



Code Compliance Research Report

CCRR-0144

Subject to Renewal: 10/10/2012
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Page 1 of 4

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1.0 Subject

EnDeck[®] Deck Boards

2.0 Research Scope

2.1. Building Codes:

2009 International Building Code (IBC)
2009 International Residential Code (IRC)

2.2. Properties:

Structural Performance
Durability
Surface Burning
Decay Resistance
Termite Resistance

3.0 Description

3.1. General – *EnDeck*[®] deck boards are intended for use as a walking surface on exterior decks, balconies, porches, and walkways, including stairs.

3.2. Materials and Processes - *EnDeck*[®] deck boards are extrusions of cellular Polyvinyl Chloride (PVC) in the following colors: Gray, Tan, Khaki and Ironwood.

3.3. Profiles - *EnDeck*[®] deck boards have either a solid or grooved cross-section with nominal dimensions of 1.0 inch thick by 5.5 inches wide. See Figures 1 and 2.

3.4. Walking Surface - *EnDeck*[®] deck boards have an embossed simulated wood-grain pattern surface.

4.0 Performance Characteristics

4.1. *EnDeck*[®] deck boards are rated for a uniform live load of 100 lb/ft² when installed on support framing spaced at 16 inches.

4.2. Deck boards used as stair treads are rated for the code-prescribed concentrated load equal to 300 lb when installed with a maximum span of 10 inches. Deck boards used as stair treads shall be installed in a minimum two-span condition. Grooved deck boards may not be used as stair treads.

4.3. *EnDeck*[®] deck boards have the following wind uplift resistance ratings, as determined by the fastening method, when installed on support framing spaced at 16 inches:

- Solid deck board face-fastened using 2.5 inch long FastenMaster Trim Top[™] Stainless Steel Coated Trim Screw – 197 lb/ft².
- Solid deck board face-fastened using #10-12 x 2.5 inch long Hawk Fastener Corporation Square Drive Mushroom Head Composite Deck Screw – 197 lb/ft².
- Solid deck board face-fastened using GRK Fasteners 0.12 inch dia. x 2.5 inch long Kameleon[™] Composite Deck Screw – 197 lb/ft².
- Solid deck board fastened using HIDfast HF3 hidden fastening system – 175 lb/ft².
- Solid deck board fastened using TigerClaw TC-3S fastener – 195 lb/ft².
- Grooved deck board fastened using TigerClaw TC-G fastener – 135 lb/ft².

4.4. Materials used in the deck board have a flame spread index of 20 when tested in accordance with ASTM E 84. The referenced criteria of AC174 requires the material to have a flame spread index not greater than 200 when tested in accordance with ASTM E 84.

4.5. Materials used in the deck board are deemed equivalent to preservative treated or naturally durable wood for resistance to weathering effects, attack from termites, and fungus decay.

4.6. Structural performance has been demonstrated for a temperature range from -20°F to 125°F.

5.0 Installation

Installation shall be in accordance with the manufacturer's installation instructions and this report. Where differences occur between this report and the manufacturer's installation instructions, this report shall govern.

5.1. Solid deck boards may be face-fastened and require two 2.5 inch long FastenMaster Trim Top™ Stainless Steel Coated Trim screws, two #10-12 x 2.5 inch long Hawk Fastener Corporation Square Drive Mushroom Head Composite Deck Screws or two 2.5 inch long GRK Fasteners Kameleon™ Composite Deck Screws at each support. Minimum edge- and end-distance for fasteners is 1 inch from both the edge and the end of each board.

5.2. Solid deck boards may be fastened using TigerClaw TC-3S hidden fasteners. Two fasteners are required at each support. The outer edge of the first and last deck boards shall be fastened to each joist with one 2.5 inch long FastenMaster Trim Top™ Stainless Steel Coated Trim Screw. See Figure 3.

5.3. Grooved deck boards may be fastened using TigerClaw TC-G hidden fasteners. Two fasteners are required at each support. The outer edge of the first and last deck boards shall be fastened to each joist with one 2.5 inch long FastenMaster Trim Top™ Stainless Steel Coated Trim Screw. See Figure 4.

5.4. Solid deck boards may be fastened using HIDfast HF3 hidden fasteners. One fastener is required at each support. See Figure 5. The outer edge of the first and last deck boards shall be fastened to each joist with one #8-9 TPI, 0.12 inch dia., 2.5 inch long stainless steel trim screw.

6.0 Supporting Evidence

6.1. Manufacturer's drawings and installation instructions.

6.2. Reports of testing demonstrating compliance with ICC-ES AC174, Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails), effective July 1, 2010 and ASTM D 7032-07, Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails).

6.3. Quality control manual in accordance with ICC-ES AC10, Acceptance Criteria for Quality Documentation, approved June 2011.

7.0 Conditions of Use

The *EnDeck*® deck board applications identified in this report are deemed to comply with the intent of the provisions of the referenced building codes subject to the following conditions:

7.1. *EnDeck*® deck boards identified in this report are limited to exterior use in Type V-B (5B) construction.

7.2. Deck boards placed at an angle other than 90 degrees to the supporting joist will require support framing at a reduced spacing such that the span of the deck board does not exceed 16 inches.

7.3. The wind uplift resistance rating recognized in this report is based on attachment to treated Southern Pine framing (specific gravity, $G=0.55$). Installation on wood framing with a lesser specific gravity may result in a lower wind uplift rating.

7.4. Where required by the building official, engineering calculations and details shall be provided. The calculations shall verify that the anchorage complies with the building code for the type of framing and condition of the supporting construction.

7.5. Compatibility of the supporting construction materials with all fasteners, metal post mount components, and other hardware components is subject to approval by the code official.

7.6. All products are manufactured in Jacksonville, Florida by Enduris Extrusions Inc. in accordance with the manufacturer's approved quality control system with inspections by Architectural Testing (IAS AA-676).

8.0 Identification

EnDeck® deck boards produced in accordance with this report shall be identified with labeling on the individual deck boards that includes the following information:

8.1. Name and/or trademark of the manufacturer and the manufacturer's address.

8.2. The statement "See ATI CCRR-0144 at www.ati-es.com for uses and performance levels."

8.3. If the statement in section 8.2 above is utilized without the Architectural Testing registered trademark, the bundle or packaging shall be labeled with all required information and shall include the Architectural Testing registered trademark.

9.3. Reference to the Architectural Testing internet web site address at www.ati-es.com is recommended to ascertain the current version and status of this report.

9.0 Code Compliance Research Report Use

9.1. Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

9.2. Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product or manufacturer by Architectural Testing.

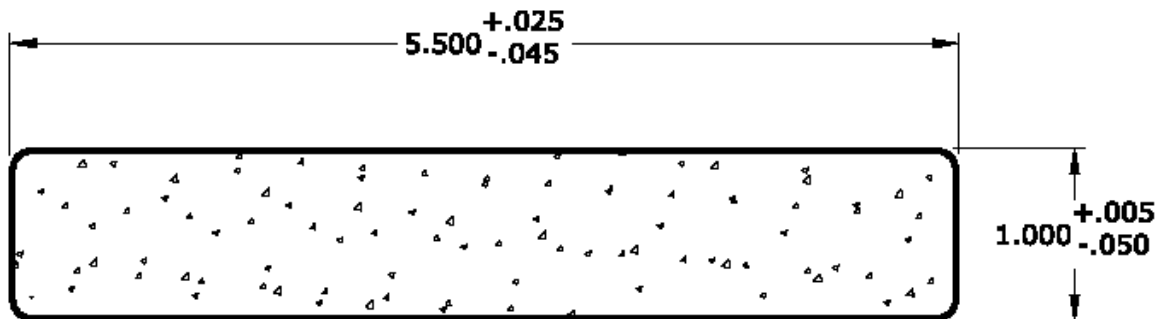


Figure 1 – *EnDeck*® Solid Deck Board

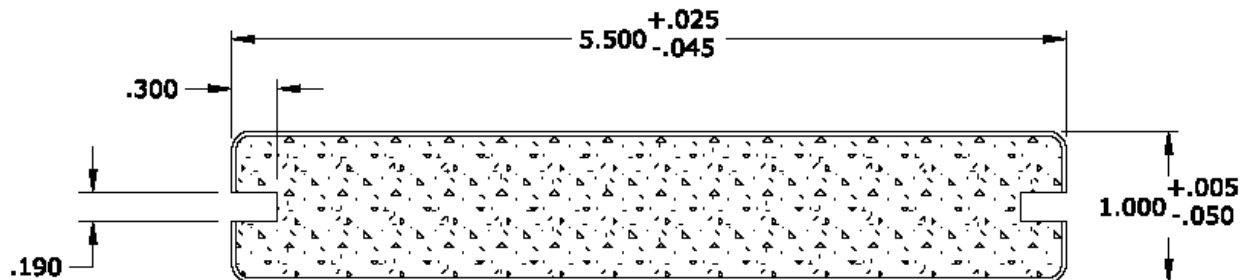


Figure 2 – *EnDeck*® Grooved Deck Board

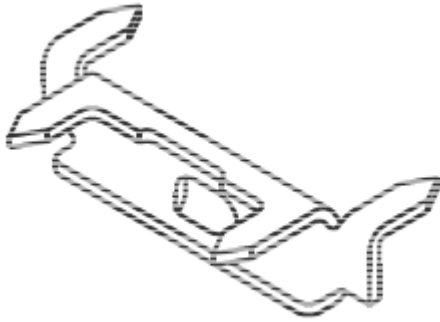


Figure 3 – TigerClaw TC-3S Fastener

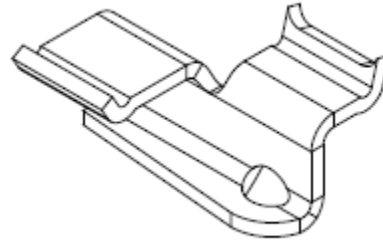


Figure 4 – TigerClaw TC-G Fastener

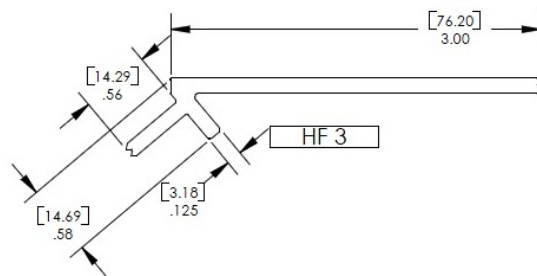
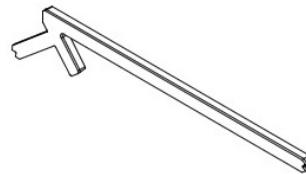


Figure 5 – HIDfast Fastener