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NATIONAL EVALUATION REPORT

Report No. NER-628

Issued February 1, 2002

DIVISION 06 – WOOD AND PLASTICS

Section 06070 – Wood Treatment

MANUFACTURER:

OSMOSE, INC
1016 EVEREE INN ROAD
GRIFFIN, GEORGIA 30224-0249
800-241-0240
www.osmose.com

EVALUATION SUBJECT:

NATUREWOOD™ PRESSURE TREATED WOOD

And Wholly Owned Subsidiary:

TIMBER SPECIALTIES COMPANY
9184 TWISS ROAD
CAMBELLVILLE, ONTARIO, CANADA L0P 1B0

LISTEES:

Allweather Wood Treaters	White City, OR
C.M. Tucker Lumber Corp.	Pageland, SC
California Cascade Industries	Woodland, CA
Collum's Lumber Mill, Inc.	Allendale, SC
Creative Playthings	Emporia, VA
Deck America	Woodbridge, VA
Great Southern Wood Preserving	Abbeville, AL
Maine Wood Treaters	Mechanic Falls, ME
Midwest Manufacturing	Eau Claire, WI
Quality Wood Treating Co.	Prairie du Chien, WI
Universal Forest Products	Hamilton, OH
Wood Protection LP	Houston, TX

This report is limited to the specific product and data and test reports submitted by the applicant in its application requesting this report. No independent tests were performed by the National Evaluation Service, Inc. (NES), and NES specifically does not make any warranty, either expressed or implied, as to any finding or other matter in this report or as to any product covered by this report. This disclaimer includes, but is not limited to, merchantability. This report is also subject to the limitation listed herein.

**NATIONAL
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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

1.0 SUBJECT

NatureWood™ Pressure Treated Wood

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

Preservative-Treated Wood

3.0 DESCRIPTION

3.1 General

NatureWood™ Pressure Treated Wood is a preservative-treated wood used for wood members that are required by the applicable *Code* to be protected against decay or termites.

NatureWood (NW) brand wood preservatives are produced by Osmose, Inc. and used by independently owned and operated wood preserving plants to pressure treat wood products in accordance with NatureWood Quality Control Standards and Procedures. Some NatureWood products are also available with a factory applied water-repellent additive.

NatureWood products are appropriate for use in above-ground, ground contact, and fresh water contact applications and resist attack by rot, fungal decay, and subterranean termites, including Formosan termites.

3.2 Preservative System

NatureWood preservatives are waterborne, Copper-Quat preservative systems used for wood members that are required by the applicable *Code* to be protected against fungal decay or termites, or where such protection is desired.

NatureWood compositions are based on copper combined with a quaternary ammonium compound (quat). These active ingredients are dissolved in an alkaline carrier system of ethanolamine and/or ammonia, which aids in preservative penetration and permanence in wood. The ratio of copper, expressed as CuO, to quat is 2:1, by weight.

3.3 Materials

NatureWood Copper Quat Preservatives are used to pressure treat the following materials:

3.3.1 Dimensional lumber and timbers of the following sapwood species: Southern Pine, Ponderosa Pine, Red Pine, Radiata Pine, and Caribbean Pine.

3.3.2 Dimensional lumber and timbers of the following heartwood species: Douglas-Fir, Western Hemlock, Hem-Fir, Lodgepole Pine, Jack Pine, and Redwood.

3.3.3 Maximum nominal size of 2-by-8 in all listed species for decking use only.

3.3.4 Southern Pine and Douglas-Fir plywood.

3.3.5 Round and sawn posts and building poles of Southern Pine, Ponderosa Pine, Red Pine, Douglas-Fir, Hem-Fir and Western Hemlock.

Minimum preservative retention levels are provided below in **Table 1**.

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Table 1
**Minimum Preservative Retention Requirements
for NatureWood Products by End Use**

End Use	Min. Actives ^{1,2} Retention pcf (Kg/m ³)
Above Ground - General Use	0.25 (4.0)
Decking & Specialties Use - Above Ground	
• Sapwood species Listed in Section 3.3.1	0.15 (2.4)
• Heartwood Species Listed in Section 3.3.2	0.25 (4.0)
Ground Contact	0.40 (6.4)
Critical Structural Members	0.60 (9.6)
Wood Foundation Systems	0.60 (9.6)

Table 1 Notes:

¹ Actives retention expressed as CuO + quat.

² Pounds of preservative per cubic foot of wood.

3.4 Treatment and Processing

Only the vacuum-pressure treating process described in American Wood-Preservers' Association (AWPA) Commodity Standard C1-00 and in the Processing and Treatment Standard of the Use Category System (UCS) shall be used to produce NatureWood products.

The minimum preservative retention levels are shown above in Section 3.3. Other processing provisions including the minimum preservative penetration requirements are specified in the approved quality control manual. The use of incising may be required to meet the minimum penetration requirements in certain species or sizes of materials.

3.5 Quality Assurance

Treatment of materials is conducted in the facilities noted under Listees above according to NatureWood Quality Control Standards and Procedures with inspections by an NES listed independent, third party inspection agency.

3.6 Corrosion

Metals used in contact with NatureWood pressure treated wood shall be hot dip galvanized, stainless steel or triple coated zinc polymer materials. Carbon steel, aluminum, red brass and bronze shall not be used in contact with NatureWood products.

3.7 AWPA Standards

NatureWood Copper-Quat Preservatives and NatureWood Pressure-Treated Wood standards and specifications rely primarily on those recognized by the American Wood-Preservers' Association (AWPA). Additional specifications set forth by Osmose are proprietary and differ from AWPA standards.

All applicable AWPA Standards are listed in **Section 6** of this report.

4.0 INSTALLATION

4.1 General

NatureWood™ Pressure Treated Wood is installed as preservative-treated lumber, timbers and plywood in accordance with the requirements of the applicable *Code*.

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The manufacturer's and industry published installation instructions for wood and pressure-treated wood and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation.

The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

4.2 Applications

NatureWood pressure treated products are permitted in locations where wood is used and/or in locations required by the applicable *Code* to be fungal decay and/or termite resistant. The treated wood members are listed for use in above-ground and ground contact applications. Typical applications are listed below in **Table 2**.

Locations requiring preservative-treated wood for fungal decay and/or termite resistance are listed in:

Section 2304.11	<i>International Building Code</i>
Section 2304	<i>Standard Building Code</i>
Section 2311	<i>BOCA National Building Code</i>
Section 2306	<i>Uniform Building Code™</i>
Sections R323, R324	<i>International Residential Code™ for One- and Two-Family Dwellings</i>
Sections 322, 323	<i>International One and Two Family Dwelling Code.</i>

Table 2
**Typical Applications for
NatureWood Pressure Treated Wood Products**

Service Conditions	Typical Applications
Above Ground	Decking, Rails, Spindles, Trim and Fascia, Framing, Flooring, Sill Plates, Trellises, Gazebos, Fencing
Ground Contact	Deck Support Posts, Fence Posts
Critical Structural	Permanent Wood Foundations, Building Poles

4.3 Fasteners

The fasteners used with the product shall be hot dip galvanized, stainless steel or triple coated zinc polymer materials.

4.4 Structural

The maximum load duration factor allowed for structural members pressure-treated with NatureWood Preservatives shall be 1.6 in accordance with section 2.3 of the **AFPA, National Design Specification for Wood Construction**.

5.0 IDENTIFICATION

Each piece of NatureWood™ Pressure Treated Wood lumber, timber and plywood shall be labeled with the manufacturer's name/and or trademark, address, the product name, grade mark, third-party inspection label Timber Products Inspection, Inc. NER-QA275, and this National Evaluation Service evaluation report number, NER-628. Sample Labels see **Figure 1** of this report.

6.0 EVIDENCE SUBMITTED

6.1 American Wood-Preservers' Association (AWPA) Standards

6.1.1 AWPA Analytical Standards A2-98 (sections 1 and 6), A3-00, A9-00, A11-93, A16-93, A17-97, A18-99.

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6.1.2 AWWA Commodity Standards C1-00, C2-00, C4-99, C5-00, C9-00, C14-99, C15-00, C16-00, C17-00, C22-96.

6.1.3 AWWA Preservative Standard P5-01.

6.2 AWWA Reports of Treatments Subcommittees

6.2.1 Report of Subcommittee T-2, Lumber and Timbers, September 23, 1992

6.2.2 Report of Subcommittee T-8, Composites, September 23, 1992

6.2.3 Report of Subcommittee T-2, Lumber and Timbers, September 14, 1994

6.2.4 Report of Subcommittee T-2, Lumber and Timbers, September 27, 1995

6.2.5 Report of Subcommittee T-8, Composites, September 27, 1995

6.3 Technical Information on the Use of ACQ (Alkaline Copper Quaternary) as a Wood Preservative, Chemical Specialties, Inc., dated April 2001.

6.3.1 Laboratory Tests

- Soil Block Tests, AWWA E10-91.
- Termite Tests, CSIRO Australian Laboratory Choice Test Method, CSIRO, Melbourne, Australia.

6.3.2 Simulated Field Tests

- Soil Bed Exposure Test, AWWA E14-94.

6.3.3 Field Tests

- Ground Contact Field Stake Tests, AWWA E7-93 at Hilo, HI, Harrisburg, NC, and Gainesville, FL.
- Ground Contact Field Stake Tests, AWWA E7-93 at Dorman, MS and Saucier, MS, Mississippi Forest Products Laboratory, MSU, Starkville, MS.
- Ground Contact Field Stake Tests, AWWA E7-93 at Innisfail, Queensland, Australia and Canal Creek, North Queensland, Australia, DPI Queensland Forest Service.
- Ground Contact Field Stake Tests, AWWA E7-93 at Whakarewarewa, New Zealand, New Zealand Forest Research Institute.

6.3.4 Preservative Permanence

- Laboratory Leaching Test, AWWA E10-87 and E11-87, Michigan Technological University.
- Depletion from Soil Bed Test Samples, AWWA E15-93.
- Depletion from Ground Contact Stakes, E7-93 at Hilo, HI and Gainesville, FL.

6.3.5 Effects on Wood Properties

- Static Bending Strength Test, ASTM D-143, Clemson University and Michigan Technological University.
- Glueline Shear Properties of 4-ply 15/32 Southern Pine Plywood, Michigan Technological University.

6.3.6 Corrosivity

- Corrosion of Metals by Treated Wood, AWWA E12-94.

6.3.7 Treatment Testing

- Treatment Trials of Various Wood Species, Vacuum-Pressure Method described in AWWA C1.

6.4 Osiose NatureWood™ Pressure Treated Wood Quality Control Manual, which includes Osiose Standards NW-01 (General Use QC Procedures) and

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NW-DECK-01 (Decking QC Procedures), dated October 2001. Signed by Osmose, Inc., Licensed Producers and Timber Products Inspection, Inc. (TPI).

7.0 CONDITIONS OF USE

The National Evaluation Service Committee finds that the NatureWood™ Pressure Treated Wood as described in this report complies with or is a suitable alternate to that specified in the *2000 International Building Code*® with the *2001 Supplement*, the *2000 International Residential Code*® for *One- and Two-Family Dwellings* with the *2001 Supplement*, the *BOCA National Building Code/1999*, the *1999 Standard Building Code*®, the *1997 Uniform Building Code*™, and the *1998 International One and Two Family Dwelling Code* subject to the following conditions:

- 7.1 This Evaluation Report and the manufacturer's published installation instructions, when required by the code official, shall be submitted at the time of permit application.
- 7.2 The NatureWood products are limited to the wood species and minimum retentions noted under Section 3.3 and [Table 1](#) above.
- 7.3 The treatment process complies with this report and Osmose Quality Control Standards and Procedures for NatureWood products.
- 7.4 The treatment process is carried out at the manufacturing facilities of the listees noted in this report, under a quality control program with inspections by an NES listed independent, third party quality assurance agency.
- 7.5 Dimensional lumber designated for "Decking Use" shall be a maximum of 2 inches thick and 8 inches wide.
- 7.6 The product is limited to the applications noted under Section 4.2 above.
- 7.7 NatureWood Pressure Treated Wood preservatives shall not be used to treat LVL, OSB, or FRTW wood products.
- 7.8 Surface treatment of field cuts shall be in accordance with the manufacturer's recommendations.
- 7.9 In areas where a soil treatment/barrier termiticide treatment is required by the applicable *Code* or local code official, NatureWood Pressure Treated Wood is used only as supplemental protection from termites and is not a replacement for required treatments or barriers.
- 7.10 NatureWood Pressure Treated Wood has not been evaluated for exposure to salt water.
- 7.11 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](#).

Figure 1. Sample Product Labels

