



ICC Evaluation Service, Inc.
www.icc-es.org

Business/Regional Office ■ 5360 Workman Mill Road, Whittier, California 90601 ■ (562) 699-0543
Regional Office ■ 900 Montclair Road, Suite A, Birmingham, Alabama 35213 ■ (205) 599-9800
Regional Office ■ 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 ■ (708) 799-2305

Legacy report on the 1997 *Uniform Building Code*™

DIVISION: 06—WOOD AND PLASTICS
Section: 06121—Shear Wall Panels

SURE-BOARD SERIES 200W STRUCTURAL PANELS

INTERMAT
2045 PLACENTIA AVENUE
COSTA MESA, CALIFORNIA 92627

1.0 SUBJECT

Sure-Board Series 200W Structural Panels.

2.0 DESCRIPTION

2.1 General:

Sure-Board Series 200W Structural Panels are panels attached to wood framing for shear wall applications as an alternative to shear walls described in Section 2315 of the 1997 *Uniform Building Code*™ (UBC). The panels are limited to applications where there is no direct exposure to weather or damp environments.

2.2 Materials:

2.2.1 Sure-Board Series 200W Structural Panels: Sure-Board Series 200W Structural Panels consist of $\frac{1}{8}$ -inch-thick (3.2 mm), medium-density fiberboard (MDF), square-edged panels complying with ANSI A208.2, laminated with a water-soluble adhesive to sheet steel. The sheet steel is No. 22 gage [27 mils (0.027 inch) (0.686 mm) base-metal thickness] complying with ASTM A 653 SS Grade 33, with a minimum G40 hot-dipped galvanized coating conforming to ASTM A 924. The panels are available in widths of 48 inches (1,219 mm) and lengths of 8, 9, 10 and 12 feet (2,428 mm, 2,743 mm, 3,048 and 3,658 mm).

2.2.2 Fasteners: The fasteners used for attaching the Sure-Board Series 200W Structural Panels to wood framing are full round head, 10d ring shank (RS) nails complying with ASTM F 1667-01, with a minimum bending yield strength of 90,000 psi (620 MPa).

2.2.3 Wood Framing: Framing members must be Douglas fir (D.F.) or equal with a minimum specific gravity (S.G.) of 0.50, conforming with Chapter 23 of the UBC. Framing members for shear walls shall be minimum nominal 2-by-4, No. 2 grade D.F. or equal. End posts for shear walls shall be minimum 4-by-4, No. 1 grade D.F. or equal. Sill plates and top plates for shear walls shall be minimum 2-by-4, standard D.F. or equal.

2.2.4 Compression Plate (CP): The use of the compression plate is optional per Table 1. The compression

plate consists of a $1\frac{5}{8}$ -inch-diameter-by- $1\frac{1}{2}$ -inch-long (41.3 mm by 38 mm) Schedule 80 pipe complying with ASTM A 53 tack-welded, with Type E60 Electrodes complying with American Welding Society D1.1 specifications, to a minimum $3\frac{1}{2}$ -inch-square, $\frac{1}{4}$ -inch-thick (6.4 mm) steel plate complying with ASTM A 36.

2.3 Shear Wall Design:

Table 1 shows nominal shear values for wind or earthquake forces and corresponding deflections at the nominal loads for shear walls using the Sure-Board Series 200W Structural Panels attached to wood studs. Nominal shear values shall be multiplied by the appropriate strength reduction factor to determine the load and resistance factor design strength; or divided by the appropriate safety factor to determine allowable shear values in accordance with Footnote 5 to Table 1. Corresponding deflections are derived by reducing the tabulated deflection by the proportion of the design load to the nominal load. Adjustment factors that will increase shear resistance are not permitted. The maximum shear-wall height-to-width ratio is $2\frac{1}{4}$:1. Deflection analysis must be in accordance with Section 2315.1 of the UBC.

Design of shear wall connections, such as uplift hold-downs, shear-wall-to-base anchorage, and shear transfer from horizontal elements, and framing for loading other than in-plane shear, are beyond the scope of this report. The connection design shall comply with the UBC and be sized to exceed the shear resistance load capacity of the shear wall.

Wood framing design for out-of-plane and axial loads shall comply with the UBC. For installation in Seismic Zones 3 and 4, additional requirements in Section 2315.5.2 of the UBC apply.

Except where deletion is permitted by Table 1, the compression plates are attached to the bottom of end posts using two 16d common nails through the holes in the plate.

2.4 Installation:

Installation must be in accordance with this report and Intermat's published installation instructions. Sure-Board Series 200W Structural Panels are placed with the long dimension parallel to stud framing. The steel face of the panels must be in contact with the framing. All panel edges must be fully blocked by solid framing members. Maximum stud spacing is 16 inches (406 mm) on center. No holes or notches are permitted in the framing members or Sure-Board Panels. Nail heads must be located a minimum of $\frac{3}{8}$ inch (9.5 mm) from panel edges. Nail heads may be flush with the surface of MDF to accommodate application of finish material. Adjacent panels must be placed with a $\frac{1}{16}$ -inch (1.6 mm) gap.

ICC-ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



2.5 Identification:

The Sure-Board Series 200W Structural Panels are identified by a label located on the top right- and bottom left-hand corners of the metal facing. The label notes the Intermat company name, the product name and the evaluation report number (ER-6151).

3.0 EVIDENCE SUBMITTED

Reports of cyclic in-plane shear tests, installation instructions, and a quality control manual.

4.0 FINDINGS

That the Sure-Board Series 200W Structural Panels described in this report comply with the 1997 *Uniform Building Code*TM (UBC), subject to the following conditions:

4.1 Panels are manufactured, identified and installed in accordance with the UBC and this report.

4.2 Nominal shear values for shear walls are limited to the values noted in Table 1. To determine the allowable shear values or the load and resistance factor design strength values, the appropriate safety factor or strength reduction factor, described in the footnotes of Table 1, must be applied.

4.3 Plans and calculations demonstrating compliance with the UBC and this report are submitted to the building official for approval.

4.4 Applied loads are adjusted in accordance with Section 1612.3 of the UBC. Calculations shall demonstrate, in addition to other requirements as stipulated by the building official, that the applied loads are less than the design loads described in the UBC and this report.

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

TABLE 1—NOMINAL RACKING SHEAR RESISTANCE TO WIND OR EARTHQUAKE FORCES AND LATERAL DEFLECTION (inches) FOR SHEAR WALLS WITH SURE-BOARD SERIES 200W STRUCTURAL PANELS ATTACHED TO D.F. STUDS WITH 10d RS NAILS¹

FRAMING	10d RS NAIL MAXIMUM SPACING AT PANEL EDGES AND FIELD, INCHES ON CENTER ^{2,3}					
	4/6		2/6		2/6 NCP ⁶	
	Nominal Shear Resistance ^{4,5} (plf)	Lateral Deflection (inches)	Nominal Shear Resistance ^{4,5} (plf)	Lateral Deflection (inches)	Nominal Shear Resistance ^{4,5} (plf)	Lateral Deflection (inches)
Stud: 2-by-4, No. 2 D.F. End post: 4-by-4, No.1 D.F. Sill and top plate: 2-by-4 standard D.F.	1,453	1.74	1,890	1.34	1,970	2.33

For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N.

¹These values are only for short-term loads due to wind or earthquake. No increase for duration of load is allowed.

²The nails are described in Section 2.2.2, and are installed in accordance with Section 2.4.

³All panel edges must be blocked. Panels are installed vertically.

⁴Tabulated values are for panels applied to one side of a wall. Increases in values for panels attached to both sides of a wall are not within the scope of this report.

⁵For allowable stress design (ASD) loads, the tabulated load values must be divided by the safety factor of 3.0. For load and resistance factor design (LRFD), the tabulated resistance values must be multiplied by 0.55.

⁶NCP represents values without compression plates installed.