

EUROPEAN PHYSICAL & MECHANICAL PROPERTIES OF TREX TRANSCEND® AND TREX ENHANCE®

EUROPEAN PHYSICAL & MECHANICAL PROPERTIES			
CRITERION	TEST METHOD	RESULTS	TEST EXPLANATION
Bending Modulus	PrEN 15534-1:2012		
Trex Transcend & Enhance (25.4 mm)	Deflection under load of 500N < / = 2.0 mm	Pass	3-point bend test to determine the amount of flexibility at break that a sample possesses
Breakage Modulus [psi]	PrEN 15534-1:2012		
Trex Transcend & Enhance (25.4 mm)	F' max > / = 3300 N	Pass	Maximum amount of force in a 3-point bend test that it takes to break a sample
Determination of Slipperiness	PrEN 15534-1	Angle/Quality Class	
Trex Transcend (25.4 mm)	Average angle of inclination	28 / C	Wet-loaded barefooted areas, walking method-ramp test
Trex Enhance (25.4 mm)	Average angle of inclination	32 / C	Wet-loaded barefooted areas, walking method-ramp test
Fire Resistance Testing	EN ISO 11925-2:2010 & EN ISO 9239-1:2010	Classification	
Trex Transcend (25.4 mm)		Fire Class = Cfl - s1	Classification according to EN 13501-1
Trex Enhance (25.4 mm)		Fire Class = Efl	Classification according to EN 13501-1
Creep Behavior	PrEN 15534-1, 7.4.1		
Trex Transcend & Enhance (25.4 mm)		Pass	3-point bend test under constant load of 850 N for 168 hr. Must deflect less than 10 mm
Falling Mass Impact Resistance	PrEN 15534-4: 2012		
Trex Transcend & Enhance (25.4 mm)		Pass	1000 gram striker falling from 700 mm. Distance between supports for the boards = 200 mm. Must not indent more than > / = 0.5 mm

* German/Euro lab = "eph"—Entwicklungs—und Prüflabor Holztechnologie GmbH (Dresden, Germany)

PHYSICAL & MECHANICAL PROPERTIES OF TREX TRANSCEND® AND TREX ENHANCE®

GENERAL PHYSICAL & MECHANICAL PROPERTIES			
CRITERION	TEST METHOD	RESULTS	TEST EXPLANATION
Thermal Expansion Coefficient (Transcend and Enhance)	ASTM D696		
Width		8.94 x 10 - 5 cm/cm/C	Distance a 305 mm sample expands or contracts in the width direction at various temperatures
Length		4.1 x 10 - 5 cm/cm/C	Distance a 305 mm sample expands or contracts in the length direction at various temperatures
Compressive Strength (Transcend and Enhance)	ASTM D695		
Surface		12.45 MPa	Force required to compress the surface of a sample between two (2) 50 mm spheres for a 0.2 mm indentation
Edge		13.40 MPa	Force required to compress the edges of a sample between two (2) 50 mm spheres for a 0.2 mm indentation
Relative Density [g/cm³] (Transcend and Enhance)	ASTM D792		
		1.05	Mass per unit volume as compared to water (1.00 g/cm ³)
Resistance to Fungal Infestation	ASTM D1413		
[Brown, White Rot]		No decay	Samples are subjected to wood destroying fungi (white and brown rot) and evaluated for decay and weight loss.
Screw Retention (Transcend and Enhance)	ASTM D1761		
#8 screws		1,377.25 N/m	Amount of force it takes for a screw to be removed from a deck board
Water Absorption (Transcend and Enhance)	ASTM D1037		
Vol. %		<0.5%	Weight gain measurement of a deck board when immersed in water for 24 hrs.
Mass %		0	Change in mass measurement of a deck board when immersed in water for 24 hrs.

*ASTM (American Society for Testing of Materials) tests conducted at Washington State University (Pullman, WA, USA)

ARCHITECTURAL SPECIFIER

COMPOSITE DECKING

PART 1: GENERAL

1.1 Section Includes

- A Composite Decking

1.2 References

- A prEn 15534 -1:2012 (EN ISO 11925-2 and EN ISO 9239-1): Fire Resistance Test.
- B prEn 15534-1: 2012: Determination of Slipperiness (Wet-loaded Barefooted Areas, Walking Method—Ramp Test)
- C prEN 15534-1:2012: Determination of Modulus of Elasticity in Bending and Bending Strength of Profiles
- D prEN 15534-4: 2012: Falling Mass Impact Resistance
- E ASTM D1761: Standard Test Method for Mechanical Fasteners in Wood
- F ASTM D1413: Standard Test Method for Wood Preservatives by Laboratory Soil Block Cultures
- G ASTM D198 -09: Standard Test Method of Static Tests of Lumber in Structural Sizes
- H ASTM D-7031-04: Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products
- I ASTM D-7032-04: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail systems
- J ASTM D 695: Standard Test Method of Compressive Properties of Rigid Plastics
- K ASTM D 696: Standard Test Method for Coefficient of Thermal Linear Expansion of Plastics

1.3 Design/Performance Requirements

A Structural Performance:

- a Deflection under load of 500 N \leq 2.0 mm (arithmetic mean value) at 406 mm span
- b Creep behaviour in a 3 point-bending-test under a constant load of 850 N in a defined atmosphere (50 C and 50% RH) for 168 h (at 406 mm) must be \leq 10 mm (arithmetic mean value)
- c Falling mass impact using 1000 g at a height of 700 mm and a span of 200 mm should be \leq 0.5 mm

- d Treads of Stairs; Concentrated Load: 35910 Pa (750 lbf/sq. ft) and 3.175 mm (1/8") with a concentrated load of 1.33 kN (300 lbf) on area of 25.8 sq. cm (4 sq. in.)

B Combustion Characteristics prEn 15534 -1:2012 (EN ISO 11925-2 and EN ISO 9239-1): Fire Resistance Test.

1.4 Submittals

A Product Data: Indicate Sizes, profiles, surface style, and performance characteristics.

B Samples: For each product specified, one sample, minimum size 101 mm (4 inches), representing actual product, color, and finish.

1.5 Delivery, Storage, and Handling

A Storage and Handling:

- a Never dump Trex® materials when unloading.
- b Store on a flat surface or with supports .61 m (2 feet) on center
- c Refer to Trex Installation Guide at trex.com for additional guidelines.

1.6 Warranty

A Residential and Commercial: Limited Residential Warranty against material defects in workmanship and materials, and shall not split, splinter, rot or suffer structural damage from termites or fungal decay. The terms of such warranty shall be twenty-five (25) years from the date of original purchase for a residential purchaser, and ten (10) years from the date of original purchase for a commercial purchaser.

B Fade and Stain (Trex Transcend® and Trex Enhance®): Trex Company, Inc. warrants to the original end-user purchaser that Trex Transcend decking or porch planks, or Trex Enhance decking under normal residential use and service conditions as follows;

- a Fade Resistance: The Product shall not fade in color from light and weathering exposure as measure by color change of more than 5 Delta E (CIE) units.
- b Stain Resistance: The Product shall be resistant to permanent staining resulting in spills of food and beverage items that would typically be present on a residential deck, or mold and mildew naturally occurring in the environment, provided that such substances are removed from the Product with soap and water or mild household cleaners after no more than one (1) week of exposure of the food or beverage to the surface or fist appearance of the mold and mildew.

PART 2: PRODUCTS

2.1 Manufacturers

A Contract Documents are based on products by:
 Trex Company, Inc.
 160 Exeter Dr.
 Winchester, VA 22603

B Substitutions: Not permitted under Division 01

2.2 Applications/Scope

A Wood/Plastic Composite Lumber;

a Material Description; Capped composite plank consisting of linear low density polyethylene (LLDPE) and wood flour as the core. A proprietary protective shell made of cohesive materials is on the top of the board. The product is extruded into sizes and shapes indicated with the following properties;

b Trex Transcend® and Trex Enhance®

- 25 mm x 140 mm

- Lengths—3.66 m, 4.88 m, and 6.10 m

- Colors;

Transcend—Fire Pit, Gravel Path, Havana Gold, Island Mist, Lava Rock, Rope Swing, Spiced Rum, Tiki Torch, Tree House, Vintage Lantern

Enhance—Beach Dune, Clam Shell, Saddle

- Specific Gravity—1.05 g/cm³ when tested in accordance to ASTM D -792

- Determination of Slipperiness when tested in accordance to prEn 15534-1: 2012 (wet-loaded barefooted areas, walking method—ramp test);

Transcend—Quality class according to DIN 51097 = C

Enhance—Quality class according to DIN 51091 = C

- Fire Resistance Testing when tested in accordance with EN ISO 11925-2 and EN 9239-1 was fulfilled for all variants

Transcend—Fire class based upon EN 13501-1 = C fl—s1

Enhance—Fire class based upon EN 13501-1 = E fl

- Determination of Bending Properties when testing according Annex A of prEN 15534-1: 2012;
 - Transcend®—Deflection under load of 500N at 406mm span = “Pass”
 - Enhance®—Deflection under load of 500N at 406mm span = “Pass”
- Determination of Creep Behaviour when tested according to prEN 15534-1: 2012
 - Transcend—3-point-bend-test under a constant load of 850N at 406mm span = “Pass”
 - Enhance—3-point-bend-test under a constant load of 850N at 406mm span = “Pass”
- Determination of Falling Mass Impact Resistance in accordance with prEn 15534-1:2012
 - Transcend—Indentation of ≤ 0.5 mm using a 1000 g striker falling from 700 mm using a span of 200 mm = “Pass”
 - Enhance—Indentation of ≤ 0.5 mm using a 1000 g striker falling from 700 mm using a span of 200 mm = “Pass”
- Thermal Expansion Coefficient when tested in accordance with ASTM D 696;
 - Transcend and Enhance
 - a Width— 8.94×10^{-5} cm/cm/C degrees
 - b Length— 4.1×10^{-5} cm/cm/C degrees
- Resistance to Fungal Infestation when tested in accordance to ADMD 1413;
 - Transcend and Enhance = No decay
- Screw Retention when tested in accordance to ASTM D 1761(#8 screws)+;
 - Transcend and Enhance = 1377.25 N/m

2.3 Accessories

A Fasteners:

- a Concealed Fasteners; Trex Hideaway® Universal Fastener
- b Screws; No. 8, 63.5mm stainless steel or high quality coated screws designed for composite decking;
 - Approved Trex screws include; Fastenmaster® Trapease® II Composite Screw*, Dexxter™ Composite Screw**, DeckFast Cap-Tor® XD, Headcote Cap-Tor XD***, C-Deck Exterior Star Drive Composite Deck Screw****, Phillips II Plus® Pozisquare*****, Fastenmaster Cortex Concealed Fasteners*

*FastenMaster® TrapEase® II and Cortex® are registered trademarks of OMG, Inc. ** Dexxter® is a registered trademark of Simpson Strong-Tie Company, Inc. *** DeckFast® Cap-Tor® xd and HeadCote® CapTor® xd are registered trademarks of Starborn Industries Inc. ****C-Deck Exterior Star Drive Composite Deck Screw is a product of Screw Products Inc. *****Phillips II Plus® is a registered trademark of Phillips Fasteners LLC.

PART 3: EXECUTION

3.1 Examination

- A Install according to manufactures instructions. *See trex.com for the most up-to-date installation instructions.*
- B Cut, drill, and rout using carbide tipped blades
- C Pre-drill holes for face screws if less than 25 mm from ends of plank
- D **Do NOT use Trex composite wood material for structural applications.**

3.2 Cleaning

- A Refer to trex.com for the most up-to-date cleaning recommendations.