

# ICC-ES Evaluation Report

**ESR-1603**

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**DIVISION: 06—WOOD AND PLASTICS**  
**Section: 06500—Structural Plastics****REPORT HOLDER:****MILLENNIUM DECKING, INC.**  
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[john@mdecking.com](mailto:john@mdecking.com)**EVALUATION SUBJECT:****MILLENNIUM DECKING SYSTEM****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 Millennium Decking System is limited to use as deckboards for exterior balconies, porches, stair treads and decks of Group R Occupancy (residential) buildings of Type V-B (IBC) construction or buildings constructed in accordance with the IRC.

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

The Millennium Decking System is a hollow composite (recycled PVC and wood fiber) plank. Each plank is mono-extruded, and is 1 inch (25.4 mm) thick by 6.6 inches (167.6 mm) wide. The actual exposed walking surface per plank is 6 inches (152.4 mm) wide. The plank is configured with a concealed groove on one side and a ledge on the other to fit into the groove on the other side. See Figure 1. The planks are manufactured in three colors: mocha, grey and sandalwood.

**3.2 Durability:**

When subjected to weathering, insect attack and other decaying elements, Millennium Decking System material is

equivalent in durability to preservative-treated or naturally durable lumber. Accordingly, it is permitted to be used as an alternative to preservative-treated or naturally durable lumber on exterior decks, porches, balconies and stair treads. The Millennium Decking System has 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 E 84, the Millennium Decking System has a flame-spread index of no greater than 200.

**4.0 INSTALLATION****4.1 General:**

The Millennium Decking System must be installed in accordance with the manufacturer's published installation instructions, subject to the conditions of use in this report. A copy of the manufacturer's published installation instructions must be available on the jobsite at all times during installation.

**4.2 Deck Boards:**

The Millennium Decking System must be limited to the maximum allowable uniform loads indicated in Table 1. The Millennium Decking System must be installed perpendicular to the supporting construction, which is limited to a maximum spacing as prescribed in Table 1. Additionally, Millennium Decking Systems can be installed at a 45-degree diagonal to the supporting construction, which must be limited to a maximum spacing of 12 inches on center. The Millennium Decking System must be spaced with a minimum  $\frac{1}{16}$ -inch (1.6 mm) gap at each end for every 16 feet (4879 mm) of board length for every 20°F (11.1°C) of temperature difference between the temperature at the time of installation and the maximum expected temperature. The ends of each deck board must be supported by a full nominal 2-by framing member; blocking must be used to achieve this support condition at deck board butt-joints.

**4.3 Deck Boards Used as Stair Treads:**

The Millennium Decking System, when used as stair treads, is sufficient 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 and the leading edge is supported with a 2-by-6 riser as indicated in Table 2. See Figure 2 for installation schematics.

**4.4 Fasteners:**

The Millennium Decking System must be fastened with one No. 8 by 2-inch- to 2<sup>1</sup>/<sub>2</sub>-inch-long (51 mm to 64 mm) wood screw at each supporting solid sawn wood member. Stair treads must be fastened along the riser with the same wood screw as the deck boards. The minimum end distance for fasteners is 1 inch (25.4 mm). Within 2 inches (51 mm) of the board end, No. 8 by 3-inch-long (76 mm) wood screws must be installed through predrilled holes.

**5.0 CONDITIONS OF USE**

The Millennium Decking System 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 This product is limited to exterior use as a deck board for balconies, porches, decks and stair treads and similar appendages of Group R Occupancy buildings of Type V-B (IBC) construction and structures constructed in accordance with the IRC.
- 5.2 Installation must comply with this report, the manufacturer’s published instructions and the applicable code. When the manufacturer’s published installation instructions differ from this report, this report governs.
- 5.3 The use of the Millennium Decking System as a component of a fire-resistance-rated assembly is outside the scope of this report.
- 5.4 The compatibility of the fasteners with the supporting construction, including chemically treated wood, is outside the scope of this report.

5.5 The Millennium Decking System 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.

5.6 The Millennium Decking System is produced in Nisku, Alberta, Canada, under a quality control program with inspections by Intertek Testing Services NA Ltd (AA-688).

**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 February 2007 (editorially revised April 2008).

**7.0 IDENTIFICATION**

Each deck board described in this report must be identified by a label bearing the Millennium Decking, Inc., name and address, the Millennium Decking System name, the name of the inspection agency (ITS) and the evaluation report number (ESR-1603).

**TABLE 1— DECK BOARD SPAN RATING**

PRODUCT NAME	MAXIMUM SPAN <sup>1</sup>	ALLOWABLE CAPACITY <sup>2</sup> (lbf/ft <sup>2</sup> )
Millennium Decking System	16	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 is adjusted for durability. No further increases are permitted.

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

DECK BOARDS USED AS STAIR TREADS	MAXIMUM SPAN (in.) <sup>1</sup>
Millennium Decking Board (with riser)	12

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.

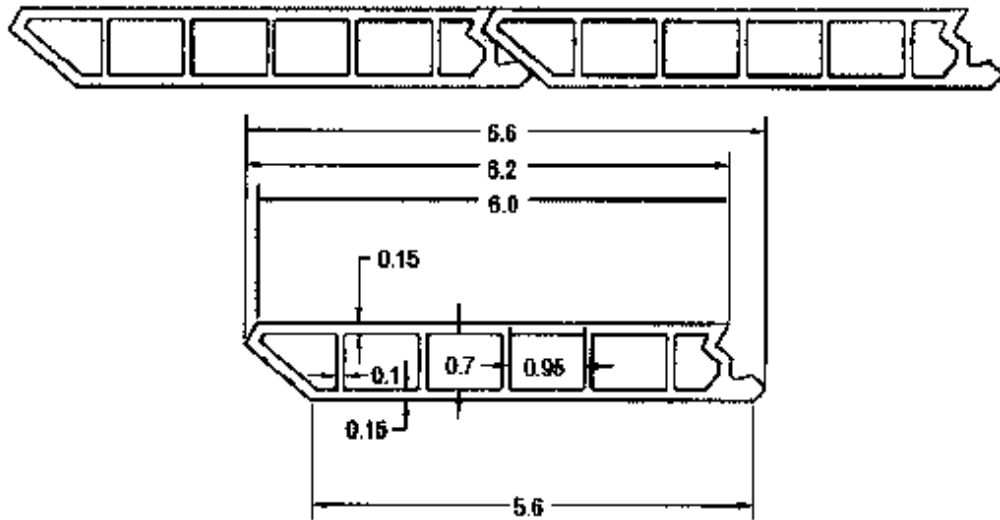


FIGURE 1—DECK BOARD DETAIL

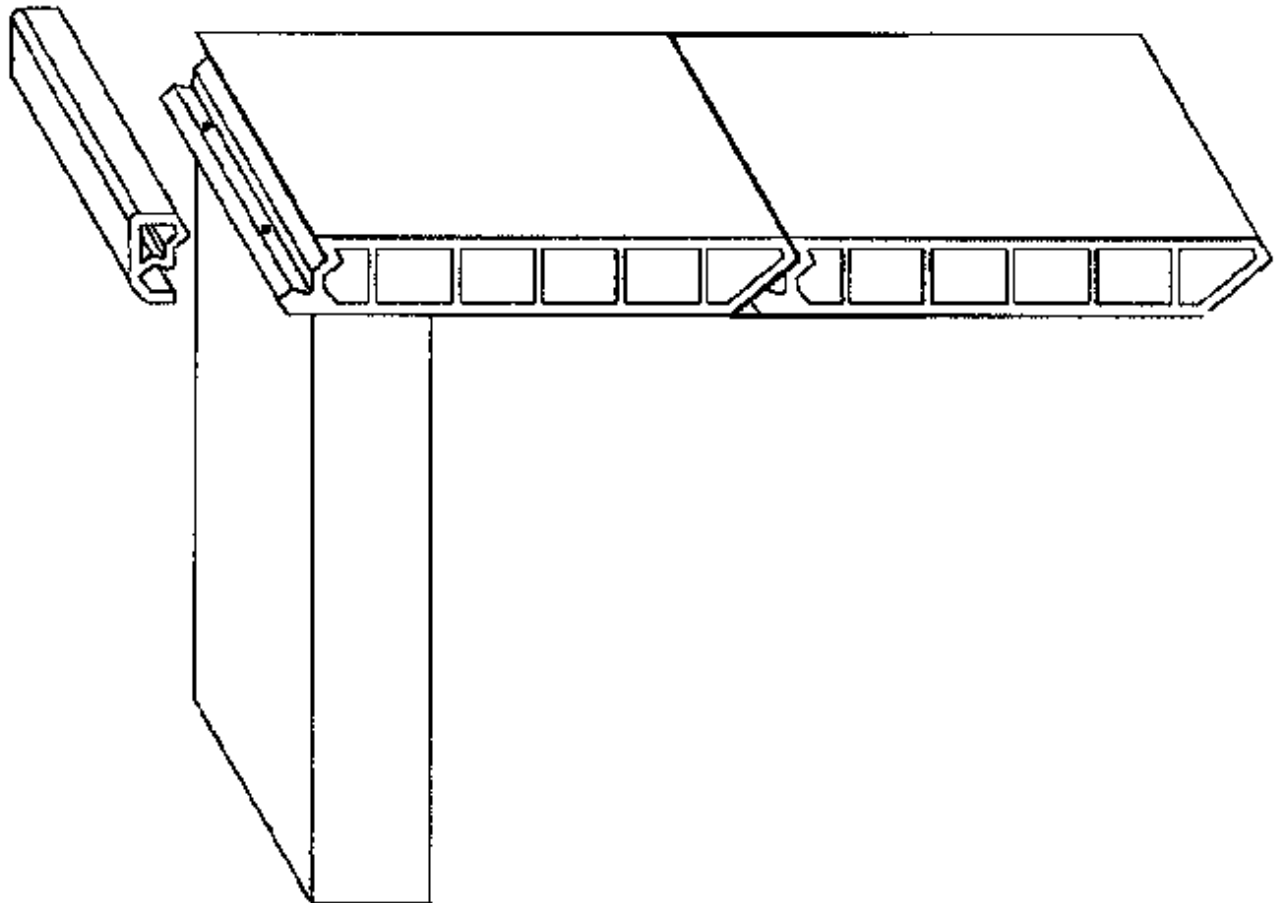


FIGURE 2—STAIR TREAD WITH RISER