

# ICC-ES Evaluation Report

**ESR-1785**

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This report is subject to re-examination in one year.

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**DIVISION: 06—WOOD AND PLASTICS**  
**Section: 06160—Sheathing****REPORT HOLDER:****HUBER ENGINEERED WOODS, LLC**  
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[www.huberwood.com](http://www.huberwood.com)**EVALUATION SUBJECT:****ADVANTECH® (AT-SERIES) ENGINEERED PANELS****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- 1997 *Uniform Building Code*™ (UBC)

**Property evaluated:**

Structural

**2.0 USES**

The AdvanTech® (AT-Series) FLOOR SPAN® and SHEATHING SPAN® wood structural panels described in this evaluation report are Exposure 1 oriented strand board (OSB) products designed and manufactured for prescriptive and engineered applications.

**3.0 DESCRIPTION**

AdvanTech (AT-Series) FLOOR SPAN® and SHEATHING SPAN® are oriented strand board (OSB) panels manufactured with strands from a single wood species or a combination of wood species blended with an exterior-type adhesive system. The panels are typically produced in 4-by-8-foot (1219 by 2438 mm) sheets. Oversize panels, wider than 4 feet (1219 mm) or longer than 8 feet (2438 mm), or both, are also produced. Table 1 specifies the span ratings, grades, and thicknesses of AdvanTech panels recognized in this evaluation report.

AdvanTech panels are manufactured to comply with proprietary property requirements and with performance

requirements specified in U.S. Voluntary Product Standard PS-2 (UBC Standard 23-3), as outlined in the approved quality control manual.

**4.0 DESIGN AND INSTALLATION****4.1 Design:**

Design capacities provided in this evaluation report supplement the design provisions applicable to wood structural panels provided in Chapter 23 of the IBC and UBC. Table 2 provides design capacities for AdvanTech panels. Table 3 provides section properties for AdvanTech panels. Table 4 provides equivalent specific gravities for use in withdrawal and lateral design of nails under Part 11 of the NDS (*National Design Specification for Wood Construction*) for compliance with the IBC and IRC, or Section 2318 of the UBC, as applicable.

**4.2 Installation:**

AdvanTech FLOOR SPAN® and SHEATHING SPAN® panels must be installed in accordance with the applicable code and the manufacturer's published installation instructions.

Continuous floor areas must not exceed 80 feet (24.38 m) in length or width, unless separated by 3/4-inch-wide (19.1 mm) expansion joints having separate floor framing. Supporting wall plates must not be continuous over the 3/4-inch-wide (19.1 mm) expansion joints.

**5.0 CONDITIONS OF USE**

The AdvanTech® (AT-Series) Engineered Panels 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** The panels are installed in accordance with the applicable building code and the manufacturer's published installation instructions.

**5.2** The panels are manufactured in Broken Bow, Oklahoma; Easton, Maine; Commerce, Georgia; Crystal Hill, Virginia; and Spring City, Tennessee; under a quality control program with inspections conducted by Timberco Inc.—dba TECO Corporation (AA-654).

**6.0 EVIDENCE SUBMITTED**

Data in accordance with the ICC-ES Acceptance Criteria for Wood Structural Panel Products (AC182), dated April 2001, editorially revised November 2009.

**7.0 IDENTIFICATION**

Each AdvanTech panel has at least one grade stamp for product and field identification. The grade stamp includes the trademark of the Huber Corporation; the AdvanTech® trademark; the AT-Series; the name or logo of the inspection agency (TECO TESTED); the panel

span rating and thickness; exposure durability classification (Exposure 1); panel grade (Structural I SHEATHING SPAN® or FLOOR SPAN®); product standard (PS-2); mill number; and the ICC-ES evaluation report number (ESR-1785). Refer to Figure 1 for a typical grade stamp.

**TABLE 1—SPAN RATINGS, GRADES AND THICKNESSES OF ADVANTECH PANELS**

SPAN RATING	AT-Series	TECO GRADE <sup>1</sup>	NOMINAL PANEL THICKNESS
32/16	AT 1.10	Structural I SHEATHING SPAN®	1/2 inch
40/20	AT 1.10	Structural I SHEATHING SPAN®	5/8 inch
24 o.c.	AT 1.05	FLOOR SPAN®	23/32 inch

For SI: 1 inch = 25.4 mm.

<sup>1</sup>SHEATHING SPAN® and FLOOR SPAN® are registered trademarks of TECO.

**TABLE 2—ADVANTECH PANEL DESIGN CAPACITIES<sup>1</sup>**

SPAN RATING	NOMINAL THICKNESS (in.)	AT-SERIES	STRENGTH AXIS <sup>2</sup>	BENDING STIFFNESS, EI (lbf-in <sup>2</sup> /ft)	BENDING STRENGTH, F <sub>b</sub> S (lbf-in/ft)	PLANAR SHEAR, F <sub>v</sub> (lb/Q) (lbf/ft)	AXIAL COMPRESSION, F <sub>c</sub> A (lbf/ft)	AXIAL STIFFNESS, EA (lbf/ft)
32/16	1/2	AT 1.10	Primary	133,750	665	280	5,700	4,170,000
			Secondary	58,000	400	280	4,500	2,850,000
40/20	5/8	AT 1.10	Primary	256,000	1,035	350	7,125	5,100,000
			Secondary	114,000	625	350	5,625	3,375,000
24 o.c.	23/32	AT 1.05	Primary	383,800	1,250	365	6,500	5,750,000
			Secondary	155,000	710	365	5,750	4,150,000

For SI: 1 inch = 25.4 mm, 1 lbf-in<sup>2</sup>/ft = 9.415 kN-m<sup>2</sup>/m, 1 lbf-in/ft = 0.371 N-m/m, 1 lbf/ft = 14.59 N/m.

<sup>1</sup> Design capacity is a single value that represents the product of the allowable stress and the corresponding section property per 1-foot width of panel for a given load condition.

<sup>2</sup> Primary strength axis corresponds to the panel length dimension and the secondary direction to the panel width dimension. If an AdvanTech panel is manufactured with the primary direction aligned in the narrow dimension, the primary direction will be stamped on the panel.

**TABLE 3—SECTION PROPERTIES FOR ADVANTECH PANELS<sup>1</sup>**

SPAN RATING	NOMINAL THICKNESS (in.)		PANEL WEIGHT (psf)	AREA, A (in <sup>2</sup> /ft)	MOMENT OF INERTIA, I (in <sup>4</sup> /ft)	SECTION MODULUS, S (in <sup>3</sup> /ft)	STATICAL MOMENT, Q (in <sup>4</sup> /ft)	SHEAR CONSTANT, lb/Q (in <sup>2</sup> /ft)
	Fraction	Average						
32/16	1/2	0.500	1.9	6.000	0.125	0.500	0.375	4.000
40/20	5/8	0.625	2.0	7.500	0.244	0.781	0.586	5.000
24 o.c.	23/32	0.715	2.4	8.580	0.366	1.022	0.767	5.720

For SI: 1 inch = 25.4 mm, 1 in<sup>2</sup>/ft = 2117 mm<sup>2</sup>/m, 1 in<sup>3</sup>/ft = 53 763 mm<sup>3</sup>/m, 1 in<sup>4</sup>/ft = 1 365 589 mm<sup>4</sup>/m.

<sup>1</sup> Based on a rectangular cross-sectional width of one foot.

**TABLE 4—EQUIVALENT SPECIFIC GRAVITY VALUES FOR ADVANTECH PANELS<sup>1,2</sup>**

SPAN RATING	NOMINAL THICKNESS (inch)	AT-Series	NAIL RESISTANCE	
			Lateral	Withdrawal
			Equivalent Specific Gravity	
32/16	1/2	AT 1.10	0.44	0.43
40/20	5/8	AT 1.10	0.44	0.43
24 o.c.	23/32	AT 1.05	0.50	0.44

For SI: 1 inch = 25.4 mm.

<sup>1</sup> Equivalent specific gravity values are provided for use in design of nailed connections (lateral and withdrawal) in accordance with Section 11 of the NDS (National Design Specification for Wood Construction) for IBC and IRC compliance; or with Section 2318 of the UBC, as applicable.

<sup>2</sup> In cases where strand delamination occurs on the opposite face of the panel, the assumed nail embedment length, or penetration depth, must be reduced accordingly for the design of connections in which the nails are loaded laterally. The effect of strand delamination is reflected in the tabulated equivalent specific gravity values for withdrawal.



FIGURE 1—TYPICAL PANEL GRADE STAMP