



ICC-ES Evaluation Report

Reissued February 2022

ESR-3168

This report is subject to renewal February 2023.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 53 00—Plastic Decking

REPORT HOLDER:

TREX COMPANY, INC.

EVALUATION SUBJECT:

TREX® TRANSCEND® AND SELECT® COMPOSITE DECKING

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2018 and 2015 *International Building Code*® (IBC)
- 2018 and 2015 *International Residential Code*® (IRC)

Properties evaluated:

- Structural
- Durability
- Surface-burning characteristics

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

- 2019 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2020, 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2020, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

Trex® Transcend® and Select® Composite Decking are for use as deck boards (Figures 1, 2 and 3) for exterior balconies, porches, decks, stair treads and other exterior walking surfaces of Type V-B (IBC) construction, and other construction types, as allowed in the IBC, and in structures constructed in accordance with the IRC. Trex® Transcend®, and Select® Fascia Boards (Figure 4) are for use as nonstructural trim components for exterior balconies, porches and decks of Type V-B (IBC) construction, and other construction types, as allowed in the IBC, and in structures constructed in accordance with the IRC.

3.0 DESCRIPTION

3.1 General:

Trex® composite decking and fascia are a wood thermoplastic composite (WTC), with an integrated shell that covers the boards on the top surface and sides. The underside of the boards and fascia is not covered by the integrated shell. The integrated shell consists of a proprietary surface formulation that produces a natural, wood-like grain pattern finish. The deck board and fascia are made from approximately 50 percent wood fiber and 50 percent polyethylene by weight, and are alternatives to preservative-treated or naturally durable lumber. Trex® composite decking and fascia are manufactured by a continuous extrusion process and is available in various colors, sizes, and textures per each product as described in Sections 3.1.1, 3.1.2 and 3.1.3. The Trex® Hideaway® hidden fastening system (Figure 5) is described in Section 3.1.4.

The attributes of the Trex® composite decking have been verified as conforming to the provisions of (i) CALGreen Section A5.406.1.2 for reduced maintenance; (ii) ICC 700-2020, ICC 700-2015 and ICC 700-2012 Section 602.1.6 and 11.602.1.6 for termite-resistant materials; (iii) ICC 700-2020 Sections 601.7 and 11.601.7 and ICC 700-2015 and ICC 700-2012 Sections 601.7, 11.601.7, and 12.1(A).601.7 for site-applied finishing materials; and (iv) ICC 700-2008 Section 6.2.8 for termite-resistant materials and Section 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 3.2 for limitations on termite-resistant use.

3.1.1 Trex® Transcend® Composite Decking:

Transcend® composite decking is available in the following colors: Gravel Path, Fire Pit, Vintage Lantern, Tree House, Rope Swing, Spiced Rum, Lava Rock, Island Mist, Havana Gold, and Tiki Torch. Transcend® composite decking has square-edge and grooved-edge profiles. The nominal 1x6 square-edge and grooved-edge deck boards have actual dimensions of 0.94-inches by 5.5-inches (see Figure 1). The nominal 2x6 square-edge deck boards have actual dimensions of 1.3-inches by 5.5-inches (see Figure 3).

3.1.2 Trex® Select® Composite Decking:

Select® composite decking is available in the following colors:

Madeira, Pebble Grey, Winchester Grey, Woodland Brown, and Saddle. Select® composite decking has square-edge and grooved-edge profiles. The nominal 1x6 square-edge and grooved-edge deck boards have actual dimensions of 0.82-inches by 5.5-inches (see Figure 2). The nominal 2x6 square-edge deck boards have actual dimensions of 1.3-inches by 5.5-inches (see Figure 3).

3.1.3 Trex® Transcend® and Select® Composite Fascia: Nominal 1x8 and 1x12 composite fascia boards have actual dimensions of 0.56 inches by 7.25 inches and 0.56 inches by 11.375 inches, respectively. See Figure 4.

3.1.4 Trex® Hideaway® Universal Hidden Fastening System: The hidden fastener system is designed for Trex® composite deck boards having grooved edges and consists of a plastic universal clip and No. 7 by 1⁵/₈-inch stainless steel flathead screw (included). See Figure 5.

3.2 Durability:

When subjected to weathering, insect attack and other decaying elements, the deck board and fascia material is equivalent in durability to preservative-treated or naturally durable lumber. Accordingly, the material is allowed to be used as an alternative to preservative-treated or naturally durable lumber on exterior decks, porches, balconies and stair treads, as applicable. The deck board and fascia have been evaluated for use in ambient air temperatures between -20°F (-29°C) and 125°F (52°C).

3.3 Surface-Burning Characteristics:

When tested in accordance with ASTM E84, Trex® composite boards have a flame-spread index no greater than 200.

4.0 DESIGN AND INSTALLATION

4.1 Deck Boards:

The deck boards may be installed perpendicular or at an angle to the supporting construction. Table 1 lists the maximum spacing for deck boards installed perpendicular or at an angle to the supporting construction. Deck boards must span continuously over at least three supports (minimum two-span condition). The deck boards must be spaced at edges and ends in accordance with the manufacturer's published installation instructions.

4.2 Deck Boards Used as Stair Treads:

The deck boards, when used as stair treads, are sufficient to resist the code-prescribed concentrated load of 300 lbf (1.33 kN) when installed at a maximum center-to-center spacing as indicated in Table 2. Deck boards used as stair treads must span continuously over at least three supports (minimum two-span condition).

4.3 Deck Board Fasteners:

Trex® grooved-edge boards, when installed perpendicular to the supporting construction with the Trex® Hideaway® Universal Hidden Fastening System with No. 7 by 1⁵/₈-inch stainless steel flathead screws (included), have an uplift rating of 100 psf (4788 Pa) up to a maximum center-to-center span of 16 inches (406 mm) when installed at each support. Trex® square-edge boards (no edge groove) are installed with two No. 8 or No. 10 by 2¹/₂-inch composite deck screws, as recommended by the manufacturer (not included) at each support and ends, at least 1 inch (25.4 mm) from the board end and sides. The allowable fastener head pull-through capacity for the screws is 237 lbf (1054 N) per fastener. Multiple joists or blocking must be used to provide adequate surface for fastener embedment at board ends.

5.0 CONDITIONS OF USE

The Trex® 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 Trex® composite decking is limited to exterior use as deck boards for balconies, porches, decks and stair treads of Type V-B (IBC) construction, and other construction types, as allowed in the IBC, and in structures constructed in accordance with the IRC.
- 5.2 Trex® composite fascia is limited to exterior use as trim for balconies, porches and decks of Type V-B (IBC) construction, and other construction types, as allowed in the IBC, and in structures constructed in accordance with the IRC.
- 5.3 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. When the manufacturer's published installation instructions differ from this report, this report governs.
- 5.4 The use of the Trex® composite decking and fascia 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 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 from 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 Trex® composite decking and fascia are produced in Winchester, Virginia, and Fernley, Nevada, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with applicable portions of the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated January 2012 (editorially revised December 2019).

7.0 IDENTIFICATION

- 7.1 The deck board and fascia board described in this report must be identified by a label on the packaging bearing the Trex Company, Inc. name and address, the product name and the evaluation report number (ESR-3168).
- 7.2 The report holder's contact information is the following:

TREX COMPANY, INC.
160 EXETER DRIVE
WINCHESTER, VIRGINIA 22602
(540) 542-6300
www.trex.com

TABLE 1—DECK BOARD SPAN RATING

DECK BOARD	ANGLE WITH RESPECT TO JOIST (degrees)	MAXIMUM SPAN ¹ (inches)	ALLOWABLE CAPACITY ^{2,3} (lb/ft ²)
Transcend® 1x6 Square-Edge and Grooved-Edge	30	8	100
	45	12	100
	60	14	100
	90	16	100
Select® 1x6 Square-Edge and Grooved-Edge	30	8	100
	45	12	100
	60	14	100
	90	16	100
Transcend® and Select® 2x6 Square-Edge	30	12	100
	45	16	100
	60	20	100
	90	24	100

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

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

²Requires minimum two-span continuous installation. ³Maximum allowable capacity is adjusted for durability. No further increases are allowed.

TABLE 2—MAXIMUM STAIR TREAD SPANS²

DECK BOARD	MAXIMUM SPAN (inches) ¹
Transcend® 1x6 Square-Edge and Grooved-Edge	12
Select® 1x6 Square-Edge and Grooved-Edge	9
Transcend® and Select® 2x6 Square-Edge	12

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

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

²Requires minimum two-span continuous installation.

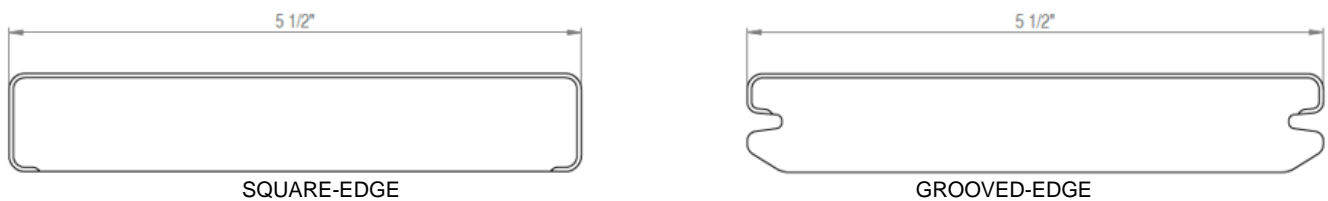


FIGURE 1—TREX® TRANSCEND® 1X6 SQUARE-EDGE AND GROOVED-EDGE DECK BOARD PROFILES
(See Section 3.1.1 for Board Thickness)

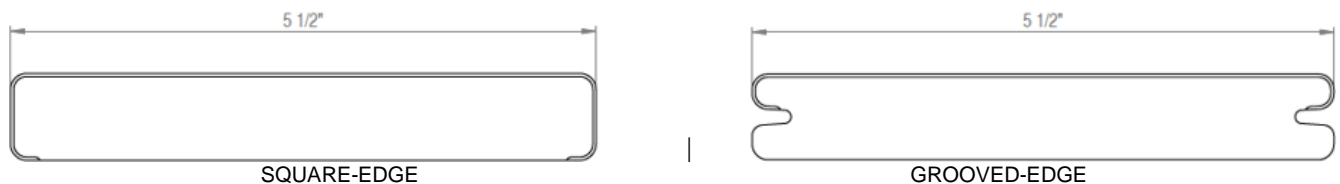


FIGURE 2—TREX® SELECT® 1X6 SQUARE-EDGE AND GROOVED-EDGE DECK BOARD PROFILES
(See Section 3.1.2 for Board Thickness)

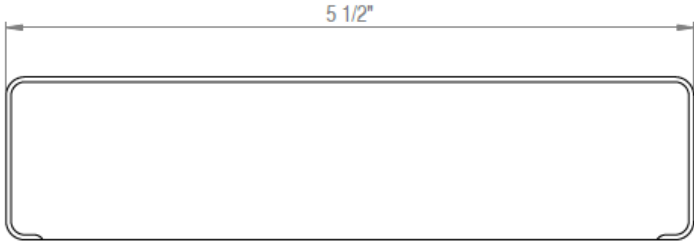


FIGURE 3—TREX® TRANSCEND® AND SELECT® 2X6 SQAURED-EDGE DECK BOARD PROFILE
(See Sections 3.1.1 and 3.1.2 for Board Thickness)

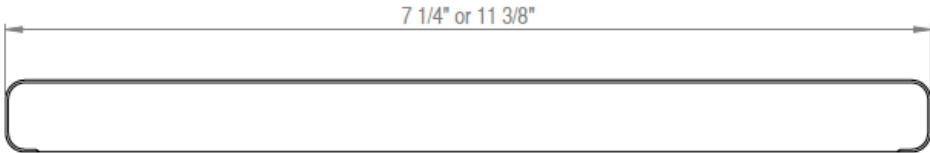


FIGURE 4—TREX® FASCIA PROFILE
(See Section 3.1.3 for Board Thickness)

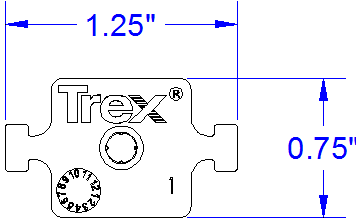


FIGURE 5—TREX® HIDEAWAY® UNIVERSAL HIDDEN FASTENER PROFILE

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Trex® Transcend® and Select® Composite Decking, described in ICC-ES evaluation report ESR-3168, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Trex® Transcend® and Select® Composite Decking, described in Sections 2.0 through 7.0 of the evaluation report ESR-3168, comply with CBC Chapter 26, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapter 26, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Trex® Transcend® and Select® Composite Decking, described in Sections 2.0 through 7.0 of the evaluation report ESR-3168, comply with CRC Chapter 5, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 5, as applicable.

This supplement expires concurrently with the evaluation report, reissued February 2022.