

**ICC-ES Evaluation Report****ESR-2667\***

Issued April 1, 2012

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**DIVISION: 06 00 00—WOOD, PLASTICS AND  
COMPOSITES**  
**Section: 06 05 73.13—Preservative Wood Treatment**

**REPORT HOLDER:**

**OSMOSE, INC.**  
1016 EVEREE INN ROAD  
GRIFFIN, GEORGIA 30224  
(770) 233-4200  
[www.osmose.com](http://www.osmose.com)

**EVALUATION SUBJECT:**

**ADVANCE GUARD® / Hi-bor® PRESERVATIVE-TREATED  
WOOD**

**ADDITIONAL LISTEES:**

**CALIFORNIA CASCADE FONTANA, INC.**  
8395 SULTANA AVENUE  
FONTANA, CALIFORNIA 92335

**CULPEPER WOOD PRESERVERS**  
15487 BRAGGS CORNER ROAD  
CULPEPER, VIRGINIA 22701

**GREAT SOUTHERN WOOD PRESERVING**  
1100 HIGHWAY 431 NORTH  
ABBEVILLE, ALABAMA 36310

**GREAT SOUTHERN WOOD-BUSHNELL, INC.**  
COUNTY ROAD 527-A  
LAKE PANASOFFKEE, FLORIDA 33538

**GREAT SOUTHERN WOOD-COLUMBUS, INC.**  
1050 GREAT SOUTHERN WAY  
COLUMBUS, TEXAS 78934

**GREAT SOUTHERN WOOD-GLENWOOD, INC.**  
400 SOUTH SPUR 8  
GLENWOOD, ARKANSAS 71943

**GREAT SOUTHERN WOOD-JESUP, INC.**  
1 GREAT SOUTHERN WAY  
JESUP, GEORGIA 31545

**GREAT SOUTHERN WOOD-MANSURA, INC.**  
334 ELDER WOOD ROAD  
MANSURA, LOUISIANA 71350

**GREAT SOUTHERN WOOD-TUSCUMBIA, INC.**  
1703 DENTON ROAD  
TUSCUMBIA, ALABAMA 35674

**HAWAII PLANING MILL, LIMITED**  
150 KEAA STREET  
HILO, HAWAII 96720

**HIXSON LUMBER SALES, INC.**  
POST OFFICE BOX 1466  
MAGNOLIA, ARKASAS 71753

**HONOLULU WOOD TREATING COMPANY**  
91-291 HANUA STREET  
KAPOLEI, HAWAII 96707

**ROYAL PACIFIC INDUSTRIES, INC.**  
4035 NORTH RIVERSIDE DRIVE  
MCMINNVILLE, OREGON 97128

**TRUEGUARD, LLC**  
725 SOUTH 32<sup>ND</sup> STREET  
WASHOUGAL, WASHINGTON 98671

**WESTERN WOOD PRESERVING COMPANY**  
1313 ZEHNDER STREET  
SUMNER, WASHINGTON 98390

**WESTERN WOOD TREATING, INC.**  
POST OFFICE BOX 1443  
1492 CHURCHILL DOWNS AVENUE  
WOODLAND, CALIFORNIA 95776

**WOOD PROTECTION, LP**  
5151 SOUTH LOOP EAST  
HOUSTON, TEXAS 77033

**1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- Other Codes (see Section 8.0)

**Properties evaluated:**

- Preservative-treated wood
- Decay resistance above ground
- Termite resistance

**\*Revised August 2013**

- Corrosion
- Structural

## 2.0 USES

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood products are used in above ground applications that are required by code to be protected against decay and termites.

## 3.0 DESCRIPTION

### 3.1 General:

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood products are recognized for use in above-ground applications and to resist attack by fungal decay and subterranean termites, including Formosan termites.

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood uses WoodBor brand and/or TIMBOR Industrial brand wood preservatives that are supplied by Osmose, Inc., and are used by the wood-preserving treatment facilities listed in Table 3, to preservative-treat wood members in accordance with the Osmose, Inc. Quality Control Manual.

### 3.2 Preservative System:

Wood Bor brand and/or TIMBOR Industrial brand wood preservative is a Disodium Octaborate Tetrahydrate (DOT) wood-preservative-treatment chemical for treating wood members.

### 3.3 Materials:

The following wood products may be treated with the Wood Bor brand and/or TIMBOR Industrial brand wood preservative:

- a. Dimensional lumber and timbers of the following species: Mixed Southern pine, Radiata pine, red pine, ponderosa pine, hem-fir, Coastal Douglas-fir, and spruce-pine-fir.
- b. Plywood must have veneers consisting of the following species: Southern pine and Douglas-fir.

Minimum preservative retention levels must comply with the values shown in Table 1.

## 4.0 DESIGN AND INSTALLATION

### 4.1 General:

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood is installed as preservative-treated lumber, timbers and plywood in accordance with the requirements of the applicable code.

Osmose, Inc., and industry-published installation instructions for wood and pressure-treated wood and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation.

The instructions within this report govern if there are any conflicts between the Osmose, Inc., instructions and this report.

### 4.2 Applications:

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood products may be used in locations where wood is permitted and/or in locations where wood is required by the code to be fungal decay or termite resistant in all building types and occupancies as defined by the applicable code. The treated wood members are recognized in this report for use in above-ground applications where they are continuously protected from liquid water. Advance Guard<sup>®</sup> /

Hi-bor<sup>®</sup> preservative-treated wood may be used as sill-plates over concrete slabs and foundations in accordance with the applicable code. Typical applications are described in Table 2.

Locations requiring preservative-treated wood for decay or termite resistance are described in Section 2304.11 of the IBC, and Sections R317 and R318 of the IRC.

### 4.3 Fasteners:

Fasteners used with Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood products must be in accordance with Section 2304.9.5 of the IBC and Section R317.3 of the IRC, except that aluminum fasteners and carbon steel fasteners are also permitted when used for interior applications.

### 4.4 Protection from Water:

The borate preservative in Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood is water soluble and the treated wood must be protected from liquid water, where permanently installed.

Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood used in weather-protected exterior applications must be continuously protected from direct wetting with a minimum of one coat of primer and two coats of finish paint.

### 4.5 Structural:

**4.5.1 Duration of Load:** The maximum load duration factor allowed for Advance Guard / Hi-bor<sup>®</sup> treated wood products used for structural members is 1.6, in accordance with Section 2.3 of the American Forest & Paper Association (AF&PA) National Design Specification for Wood Construction (NDS).

**4.5.2 Incising Factor:** When the treated wood products have been incised, the reference design values must be multiplied by the incising factor,  $C_i$ , in accordance with Section 4.3.8 of the NDS.

## 5.0 CONDITIONS OF USE

The Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> Preservative-treated wood described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 Use of the preservative-treated wood is limited to the types of applications noted in Section 4.2.
- 5.2 Surface treatment of field cuts must be in accordance with the recommendations of Osmose, Inc.
- 5.3 The Advance Guard<sup>®</sup> / Hi-bor<sup>®</sup> preservative-treated wood products are limited to the wood species noted in Section 3.3 and minimum retention levels noted in Table 1.
- 5.4 Treated lumber and plywood used for protection against Formosan termites must be labeled/identified for this use as described in Section 7.0.
- 5.5 Treatment of wood products is at the facilities of the treaters noted in Table 3, under a quality control program with inspections by Timber Products Inspection Inc. (AA-664 and AA-696) or Southern Pine Inspection Bureau (AA-680).

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with Appendix J [Disodium Octaborate Tetrahydrate (DOT) Wood Preservative Systems (Formerly AC62)] of the ICC-ES Acceptance Criteria for Proprietary Wood Preservative Systems—

Common Requirements for Treatment Process, Test Methods and Performance (AC326), dated February 2013.

- 6.2 Quality control documentation in accordance with Section 5.0 of AC326, and in compliance with AWWA M22 and AWWA M23.

**7.0 IDENTIFICATION**

Advance Guard® / Hi-bor® preservative-treated lumber, timber and plywood must be stamped or end-tagged with the name of the inspection agency (Timber Products Inspection Inc.); the product name (Advance Guard® / Hi-bor®), the Osmose, Inc. name; the treatment company name and plant location (refer to Table 3); the name of the preservative components; the intended end use application (see Table 2); minimum retention; and the evaluation report number (ESR-2667). Sample labels are shown in Figures 1 and 2.

Products treated for protection against Formosan termites must be labeled as shown in Figure 1.

**8.0 OTHER CODES**

In addition to the codes referenced in Section 1.0, the products described in this report were evaluated for compliance with the requirements of the following legacy codes and earlier editions of the International codes:

- 2006, 2003 and 2000 *International Building Code*® (IBC)
- 2006, 2003 and 2000 *International Residential Code*® (IRC)
- 1997 *Uniform Building Code*™ (UBC)
- BOCA® *National Building Code*/1999 (BNBC)
- 1999 *Standard Building Code*® (SBC)

The Advance Guard® / Hi-bor® preservative-treated wood products described in this report comply with, or are suitable alternatives to what is specified in, the codes

listed above, subject to the provisions of Sections 8.1 through 8.6.

**8.1 Uses:**

See Section 2.0.

**8.2 Description:**

See Section 3.0.

**8.3 Installation:**

See Section 4.0, except for the following modifications:

Locations requiring preservative-treated wood for decay or termite resistance are described in Section 2304.11 of the 2006, 2003 and 2000 IBC, Sections R319 and R320 of the 2006 and 2003 IRC, Sections R323 and R324 of the 2000 IRC, Section 2304 of the SBC, Section 2311 of the BNBC, and Section 2306 of the UBC.

Fasteners used with Advance Guard® / Hi-bor® preservative-treated wood products must be in accordance with Section 2304.9.5 of the 2006, 2003 and 2000 IBC, Section R319.3 of the 2006 and 2003 and IRC, Section R323.3 of the 2000 IRC, Section 2306.3 of the SBC, Section 2311.3.3 of the BNBC, and Section 2304.3 of the UBC, except that aluminum fasteners and carbon steel fasteners are also permitted when used for interior applications.

**8.4 Conditions of Use:**

See Section 5.0.

**8.5 Evidence Submitted:**

See Section 6.0.

**8.6 Identification:**

See Section 7.0.

**TABLE 1—MINIMUM PRESERVATIVE RETENTION REQUIREMENTS FOR ADVANCE GUARD®/Hi-bor® PRESERVATIVE-TREATED WOOD PRODUCTS BY END USE**

END USE	MINIMUM TOTAL ACTIVES <sup>1,2</sup> RETENTION pcf (kg/m <sup>3</sup> )
	B <sub>2</sub> O <sub>3</sub>
Above-ground applications UC1, UC2 and UC3A, not subject to contact with liquid water, species listed in Section 3.3	0.17 (2.72) Not suitable for exposure to Formosan termites
	0.28 (4.49) Suitable for exposure to Formosan termites

<sup>1</sup>Retention is expressed in pounds of preservative per cubic foot (kilograms per cubic meter) of wood.

**TABLE 2—TYPICAL APPLICATIONS FOR ADVANCE GUARD®/Hi-bor® PRESERVATIVE-TREATED WOOD PRODUCTS**

SERVICE CONDITIONS	AWPA USE CATEGORY	TYPICAL APPLICATIONS
Interior construction, above ground, dry	UC1	Interior construction - millwork and furnishings
Interior construction, above ground, damp	UC2	Interior construction - interior beams, timbers, flooring, millwork and sill plates
Exterior construction, above ground, coated & rapid water runoff	UC3A	Refer to Section 4.4 Exterior - coated millwork, siding and trim

**TABLE 3—WOOD PRESERVATIVE TREATMENT LOCATIONS**

<b>LISTEES</b>	<b>WOOD PRESERVATIVE TREATMENT LOCATIONS</b>
California Cascade Fontana, Inc.	Fontana, CA
Culpeper Wood Preservers	Culpeper, VA Shelbyville, IN Columbia, SC Fredericksburg, VA
Great Southern Wood Preserving	Abbeville, AL Irvington, AL
Great Southern Wood-Bushnell, Inc.	Bushnell (Lake Panasoffkee), FL
Great Southern Wood-Columbus, Inc.	Columbus, TX
Great Southern Wood-Glenwood, Inc.	Glenwood, AR
Great Southern Wood-Jesup, Inc.	Jesup, GA
Great Southern Wood-Mansura, Inc.	Mansura, LA
Great Southern Wood-Tuscumbia, Inc.	Tuscumbia, AL
Hawaii Planing Mill	Hilo, HI
Hixson Lumber Sales, Inc.	Caddo Mills, TX Carrollton, TX Gilmer, TX Pine Bluff, AR Willis, TX Winnfield, LA
Honolulu Wood Treating	Kapolei, HI
Royal Pacific Industries, Inc.	McMinnville, OR Rainier, OR
TrueGuard, LLC	Loveland, CO North Bend, OR Washougal, WA
Western Wood Preserving, Co.	Sumner, WA
Western Wood Treating, Inc.	Woodland, CA
Wood Protection, LP	Houston, TX

**TABLE 4—LISTEES AND PRIVATE BRAND NAME FOR EACH COMPANY FOR WOOD TREATED WITH ADVANCE GUARD® / Hi-Bor® WOOD PRESERVATIVE**

<b>COMPANY</b>	<b>PRIVATE BRAND NAME</b>
Osmose, Inc.	Advance Guard®
California Cascade Fontana, Inc.	Advance Guard® + Cal-Bor
Great Southern Wood Preserving	N-DURZ®
Hawaii Planing Mill, Ltd.	Hi-bor®
Hixson Lumber Sales, Inc.	Advance Guard®
Honolulu Wood Treating Co., Ltd.	Hi-bor®
Royal Pacific Industries, Inc.	Advance Guard® and Hi-bor®
TrueGuard, LLC	Advance Guard® and Hi-bor®
Western Wood Preserving, Co.	Advance Guard® and Hi-bor®
Western Wood Treating, Inc.	Advance Guard®
Wood Protection Co.	Advance Guard®



FIGURE 1—TYPICAL ADVANCE GUARD® BRAND BORATE PRESSURE TREATED STAMP DESIGN (0.42 DOT)



FIGURE 2—TYPICAL ADVANCE GUARD® BRAND BORATE PRESSURE TREATED STAMP DESIGN (0.25 DOT)



FIGURE 3—TYPICAL HI-BOR® BRAND BORATE PRESSURE TREATED STAMP DESIGN (0.42 DOT)



FIGURE 4—TYPICAL HI-BOR® BRAND BORATE PRESSURE TREATED STAMP DESIGN (0.25 DOT)