

# ICC-ES Evaluation Report

**ESR-2834**

Issued June 1, 2009

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**DIVISION: 06—WOOD AND PLASTICS**  
**Section: 06500—Structural Plastics****REPORT HOLDER:****NEW GROUP ASIA**  
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[www.newtechwood.com](http://www.newtechwood.com)**EVALUATION SUBJECT:****NEWTECHWOOD B-7 SOLID AND NEWTECHWOOD  
BH-1 GROOVED COMPOSITE DECKING****ADDITIONAL LISTEE:****MEIXIN MANUFACTURING COMPANY LTD.**  
NGA INDUSTRIAL PARK  
DALING, HUIDONG, GUANGDONG  
PEOPLE'S REPUBLIC OF CHINA**1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

**Properties evaluated:**

- Structural
- Durability
- Surface-burning Characteristics

**2.0 USES**

The NewTechWood B-7 Solid and NewTechWood BH-1 Grooved composite decking described in this report are limited to exterior use as deck boards for balconies, porches, decks and stair treads of buildings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.

**3.0 DESCRIPTION****3.1 General:**

NewTechWood composite decking is a manufactured composite product consisting of rice hulls, high-density polyethylene (HDPE), and other processing additives. The deck boards are manufactured by an extrusion process and are available in beige, grey, brown, rose, red, walnut and mahogany colors. The NewTechWood B-7 Solid

decking is manufactured in 1-inch-thick-by-6-inch-wide (25.4 by 152 mm) nominal dimensions [actually 0.9 inch (22.9 mm) by 5.2 inches (132 mm)]. The NewTechWood BH-1 Grooved decking is manufactured in 1-inch-thick-by-6-inch-wide (25.4 by 152 mm) nominal dimensions [actually 0.98 inch (24.9 mm) by 5.47 inches (139 mm)]. Deck boards are manufactured in various lengths. See Figure 1 for typical cross-sectional profiles.

**3.2 Durability:**

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

**3.3 Surface-burning Characteristics:**

When tested in accordance with ASTM E 84, the deck board products have flame spread no greater than 200.

**4.0 DESIGN AND INSTALLATION****4.1 General:**

Installation of NewTechWood composite 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.

**4.2 Design:**

NewTechWood composite decking, when used as a deck board, will have an allowable capacity when installed at a maximum center-to-center spacing of the supporting construction as prescribed in Table 1.

**4.3 Installation:**

**4.3.1 Deck Boards:** The NewTechWood B-7 Solid decking and NewTechWood BH-1 Grooved decking must be installed perpendicular to the supports with two No.10 by 2<sup>1</sup>/<sub>2</sub>-inch-long (63.5 mm) corrosion-resistant screws per support. The fasteners must be placed through the solid part of the deckboard and into the supporting construction, and not through the grooved edges, at a minimum distance of 1 inch (25.4 mm) from the edge of the deck board. Fasteners must be placed a minimum of 1 inch (25.4 mm) from the end of each board, and a minimum <sup>1</sup>/<sub>16</sub>-inch (1.6 mm) gap must be left between ends of boards at butt

joints. Multiple joists or blocking must be used to provide adequate surface for fastener embedment of board ends. Fasteners located within 1½ inches (38 mm) of board ends must be predrilled. A minimum 1/16-inch (1.6 mm) gap must be left between deck boards.

**4.3.2 Deck Boards Used as Stair Treads:** The NewTechWood decking, when used as a stair tread, is satisfactory to resist the code-prescribed concentrated load of 300 lbf (1.33 kN) when installed at a maximum center-to-center spacing of the supporting construction as shown in Table 2.

## 5.0 CONDITIONS OF USE

The NewTechWood composite deckings 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 planks are limited to exterior use as deck boards for balconies, porches, decks and stair treads of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.
- 5.2 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. Only those fasteners and fastener configurations described in this report have been evaluated for the installation of the NewTechWood composite decking. When the manufacturer's published installation instructions differ from this report, this report governs.
- 5.3 The use of deck boards as a component of a fire-resistance-rated assembly is outside the scope of this report.
- 5.4 The compatibility of the fasteners, metal post mount components and other metal hardware with the supporting construction, including chemically treated wood, is outside the scope of this report.

5.5 Adjustment factors outlined in the AF&PA *National Design Standard* and applicable codes must not be applied to the allowable capacity and maximum spans for NewTechWood composite decking.

5.6 The NewTechWood composite decking 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 The NewTechWood composite decking is produced in Hui Dong (Guangdong Province), China, under a quality control program with inspections by Intertek Testing Services NA, Inc. (AA-690).

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated February 2007.

## 7.0 IDENTIFICATION

The NewTechWood composite decking described in this report is identified by a stamp on each individual piece, or on the packaging, bearing the manufacturer's name (New Group Asia or Meixin Manufacturing Company Ltd.), the product name (NewTechWood B-7 Solid or NewTechWood BH-1 Grooved decking), the name of the inspection agency (Intertek Testing Services NA, Inc) and the ICC-ES evaluation report number (ESR-2834)

**TABLE 1—DECK BOARD SPAN RATINGS<sup>3</sup>**

PRODUCT NAME	MAXIMUM SPAN (inches) <sup>1</sup>	ALLOWABLE LIVE LOAD CAPACITY (lbf/ft <sup>2</sup> ) <sup>2</sup>
NewTechWood B-7 Solid	20	100
NewTechWood BH-1 Grooved	20	100

For **SI**: 1 inch = 25.4 mm; 1 lbf/ft<sup>2</sup> = 47.9 Pa.

<sup>1</sup>Maximum span is measured center-to-center of the supporting construction.

<sup>2</sup>Maximum allowable capacity has been adjusted for durability. No further increases are permitted.

<sup>3</sup>Based on a minimum two-span installation.

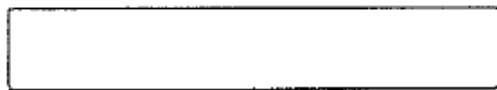
**TABLE 2—MAXIMUM STAIR TREAD SPANS<sup>2</sup>**

PRODUCT NAME	MAXIMUM SPAN (inches) <sup>1</sup>
NewTechWood B-7 SOLID	10
NewTechWood BH-1 GROOVED	10

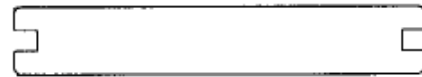
For **SI**: 1 inch = 25.4 mm; 1 lbf/ft<sup>2</sup> = 47.9 Pa.

<sup>1</sup>Maximum span is measured center-to-center of the supporting construction.

<sup>2</sup>Based on a minimum 2-span installation.



**B-7 SOLID**



**BH-1 GROOVED**

**FIGURE 1—DECK BOARD PROFILES**