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NATIONAL EVALUATION REPORT

Report No. NER-215

Re-Issued May 1, 2002

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

Section 07310 – Shingles

REPORT HOLDER:

CHEMCO, INC.
POST OFFICE BOX 875
FERNDALE, WASHINGTON 98248
WWW.CHEMCO.ORG

EVALUATION SUBJECT:

FTX, CEDARPLUS, DURASHAKE, FST,
AND CHEMCO PRESSURE-TREATED
WOOD SHAKES AND SHINGLES

**NATIONAL
EVALUATION
SERVICE, INC.**

**NES
Product Evaluation Listing**

1.0 SUBJECT

**2.0 PROPERTY FOR WHICH
EVALUATION IS SOUGHT**

3.0 DESCRIPTION

4.0 INSTALLATION

5.0 IDENTIFICATION

6.0 EVIDENCE SUBMITTED

7.0 CONDITIONS OF USE

[back to the NES home page](#)

1.0 SUBJECT

Pressure Treated Wood Shakes and Shingles:

- 1.1 FTX
- 1.2 CEDARPLUS
- 1.3 DURASHAKE
- 1.4 FST
- 1.5 CHEMCO

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

- 2.1 Weather Resistance
- 2.2 Roofing Classification

3.0 DESCRIPTION

The shakes and shingles described in this report are sold under the trade names FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO. Treated products are identified as "Class B" and "Class C." The "Class B" treated shakes and shingles have higher levels of chemical retention than the "Class C" treated shakes and shingles.

FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO pressure treated wood shakes and shingles shall be produced from No. 1 grade western red cedar shakes or shingles, complying with the applicable code. Shakes and shingles, having a maximum moisture content of 25 percent, are pressure treated with a proprietary fire-retardant chemical. The bundles shall be labeled as indicated in the Identification portion of this report.

Installation shall comply with instructions described herein for the Class A, Class B, or Class C roof coverings, except additional weather protective measures are necessary in areas subject to roof ice buildup and wind driven snow as required by the applicable code.

4.0 INSTALLATION

4.1 GENERAL

Wood shakes or shingles shall be installed on minimum roof slopes of 4:12, except as described herein. When wood shingles are installed on minimum roof slopes of 3:12, an underlayment of not less than a listed Type 15 felt complying with ASTM D 226, Type I, shall be used and the installation shall be in accordance with the applicable code and shall be approved by the local building official having jurisdiction.

The roof valley flashing shall be fabricated in accordance to the applicable code and applied over an underlayment of not less than 36 inch (914 mm) wide Type 15 felt. The metal shall extend at least 8 inches (203 mm) from the centerline each way for wood shingles and 11 inches (279 mm) from the centerline each way for wood shakes. Sections of flashing shall be overlapped a minimum of 4 inches (102 mm).

Maximum weather exposure shall not exceed the value specified in [Table 1](#). The hip and ridge weather exposure shall not exceed those permitted for the field of the roof.

4.2 CLASS A ROOF COVERING

FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO pressure treated wood shakes and shingles labeled "Class B" are installed over 1/4 inch (6 mm) thick Dens-Deck® Roof Board, manufactured by Georgia-Pacific Corporation. The Dens-Deck board is fastened either to 1 inch (25 mm) by 4 inch (102 mm) decking spaced in accordance with weather exposure for proper fastening or 1/2 inch (13 mm) plywood with exterior glue. Dens-Deck board requires a minimum of four fasteners per board to avoid panel shifting. Dens-Deck Roof Board may be substituted with a minimum,

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5.0 IDENTIFICATION

6.0 EVIDENCE SUBMITTED

7.0 CONDITIONS OF USE

[back to the NES home page](#)

seventy two pound mineral surface fiberglass cap sheet complying with ASTM D 3909 and fastened to either 1 inch (25 mm) by 4 inch (102 mm) decking spaced in accordance with weather exposure for proper fastening or ½ inch (13 mm) plywood with exterior glue. An interlayment of 18 inch (457 mm) Type 30 felt is placed between courses on the shake decks. Shake and shingle fasteners shall be long enough to penetrate at least 1 inch or through the sheathing. Other installation details are as described in Section 4.3 of this report.

4.3 CLASS B ROOF COVERING

4.3.1 Shake Installation

FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO pressure treated western red cedar shakes labeled "Class B" are applied over a substrate of 1 inch (25 mm) by 4 inch (102 mm) spaced sheathing boards or not less than ½ inch (13 mm) thick plywood with exterior glue which shall be installed in accordance with the applicable code. An underlayment of Type 30 complying with ASTM D 226, 36 inch (914 mm) wide asphalt saturated organic felt is installed under the 15 or 18 inch (381 or 457 mm) long starter course at the eave line. An 18 inch (457 mm) wide interlayment of Type 30 asphalt saturated organic felt is applied between shake courses in such a manner that no felt is exposed to the weather below the shake butts nor between the individual shakes. Shakes are laid with a minimum sidelap of 1½ inches (38 mm) between joints in adjacent courses. Spacing between shakes shall not be less than ¾ inch (19 mm) nor more than 5/8 inch (16 mm). Shakes shall be attached to the sheathing with fasteners in accordance to the code, positioned approximately 1 inch (25 mm) from each edge and approximately 2 inches (51 mm) above the exposure line. Nails shall be a minimum No. 13 gauge with a 7/32 inch (6 mm) head diameter and of sufficient length to penetrate ¾ inch (19 mm) into the sheathing or through the thickness of the sheathing, whichever is less. The starter course at the eave shall be doubled. Fifteen inch (381 mm) or 18 inch (457 mm) shakes are permitted to be used for the final course at the ridge.

4.3.2 Shingle Installation

FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO pressure treated No. 1 grade western red cedar shingles labeled "Class B" shall be applied over a substrate of 1 inch (25 mm) by 4 inch (102 mm) spaced sheathing boards or not less than ½ inch (13 mm) thick plywood with exterior glue which shall be installed in accordance with the applicable code. The pressure treated shingles shall be laid and fastened to the plywood decking as described for pressure treated wood shakes in Section 4.3.1 of this report, except that underlayment and interlayment may be omitted in jurisdictions other than those using the BOCA National Building Code.

4.4 CLASS C ROOF COVERING

FTX, CEDARPLUS, DURASHAKE, FST, and CHEMCO pressure treated shakes or shingles labeled "Class C" shall be installed as described for the Class B roof covering.

5.0 IDENTIFICATION

Bundles of treated wood shakes and shingles shall contain a label noting the shingle or shake grading agency and compliance with UBC Standard 15-3 or 15-4. An additional label noting the pressure treater's name (Chemco, Inc.) and address, the quality control agency's name (Fire Tech Services, Inc.), product name, the Class B or Class C rating and this NES report number, also shall be affixed to each bundle.

The asphalt saturated organic felt underlayment and interlayment and the seventy-two pound mineral surface fiberglass cap sheet shall be identified with the label containing the name of the product, the company, and the quality control agency.

6.0 EVIDENCE SUBMITTED

6.1 Report of tests by United States Testing Company, Inc., California Division, for the Class B and Class C roof covering, dated June 3, 1982, and August 19,

NATIONAL EVALUATION SERVICE, INC.

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6.0 EVIDENCE SUBMITTED

7.0 CONDITIONS OF USE

1982, respectively.

- 6.2 Acceptance standard and quality control tests and procedures established for Chemco, Inc., Ferndale, Washington plant, dated May 6, 1982.
- 6.3 Inspector's manual for follow up inspections of FTX pressure treated western red cedar shakes and shingles prepared for Chemco, Inc., by Fire Tech Services, Inc.
- 6.4 Installation instructions for applying the FTX Class B and Class C cedar shakes and shingles roof covering.
- 6.5 Service agreement for product evaluation, follow up inspection and labeling between Fire Tech Services, Inc. and Chemco, Inc.
- 6.6 Inspection report of sample identification and treatment process, dated July 23, 1982, from Fire Tech Services, Inc.
- 6.7 Samples of the labels used for identification of the Chemco pressure treated shakes and shingles for the Class B and Class C roof coverings.
- 6.8 Drawings showing typical shake and shingle test deck construction by Fire Tech Services, Inc.
- 6.9 Supplemental information to Chemco data submitted from Fire Tech Services, Inc., dated October 19, 1982.
- 6.10 Report of Tests by Fire Tech Services, Inc., conducted in accordance with U.B.C. Standard No. 32-7, Section 32.701 (c), dated March 25, 1986.
- 6.11 Report of fire tests conducted on ten year weather exposed decks, Report No. FTT 21060-3, dated October 6, 1992, prepared by Fire Tech Services, Inc.
- 6.12 Chemco, Inc.'s Ferndale, Washington plant quality control manual for fire retardant pressure treated cedar shakes and shingles, Revised April, 1996.
- 6.13 Test report on Chemco FTX Class B Fire Retardant Treated Cedar Shakes and Shingles Applied Over Spaced Sheathing in accordance with ASTM E 108, prepared by Western Fire Center, Inc., Report No. FT 7519-1, dated June 16, 1997, signed by Noel Pataansuu, Thomas Woodford, and James H. Heywood.
- 6.14 Test report on Chemco FTX Class A Roofing System in accordance with ASTM E 108, prepared by Western Fire Center, Inc., Report No. FT 7902-1, dated September 15, 1997, signed by Noel Pataansuu, Thomas Woodford, and James H. Heywood.
- 6.15 Test report on Chemco FTX Class A Roofing System Over Spaced Sheathing in accordance with ASTM E 108, prepared by Western Fire Center, Inc., Report No. FT 7902-2, dated September 15, 1997, signed by Noel Pataansuu, Thomas Woodford, and James H. Heywood.
- 6.16 Test report on Chemco FTX Class A Roofing System With Mineral Surfaced Cap Sheet Over Spaced Sheathing in accordance with UBC Standard 15-2 (ASTM E 108), prepared by Fire Tech Services, Inc., Report No. FT90525-1, dated May 25, 1999, signed by Noel Pataansuu and James H. Heywood.

7.0 CONDITIONS OF USE

The National Evaluation Service Committee finds that FTX, CEDARPLUS, DURASHAKE, FST and CHEMCO pressure treated wood shake and shingle roof covering systems described in this report comply with or are alternatives to the 2000 International Building Code, BOCA® National Building Code/1999, 1999 Standard Building Code, 1997 Uniform Building Code, and the 2000 International Residential

[back to the NES home page](#)

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Code subject to the following conditions:

- 7.1 The treated wood shakes and shingles shall be installed in accordance with this report.
- 7.2 The wood shakes and shingles shall be pressure treated under a quality control program with inspections by Fire Tech Services, Inc.
- 7.3 In areas using the BOCA® National Building Code/1999, an underlayment is required under wood shingles at eaves, ridges, hips, valleys, and all other changes of roof slope and between each course of wood shakes on all roof slopes. In areas where the average daily temperature in January is 25 degrees F., two layers of underlayment cemented together (or a waterproofing membrane) is required to extend from the eave to a point at least 24 inches inside the exterior wall line of the building.
- 7.4 This report is subject to periodic re-examination. For information on the current status of this report, consult the [NES Product Evaluation Listing](#) or contact the [NES](#).

TABLE 1
MAXIMUM WEATHER EXPOSURE

LENGTH	3 INCHES TO LESS THAN 4 INCHES IN 12 INCHES	4 INCHES IN 12 AND STEEPER
WOOD SHINGLES		
16 inch	3 ³ / ₄	5
18 inch	4 ¹ / ₄	5 ¹ / ₂
24 inch	5 ³ / ₄	7 ¹ / ₂
WOOD SHAKES		
18 inch	7 ¹ / ₂	7 ¹ / ₂
24 inch	10	10

SI: 1 inch = 25.4 millimeters