DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	Series and Series Number: MATERIALS RELEASE NO: 1348
TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs	ISSUE DATE 11/29/2023
	REVIEW DATE 11/29/2026

SUBJECT: **1. Product** OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation

2. Name and address of Manufacturer

Ox Engineered Products, LLC
700 Centreville Road
Constantine, MI 49042

USE: Wall sheathing and insulation.

DESCRIPTION:

OX-IS®, OX-IS® HS, and SI-Strong are structural, rigid insulating sheathing products consisting of a proprietary fibrous sheathing board laminated to one side of a proprietary rigid foam plastic insulation. The proprietary fibrous sheathing is made of specially treated plies that are pressure-laminated with a water-resistant adhesive. The rigid foam plastic insulation is proprietary polyisocyanurate, which can have facings on one or both sides.

OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation have in a standard product width of 48". They are all available in thicknesses of 0.5" up to 1 5/8" and standard lengths of 96", 108", and 120".

REQUIREMENTS:

OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation shall be manufactured in compliance with the following requirements:

APPLICABLE CODES AND STANDARDS

Codes

IBC—12, 15, 18: International Building Code®
IRC—12, 15, 18: International Residential Code®
IECC—12, 15, 18: International Energy Conservation Code®
FBC-B—17, 20: Florida Building Code – Building (FL 16410) FBC-R—17, 20: Florida Building Code – Residential (FL 16410) CBC—16, 19: California Building Code

Standards and Referenced Documents

ANSI/AWC SDPWS:	Special Design Provisions for Wind and Seismic
ASCE/SEI 7:	Minimum Design Loads and Associated Criteria for Buildings and Other Structures
ASTM C518:	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
ASTM D7989:	Standard Practice for Demonstrating Equivalent In-Plane Lateral Seismic Performance to Wood-Frame Shear Walls Sheathed with Wood Structural Panels
ASTM E2126:	Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings
ASTM E2178:	Standard Test Method for Air Permeance of Building Materials
ASTM E330:	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E331:	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E564:	Standard Practice for Static Load Test for Shear Resistance of Framed Walls for Buildings
ASTM E72:	Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
ASTM E84:	Standard Test Method for Surface Burning Characteristics of Building Materials
NFPA 286:	Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

Table 1 Physical Properties

ASTM Method	D1621	C203	C209	E96	D2126[1]			E842[2]	
Property	Minimum Comprised Strength, PSI	Flexible Strength, PSI	Water Absorption	Water Vapor Transmission, perms	Dimensional Stability % Change	Nominal Density, pcf	Service Temperature Range, F	Flame Spread	Smoke Developed
OX-IS Values	25	40	<0.06	<0.3	<0.4	2	-50 to +190	≤ 75	≤ 450
SI-STRONG Values	25	N/A	<0.06	<0.3	<0.2	2.0	-50 + +250	≤ 25	≤ 450

1. -40 and 200 degrees F, ambient RH, length & width.
2. Fire Performance /Surface Burn Characteristics.

Table 2 Allowable Stress Design

Product Name	**Thickness min.**	**Allowable Unit Shear capacity, (plf)[1]**	**Maximum Stud Spacing**	**GWB Thickness[5]**	**GWB Fastener[3, 4] Spacing (edge:field)**	**Minimum Fasteners[2]**	**Maximum Fastener spacing[2]**
OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation	0.50” 1.00” 1.70”	DrJ TER# 0804-01	16" o.c. / 24" o.c.	None required, 0.5”, .05” + Thermo-Ply red	8:8 8:12 16:16	0.113" dia roofing nail with minimum .280” head size, 2” cap nails with minimum .011” dia, or 16 gauge, 7/16" crown staples with 1” minimum penetration into the stud.	3" o.c. edge / 3" field or 3” o.c. edge / 6” o.c. field

1. For allowable unit shear capacities, refer to DrJ TER #0804-01, Sections 5.2.7 Table 10.
2. Fasteners are to be installed with the crown parallel to the framing. Fastener edge distance shall be a minimum of 3/8". Fastener head shall be in contact with the panel surface. Alternately, fastener heads are permitted to be overdriven into foam portion of the panel with no reduction in shear capacities.
3. Unless noted otherwise in Drj Ter#0804-01, GWB attached with minimum #6 type W or S screws 1¼" long with a minimum edge distance of 3/8".
4. ½" GWB adhered with wall and floor adhesive (*ASTM* C557) and #6 (6" x 1 1/4") bugle head, coarse thread drywall screws, edges blocked.
5. Install Thermo-Ply Red on opposite side of wall from the OX-IS® or SI-Strong with minimum 16 gauge, 1" crown staples fastened 3" o.c edge/ 3" o.c. field. Separately attach ½ " GWB over Thermo-Ply Red with minimum #6 type W or S screws 1¼" long fastened 8" o.c edge/ 8" o.c. field.

For additional structural applications and requirements for OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation, refer to DrJ Ter #0804-01, sections 5.2.1 – 5.2.10, including tables 1-15.

INSTALLATION:

1. Panels shall be installed according to the manufacturer's installation guide. Refer to Section 6 of DrJ TER #0804-01.

2. Panels may be installed in either the vertical or horizontal orientation. The printed foam side should face out.

3. All panel edges/seams must be fastened and backed by framing. Panels should be installed with foam edges touching. Cut panels with a standard circular saw.

4. Joints must be butted at framing members, and a single row of fasteners must be applied to each panel edge into the stud below. Staples must run parallel to framing.

5. Nails and staples can be driven flush with the surface or counter sunk into the foam with a minimum embedment of 1” into framing.

6. Minimum fastening for panels in structural applications, shall be 16-gauge 7/16" crown staples or 0.113" dia roofing nail with minimum .280” head size, placed 3" around perimeter and 3” in the field of the board. For non-structural applications, the panel may be fastened every 3” around the perimeter and 6” in the field of the board. For metal studs use No. 8-18 x 1-1/4 Phillips modified truss head self-drilling screws.

7. OX-IS Structural Insulation shall not be used as a nail base. Nail siding to the studs or to furring strips and studs.

8. Panels may be used in fire rated exterior wall assemblies provided that they comply with the fire protection requirements of the local building code. Refer to DrJ TER #1510-04 for approved fire-rated assemblies.

CERTIFICATION AND INDENTIFICATION:

Ox Engineered Products, LLC certifies that OX-IS®, OX-IS® HS, and SI-Strong Structural Insulation panels are produced in conformance to this Materials Release (MR), in compliance with a validation program at PFS-TECO, Inc., and in accordance with the Code of Federal Regulations, 24 CFR 200.935. PFS-TECO, Inc. shall inspect the manufacturer's facility every year to assure that the initially accepted quality control procedures are being followed. Sufficient samples of this product shall be selected and tested each year to validate the manufacturer's conformance to the requirements of this MR. Each piece of sheathing certified as conforming to this MR shall be labeled with the following information:

1. Manufacturer's name and/or trademark
2. Plant identification
3. Product designation
4. Evaluation report numbers (HUD MR ###)
5. Quality Control/Control Validation Agency name and/or trademark

MANUFACTURING LOCATION(S):

The product covered under this MR will be produced at the following plants:

Ox Engineered Products, LLC
1255 North 5th Street
Charleston, IL 61920

The contact person(s) for all matters concerning this MR shall be:

Jesse Allen
Quality Assurance Manger
PH: 217-203-0300
E-Mail: jallen@oxep.com

WARRANTY:

Ox Engineered Products, LLC warrants OX-IS products for 15 years from the date of purchase, under normal use, against defects or poor performance. Should any defect or poor performance occur, Ox Engineered Products, LLC will if not installed replace affected product. If installed, Ox Engineered will pay the reasonable cost of labor and materials to repair and replace the actual area of wall damage caused by the non-conforming OX-IS product.

This warranty does not relieve the builder, in any way, of responsibility under the Builder's Warranty required by the National Housing Act or under any provisions applicable to any other housing program.

MANUFACTURER'S RESPONSIBILITIES:

1. Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

2. Produce, label, and certify the material, product, or system in strict accordance with the terms of this MR.

3. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.

4. When requested, provide the Office of Manufactured Housing Programs, HUD Headquarters, with a representative list of properties, in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

5. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership, or mailing address.

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for a renewal or revision 90 days prior to the Review Date printed on this MR. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development
Office of Manufactured Housing Programs
451 7th Street, SW, Room 9170
Washington, DC 20410-8000

Appropriate User Fee(s) for the TSP program can be submitted through the Pay.gov website at https://pay.gov/public/form/start/73881741

The holder of this MR may apply for revision at any time prior to the Review Date. Minor revisions may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the MR. HUD will notify the manufacturer that the MR may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,

2. the manufacturer has changed its organizational form without notifying HUD, or

3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

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This Materials Release is issued solely for the captioned firm and is not transferable to any person or successor entity.

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