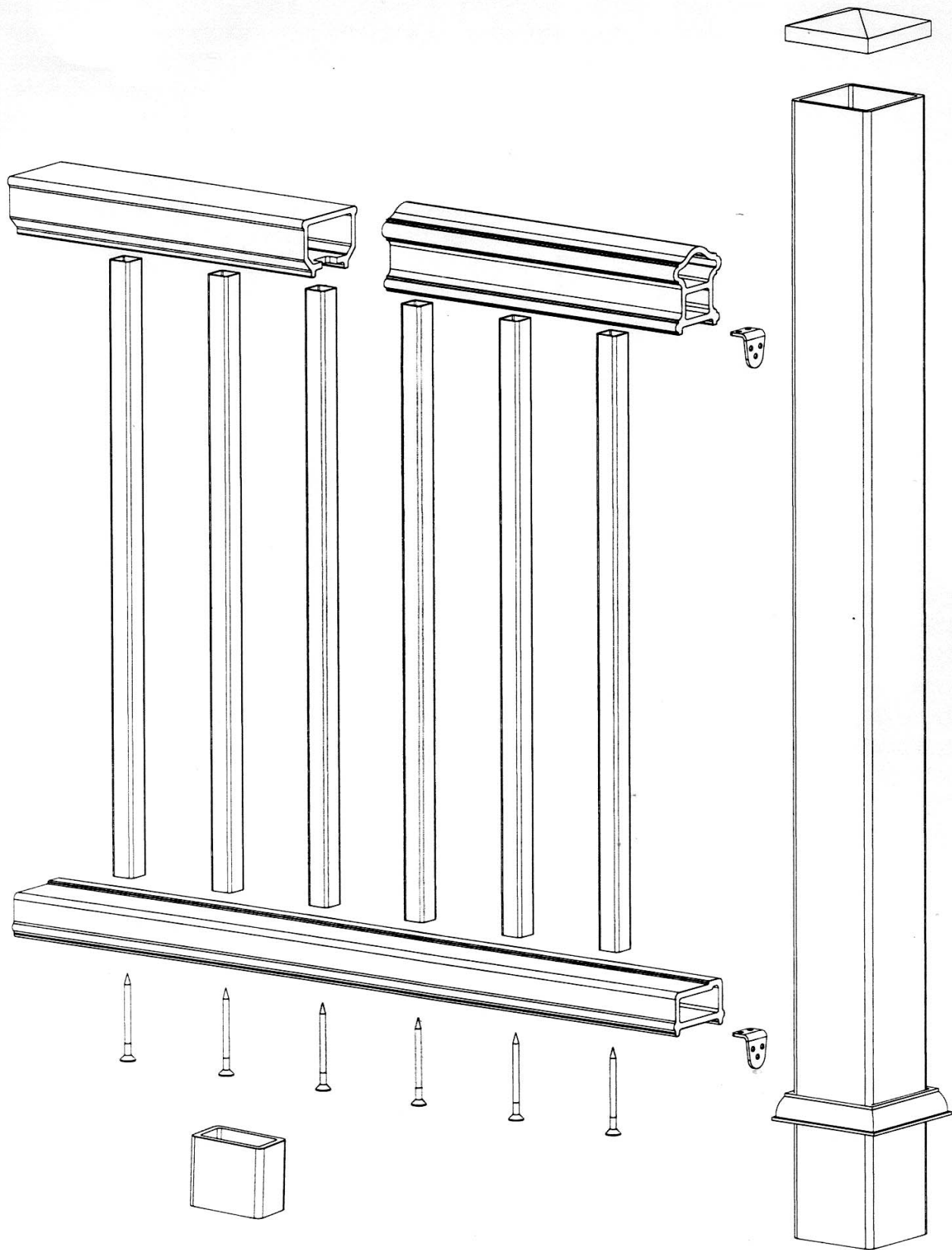


FIGURE 4*
FIBERRAIL® GUARDRAIL SYSTEMS-PROFESSIONAL
FIBERRAIL® PROFESSIONAL GUARDRAIL SYSTEMS
TOP RAIL GUARDRAIL SYSTEMS

*THESE DRAWINGS ARE FOR ILLUSTRATION PURPOSES ONLY. THEY ARE NOT INTENDED FOR USE AS CONSTRUCTION DOCUMENTS FOR THE PURPOSE OF DESIGN, FABRICATION OR ERECTION.