



ICBO Evaluation Service, Inc.

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EVALUATION REPORT

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ER-4488

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Filing Category: WALL COVERING (288)

THERMO-SHEATH SHEATHING

NATIONAL SHELTER PRODUCTS, INC.
22526 S.E. 64TH PLACE, SUITE 230
ISSAQUAH, WASHINGTON 98027

1.0 SUBJECT

Thermo-Sheath Sheathing.

2.0 DESCRIPTION

2.1 General:

Thermo-Sheath sheathing, a laminated board consisting of a kraft-paper core with aluminized facings, is recognized as a bracing material and weather-resistive barrier for wood-framed wall construction and as an underlayment for concrete roof tiles. The sheathing has a nominal size of either 48³/₄ by 96 inches (1238 by 2438 mm) or 48 by 96 inches (1219 by 2438 mm). Four sheathings are recognized:

1. Thermo-Sheath Standard, nominal 0.078 inch (2 mm) thick, green print identification.
2. Thermo-Sheath Structural, nominal 0.105 inch (2.7 mm) thick, red print identification.
3. Thermo-Sheath Structural Plus, nominal 0.115 inch (2.9 mm) thick, black print identification.
4. Thermo-Sheath Super Structural, nominal 0.137 inch (3.5 mm) thick, blue print identification.

2.2 Materials:

2.2.1 Core: The core consists of multiple layers of filler and paperboard adhered with a polyvinyl alcohol adhesive.

2.2.2 Facings: The facing materials consist of either aluminum foil or aluminized polyethylene adhered to 40-pound (18 kg) kraft paper.

2.3 Installation:

2.3.1 Walls: Sheathing, having a nominal thickness of 0.105, 0.115, and 0.137 inch (2.7, 2.9 and 3.5 mm), complies as bracing for wood-framed construction in accordance with Section 2320.11.3 of the code when installed vertically on wood framing. The 0.078-inch-thick (2 mm) sheathing is restricted to nonstructural applications. The sheathing edges are supported by studs, top and bottom plates and solid blocking. Table 1 provides installation details for sheathing used structurally, including fastener details, stud spacing and allowable shear values.

Nonstructural applications of the sheathing require that wood-framed walls be braced in accordance with Section 2320.11.3 of the code. Fasteners shall be stainless steel, aluminized, hot-dipped galvanized or electrogalvanized steel. Table 1 lists the fastener schedule for structural applications. Nonstructural sheathing applications require similar fasten-

ers with maximum spacing of 4 inches (102 mm) on center at panel edges and 8 inches (204 mm) on center at intermediate supports.

Panel edges are butt joints or are lapped a minimum of ³/₄ inch (19 mm).

2.3.2 Underlayment: Sheathing having a nominal thickness of 0.078 inch (2 mm) complies as an underlayment for concrete and clay roof tiles specifically recognized in an NES or ICBO ES evaluation report. The tile report holder must approve this use. The Thermo-Sheath product is installed under the spaced sheathing and is fastened 12 inches (305 mm) on center along each rafter with 1-inch-long (25.4 mm) galvanized roofing nails or No. 16 gage galvanized staples having 1-inch-long (25.4 mm) legs and ³/₈-inch-wide (9.5 mm) crowns. The sheathing installation requires a minimum 2-inch (51 mm) horizontal lap.

Reroofing applications require that the sheathing be applied over the existing spaced sheathing boards and be fastened to the rafters as previously described.

2.4 Identification:

Each sheet bears a stamped label indicating the company name, National Shelter Products, Inc.; the product name; the board thickness; the evaluation report number (ER-4488); and the name of the quality control agency, Ramtech Laboratories, Inc. The labels are color-coded to facilitate easier product identification in the field. See Table 1.

3.0 EVIDENCE SUBMITTED

Reports on racking shear, transverse strength, tensile strength, mullen-burst strength, water absorption, moisture vapor transmission, and linear expansion tests, and a quality control manual.

4.0 FINDINGS

That the Thermo-Sheath Sheathing described in this report complies with the 1997 *Uniform Building Code*[™], subject to the following conditions:

- 4.1 Installation complies with this report and the manufacturer's instructions.
- 4.2 An approved exterior wall covering, capable of resisting loads perpendicular to the face of the wall, is installed over the sheathing.
- 4.3 When sheathing is installed as an approved weather-resistive barrier, the sheathing joints have minimum ³/₄-inch (19 mm) laps or approved flashing.
- 4.4 The 0.105-, 0.115-, and 0.137-inch-thick (2.7, 2.9 and 3.5 mm) sheathing complies as bracing as specified in Section 2320.11.3 of the code when installed in accordance with Table 1.

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4.5 The 0.078-inch-thick (2 mm) sheathing is permitted to be an underlayment for concrete and clay roof tiles specifically recognized in an evaluation report.

4.6 The sheathing is manufactured for National Shelter

Products, Inc., in Constantine, Michigan, with quality control inspections by Ramtech Laboratories, Inc. (AA-655).

This report is subject to re-examination in two years.

TABLE 1—ALLOWABLE SHEAR LOAD (PLF)^{1,2,3}

THERMO-SHEATH PRODUCT NAME	PRODUCT IDENTIFICATION COLOR	SHEATHING THICKNESS (inch)	FASTENER	FASTENER SPACING (inches on center)	WOOD STUD SPACING (inches on center)	ALLOWABLE SHEAR LOAD (lbs. per foot)
Structural Sheathing	Red	0.105	No. 11 ga. galv. roofing nails or No. 16 ga. x $\frac{7}{16}$ -inch-crown staples. Minimum fastener length is $1\frac{1}{4}$ inches	3 — panel edges 6 — intermediate supports	16	130
Structural Plus Sheathing	Black	0.115	No. 11 ga. galv. roofing nails or No. 16 ga. x $\frac{7}{16}$ -inch-crown staples. Minimum fastener length is $1\frac{1}{4}$ inches	3 — panel edges 6 — intermediate supports	16	150
			No. 16 ga. x 1-inch-crown staples. Minimum fastener length is $1\frac{1}{4}$ inches	2 — panel edges 6 — intermediate supports	16	180
Super Structural Sheathing	Blue	0.137	No. 11 ga. galv. roofing nails or No. 16 ga. x $\frac{7}{16}$ -inch-crown staples. Minimum fastener length is $1\frac{1}{4}$ inches	3 — panel edges 3 — intermediate supports	24	185

For **SI**: 1 inch = 25.4 mm, 1 lb/ft = 14.6 kN/m.

¹For wind or seismic forces, in pounds per foot, for panels installed vertically on Douglas fir-larch or southern pine studs having a nominal thickness not less than 2 inches (51 mm).

²Staple crown must not puncture the sheathing. Staples are installed with the crown parallel to the framing.

³The sheathing is applied in minimum 4-by-8-foot (1.2 by 2.4 m) sheets. Blocking having a nominal thickness not less than 2 inches (51 mm) is provided at horizontal joints when the wall height exceeds the length of the sheathing panel. The maximum height-to-width ratio is 2:1.