DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	Series and Series Number: MATERIALS RELEASE NO: 286k (Supersedes issue dated May 18, 2000)
TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs	ISSUE DATE November 21, 2005
	REVIEW DATE November 21, 2008

SUBJECT: 1. **Product** Thermo-Ply Stormbrace Laminated Kraft Paperboard

2. **Name and address of Manufacturer** Ludlow Coated Products
700 Centreville Road
Constantine, MI 49042

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development (HUD) and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

This Materials Release cannot be used as an indication of endorsement or approval by HUD of the described product, and any statement or representation, however made, indicating such approval or endorsement by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: Wall sheathing

DESCRIPTION:

Thermo-Ply Stormbrace sheathing consists of laminated kraft paperboard covered with aluminum foil, polyethylene, or a kraft/polyethylene/kraft laminate on one or both surfaces.

REQUIREMENTS:

The laminated kraft paperboard shall be in compliance with Tables 1 & 2.

Table 1 Requirements for Thermo-Ply Stormbrace Laminated Kraft Paperboard (Red)

Physical Properties	Values	Test Methods
Thickness, minimum	0.113 inches	ASTM C 209
Modulus of Rupture, min.		
length	3200 psi	ASTM C 209
width	1200 psi	
Water absorption, max.	12%	ASTM C 209
Liner expansion, max.	0.5	SAE 315B
Vapor transmittance, min.	0.31 perms	ASTM E 96 ASTM D 2529

Table 2 Allowable Shear Resistance

Product Name	Thickness min. inches	Allowable shear resistance, plf[1,2,3]	Stud Spacing	Minimum Fastners[4]	Fastner Spacing
Stormbrace	0.113	BOCA 200 ICBO & SBCCI 175	16" o.c	16 ga 7/16" crown by 1-1/4 staple legs	3" o.c. edge 6" o.c. at intermediate supports
		BOCA 265 ICBO & SBCCI 200	16" o.c.	11ga 1-1/4" roofing nail or 16 ga 1" crown staples with 1-1/4" staple legs	3" o.c. edge 6" o.c. at intermediate supports

1. Shear resistance allowances shown here are applicable only when horizontal shear forces caused by wind and earthquake are calculated. The panels shall extend the full wall height and continuously span at least three studs.

2. Joints may be butted or lapped 3/4" minimum with a single row of fasteners.

3. The allowable shear resistance, when tested in accordance with ASTM E 72 (dry), is established, for areas where the BOCA code applies, by taking the lesser of the values determined by dividing the ultimate load by 2.5 or the load at which the deflection exceeds h/480 where h is the height of the wall assembly. For areas where the ICBO or SBCCI code applies, the ultimate load is divided by a safety factor of 3.0.

4. All fasteners shall be galvanized.

INSTALLATION:

1. Panels shall be installed according to the manufacturer's instructions.

2. Panels shall be installed with the long dimension vertical.

3. All nails and staples shall be driven flush with the surface. Nail heads and staple crowns shall not cut the surface of the panel. Staple crowns shall be parallel to the long dimension of the supporting members.

4. Joints shall be butted or lapped, and shall occur over studs, plates or solid blocking. Cut or trim with saw, knife or router.

5. Thermo-Ply Stormbrace laminated kraft paperboard panels shall not be used as a nail base. Nail siding to the studs or to furring strips and studs.

6. Thermo-Ply Stormbrace panels, with at least a polyethylene or kraft surface on one side shall be used for stucco applications without line wires or sheathing paper. The polyethylene or kraft surface shall be placed towards the stucco. Sheathing paper shall be used when the Thermo-Ply Stormbrace panels are covered with aluminum foil on both sides.

7. A vapor retarder of 0.5 perm or less shall be provided on the warm side of the wall covered with the Thermo-Ply Stormbrace panel or a vapor venting system to the outside shall be provided.

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.

9. Minimum fastening for panels in nonstructural applications, shall be 11 ga. by 1-1/4" long galvanized roofing nails or 16 ga. staples with a 7/16" minimum crown length and a 1-1/4" long leg, placed 6" o.c. at the panel edges and 12" o.c. at the intermediate supports. Corner bracing shall be provided with nonstructural applications of wall sheathing for stud spacing up to 24" o.c. maximum.

CERTIFICATION:

Ludlow Coated Products certifies that Thermo-Ply Stormbrace sheathing produced in conformance to this Materials Release (MR), is in compliance with a validation program at PFS, Inc., and in accordance with the Code of Federal Regulations, 24 CFR 200.935. PFS shall inspect the manufacturer's facility every year at the plant 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 number (HUD MR 286k)
5. Quality Control Agency name and/or trademark

MANUFACTURING LOCATIONS:

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

Ludlow Coated Products 700 Centreville Road Constantine, MI 49042 269-435-2425	Ludlow Coated Products 10351 Verdon Road Doswell, VA 23047 804-876-3135

WARRANTY:

Ludlow Coated Products warrants Thermo-Ply Stormbrace sheathing for four (4) years, under normal use, against defects or poor performance. Should any defect or poor performance occur, Ludlow Coated Products will make a pro rata allowance for the replacement of the defective 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:

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

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

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

3. When requested, provide the FHA Standards, 0Office 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.

4. 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
FHA Standards, Office of Manufactured Housing Programs
451 7th Street, SW, Room 9168
Washington, DC 20410-8000

Appropriate user fee shall be sent to:

U. S. Department of Housing and Urban Development
Miscellaneous Income – Technical Suitability of Products Fees
Bank of America
P. O. Box 198762
Atlanta, GA 30384-8762

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.

****

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

****