HOOVER TREATED WOOD PRODUCTS, INC

TECHNICAL NOTE

FOR ADDITIONAL INFORMATION: www.frtw.com or 1-800-TEC-WOOD (832-9663)

SPECIFICATIONS

PYRO-GUARD® Interior Fire-Retardant-Treated Wood

PART 1 - General Product Information

A. Lumber and plywood bearing the **PYRO-GUARD®** mark has a flame spread rating of 25 or less (Class A) when tested in accordance with ASTM E84, "Standard Test Method for Surface Burning Characteristics of Building Materials." **PYRO-GUARD®** fire-retardant-treated wood shows no evidence of significant progressive combustion when the test is extended for an additional 20-minute period. In addition, the flame front does not progress more than 10½ feet beyond the centerline of the burners at any time during the test. The flame spread and smoke developed index for each species and product are classified by Underwriters Laboratories Inc. (UL).

B. **PYRO-GUARD®** fire-retardant-treated wood is manufactured under the independent third-party inspection of Underwriters Laboratories Inc. (UL) Follow-Up Service and each piece shall bear the UL classified mark indicating the extended 30 minute ASTM E84 test.

C. **PYRO-GUARD®** shall be kiln dried after treatment (KDAT). The kiln drying process is monitored by Underwriters Laboratories, Inc. (UL) and the UL mark shall appear on the label.

D. **PYRO-GUARD®** shall be produced in accordance with UL Evaluation Report ER7002-01 (UL ER7002-01), latest version.

E. **PYRO-GUARD®** meets the performance requirements of AWPA U1, Commodity Specification H for Use Category UCFA and AWPA C20/C27 (Type A, HT).

F. **PYRO-GUARD®** is listed on the Department of Defense (DoD) Qualified Products List (QPL) and meets the requirements of MIL-L-19140-E as a Type 1 fire-retardant treatment for lumber and plywood.

PART 2 - Fire-Retardant Treatment

A. Treatment shall be **PYRO-GUARD®** manufactured by Hoover Treated Wood Products, Inc.

B. **PYRO-GUARD®** is an interior "Type A" fire-retardant with individual surface burning characteristics for the species and products listed under UL Certifications.

C. Structural performance of **PYRO-GUARD®** fire-retardant-treated wood has been tested in accordance with ASTM D5664 for lumber and ASTM D5516 for plywood. Evaluation of plywood data is in accordance with ASTM D6305. Evaluation of lumber data is in accordance with ASTM D6841. The resulting design value and span rating adjustments are published in UL ER7002-01, which includes evaluation of high temperature (HT) strength testing for roof applications.

D. **PYRO-GUARD®** fire-retardant-treated wood is kiln dried after treatment (KDAT) to maximum moisture content of 19% for lumber and 15% for plywood.

E. **PYRO-GUARD®** does not contain VOC's, urea formaldehyde or formaldehyde, halogens, sulfates, chlorides, or ammonium phosphate.

F. Plywood treated with **PYRO-GUARD®** shall be manufactured under US Product Standards - PS 1 or PS 2. Panels shall have a minimum bond durability of Exposure 1.

G. Grade marked lumber treated with **PYRO-GUARD®** shall be in accordance with PS 20.

PART 3 - Execution

A. **PYRO-GUARD®** fire-retardant-treated wood used in structural applications shall be installed in accordance with the conditions and limitations listed in UL ER7002-01.

B. **PYRO-GUARD®** fire-retardant-treated wood shall be installed in compliance with the requirements of the applicable building codes and product recommendations.

C. **PYRO-GUARD®** shall not be installed in areas where, in service, it is exposed to precipitation, direct wetting, or condensation.

D. As with untreated wood, avoid exposure to precipitation during shipping, storage or installation. Apply a water resistive barrier or underlayment over dry sheathing as soon as practical to avoid precipitation on the panel. Panels that get wet should be allowed to dry before covering, or be replaced.

UL Evaluation Report

UL ER7002-01

Issued: April 14, 2017

Revised: January 5, 2018

Visit UL's On-Line Certifications Directory at www.UL.com/erdirectory for current status of Report.

UL Category Code: ULET

CSI MasterFormat®

DIVISION: 06 00 00 – Wood, Plastics, and Composites
Sub-level 2: 06 05 00 – Common Work Results for Wood, Plastics, and Composites
Sub-level 3: 06 05 73 – Wood Treatment
Sub-level 4: 06 05 73.13 – Fire-Retardant Wood Treatment

COMPANY:

Hoover Treated Wood Products, Inc.
154 Wire Road
Thomson, Georgia 30824
(706) 595-7355
www.frtw.com

1. SUBJECT:

PYRO-GUARD® FIRE-RETARDANT-TREATED WOOD

2. SCOPE OF EVALUATION

- 2015 and 2012 *International Building Code*® (IBC)
- 2015 and 2012 *International Residential Code*® (IRC)
- ICC-ES Acceptance Criteria for Fire-Retardant-Treated Wood (AC66), dated June 2015
- ICC-ES Acceptance Criteria for Quality Documentation (AC10), dated June 2014

The products were evaluated for the following properties:

- Fire Resistance
- Surface Burning
- Structural Performance
- Hygroscopicity
- Thermal Barrier – Roof and Floor Applications
- Durability and Corrosion of Metals contacting Fire-Retardant-Treated (FRT) Lumber and Plywood

3. REFERENCED DOCUMENTS

- ANSI/UL 263, Fourteenth Edition(ASTM E119-15) Fire Tests of Building Construction and Materials
- ANSI/UL 723, Tenth Edition(ASTM E84), Standard for Test for Surface Burning Characteristics of Building Materials
- ANSI/UL790, Eighth Edition, (ASTM E108-11), Standard Test Methods for Fire Tests of Roof Coverings
- ANSI/UL 1897, Twelfth Edition, Uplift Tests for Roof Covering Systems
- ANSI/AWC NDSI-2015 National Design Specification (NDS) for Wood Construction
- ANSI/AWC NDSI-2012 National Design Specification (NDS) for Wood Construction
- ASTM D3201-13 and -08a, Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products
- ASTM D5516-09 and -03, Standard Test Method for Evaluating Properties of Fire-Retardant-Treated Softwood Plywood Exposed to Elevated Temperatures
- ASTM D5664-10 and -08, Standard Test Method for Evaluating Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant-Treated Lumber
- ASTM D6305-08, Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing
- ASTM D6841-08, Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber
- NFPA 285, Standard Fire Test for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Assemblies Containing Combustible Components
- ICC-ES Acceptance Criteria for Fire-Retardant-Treated Wood (AC66), dated June 2015
- ICC-ES Acceptance Criteria for Quality Documentation (AC10), dated June 2014

4. USES

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood is intended for use in interior applications not exposed to wetting where permitted in the code.

5. PRODUCT DESCRIPTION

5.1 General:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood is lumber and plywood that has been impregnated with the PYRO-GUARD® chemical by a pressure process to reduce combustibility. PYRO-GUARD® Fire-Retardant-Treated (FRT) lumber and plywood are intended for interior use, only. PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood is kiln-dried after treatment to moisture contents of 19 percent for lumber and 15 percent for plywood, as required in Section 2302.8 of the 2015 and 2012 IBC, Section R802.1.5.9 of the 2015 IRC, and Section R802.1.3.8 of the 2012 IRC.

5.2 Material Species:

The following species of PYRO-GUARD® treated lumber and plywood are covered under this report:

Lumber: Alpine Fir, Balsam Fir, Black Spruce, Douglas fir, Engelmann Spruce, Hem-Fir, Western Hemlock, Jack Pine, Lodgepole Pine, Ponderosa Pine, Red Spruce, Southern Pine, Spruce-Pine-Fir (SPF), White Fir, White Spruce

Plywood: Douglas fir, Lauan, and Southern Pine

5.3 Fasteners:

Metallic fasteners, fastening devices or components contacting PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood products shall comply with Section 2304.10.5 of the 2015 IBC, Section 2304.9.5 of the 2012 IBC, and Section R317.3.4 of the 2015 and 2012 IRC, or be made from metals listed in section 5.5 of this report. Use of uncoated carbon steel fasteners is permitted within the weather-protected building envelope when not exposed to damp or wet conditions.

Refer to Table 1 and Table 2 for adjustment factors for design and minimum fastener size.

5.4 Surface Burning Characteristics:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood covered under this report has a flame spread index of 25 or less and a smoke developed index of 450 or less, when tested in accordance with ANSI/UL 723 (ASTM E84) and did not show any evidence of significant progressive combustion when the test was continued for an additional 20-minute period. The flame front did not progress more than 10½ feet beyond the centerline of the burners at any time during the test. See Section 2303.2 of the 2015 IBC and the 2012 IBC, and Section R802.1.5 of the 2015 IBC and Section R802.1.3 of the 2012 IRC.

Refer to Section 8.5 for the UL Certification of PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood for surface burning characteristics.

5.5 Corrosivity:

Corrosion rates for aluminum, carbon steel, copper, galvanized steel, and red brass components in contact with PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood are not enhanced by the PYRO-GUARD® chemical treatment when used in assemblies when the manufacturer's instructions are followed.

5.6 Hygroscopicity:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood has a moisture content of less than 28 percent when tested in accordance with ASTM D3201 at 92 percent relative humidity, as specified in Section 2303.2.7 of the 2015 and 2012 IBC, Section R802.1.5.9 of the 2015 IRC, and Section R802.1.3.7 of the 2012 IRC.

6. DESIGN & INSTALLATION

6.1 General:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood must be designed and installed in accordance with the applicable codes and certifications referenced in this report, and the manufacturer's published installation instructions. Building construction elements supporting PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood must be designed in accordance with the standards referenced in the applicable code.

6.2 Structural Properties:

The lumber and plywood wood species listed in Section 5.2 of this report have been evaluated for structural performance for use in interior assemblies exposed to elevated temperatures due to cyclic climatic conditions. Excluded from the scope of this report are evaluations on the wood species intended for assemblies whose end-use includes exposure to continuous elevated temperatures. Proper use of lumber design values, adjustment factors, and plywood span ratings from Table 1 and Table 2 are to be employed.

6.2.1 Treated Plywood

The effects of treatment and re-drying, and exposure to high temperature and high humidity on the structural properties of PYRO-GUARD® FRT plywood have been evaluated in accordance with ASTM D5516 as required by Section 2303.2.5.1 of the 2015 and 2012 IBC, Section R802.1.5.6 of the 2015 IRC, and Section R802.1.3.5.1 of the 2012 IRC. This data was used to develop adjustment factors for untreated plywood design values in accordance with ASTM D6305.

Plywood manufactured from Southern pine and Douglas fir has been evaluated for structural performance for use in roof sheathing applications having service temperatures to 170°F. Refer to Table 1 for load span limitations.

6.2.2 Treated Lumber

The base design values found in the applicable National Design Specification (NDS) and NDS Supplement: Design Values for Wood Construction require adjustment to account for the fire-retardant treatment. The effects of treatment and re-drying, and exposure to high temperature and high humidity on the structural properties of PYRO-GUARD® FRT lumber has been evaluated in accordance with ASTM D5664 as required by Section 2303.2.5.2 of the 2015 and 2012 IBC, Section R802.1.5.7 of the 2015 IRC, and Section R802.1.3.5.2 of the 2012 IRC. This data was used to develop modification factors for each species of PYRO-GUARD® FRT lumber in accordance with ASTM D6841.

Dimensional lumber manufactured from Southern pine, Douglas fir, and other species listed in Section 5.2 has been evaluated for use as structural wall and floor framing members having service temperatures up to 100°F. Refer to Table 2 for applicable design value adjustment factors.

Dimensional lumber manufactured from Southern pine and Douglas fir has been evaluated for use as structural roof framing members having service temperatures up to 150°F. Refer to Table 2 for applicable design value adjustment factors.

6.3 Fire Resistance:

PYRO-GUARD® Fire-Retardant-Treated (FRT) wood has been evaluated for fire resistance in accordance with Section 703.2 of the 2015 and 2012 IBC, Section R302.1 of the 2015 and 2012 IRC, and ANSI/UL 263 (ASTM E119-15) when used as a part of UL Fire Resistance Designs V314 and V332.

Refer to section 8.4 of this report for the UL Certification of PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood for fire resistance assembly designs.

6.4 Roofing:

PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood for use in roofing assemblies has been evaluated in accordance with ANSI/UL 790 (ASTM E108) and by Section 1505.1 of the 2015 and 2012 IBC, Section R902.1 of the 2015 and 2012 IRC. In addition, PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood has been evaluated in accordance with ANSI/UL 1897 and Section 1504.3.1 of the 2015 and 2012 IBC.

Refer to sections 8.6 and 8.7 of this report for the UL Certification of PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood for roofing applications.

Minimum $^{15}/_{32}$ inch thick PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood may be used as a thermal barrier to protect foam plastic insulation as described in Section 2603.4.1.5 of the 2015 and 2012 IBC, Section R316.5.2 of the 2015 and 2012 IRC.

Use of PYRO-GUARD® Fire-Retardant-Treated (FRT) lumber and plywood in non-vented roofing assemblies is prohibited.

Refer to Table 1 for load span limitations.

6.5 Flooring:

Minimum $^{15}/_{32}$ inch thick PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood may be used as a thermal barrier to protect foam plastic insulation as described in Section 2603.4.1.14 of the 2015 and 2012 IBC, and Section R316.5.13 of the 2015 and 2012 IRC when the foam plastic insulation is exposed to the interior of the building. Refer to Table 1 for load span limitations.

6.6 Plywood Diaphragms and Shear Walls:

Wood-frame diaphragms are to be designed and constructed in accordance with Section 2306.2 of the 2015 and 2012 IBC.

Wood-frame shear walls are to be designed and constructed in accordance with Section 2306.3 of the 2015 and 2012 IBC.

When used, the thickness of PYRO-GUARD® Fire-Retardant-Treated (FRT) Plywood is to be increased by $^{1}/_{8}$ inch for the allowable shear values in Section 4.2 or 4.3 of AWC Special Design Provisions for Wind and Seismic (SDPWS) or as shown in Sections 2306.2 and 2306.3 of the 2015 and 2012 IBC. . As an alternate, design capacities for plywood shall be reduced to 90% of the allowable values prescribed in the applicable code when treated with PYRO-GUARD®. The span rating shall be as noted as per the evaluation report.

6.7 Exterior Walls Containing Combustible Components:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood has been evaluated as a component of UL Classified Exterior Wall Systems for use in exterior non-load-bearing wall assemblies containing combustible components in accordance with NFPA 285 as required by Section 2603.5 of the 2015 and 2012 IBC. Refer to section 8.8 of this report for the UL Certification of PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood for exterior wall system designs noted below.

FWFO.EWS0021 FWFO.EWS0024 FWFO.EWS0027 FWFO.EWS0030

7. CONDITIONS OF USE

7.1 General:

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood products described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 2 of this report, subject to the following conditions:

7.2 Materials and methods of installation shall comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this report, this report governs.

7.3 Where required by the building official, engineering calculations and details shall be provided. The calculations shall verify that the anchorage complies with the building code for the type of framing and condition of the supporting construction.

7.4 The engineering calculations are subject to the adjustment factors and span ratings in Table 1 and Table 2 used for lumber and plywood of those species noted herein.

7.5 PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood must not be used in contact with the ground or any application in which it will be permanently exposed to precipitation, direct or indirect wetting, condensation, or in an unvented roofing or roofing support assembly.

7.6 PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood may be field cut or ripped in any direction.

7.7 PYRO-GUARD® Fire-Retardant-Treated (FRT) lumber must not be milled or ripped in the field. However, bevels, end cuts, joints, laps, and scarfs may be fabricated.

7.8 PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood is manufactured by Hoover Treated Wood Products, Inc. under the UL LLC Listing/Classification and Follow-Up Service Program, which includes inspections in accordance with the quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10. Hoover's manufacturing locations covered by this report are located in:

- Bakersfield, CA
- Detroit, MI
- Milford, VA
- Oxford, PA
- Winston, OR
- Pine Bluff, AR
- Thomson, GA

8. SUPPORTING EVIDENCE

8.1 Data in accordance with ICC-ES Acceptance Criteria for Fire-Retardant-Treated Wood (AC66).

8.2 Data in accordance with ICC-ES Acceptance Criteria for Quality Documentation (AC10).

8.3 Manufacturer's descriptive product literature, including installation instructions.

8.4 See UL Online Certifications Directory for Fire-resistance Ratings in accordance with UL 263, Building Units (BZXX), and Framing Members (CIKV).

8.5 See UL Online Certifications Directory for Surface Burning Characteristics in accordance with UL 723, Treated Lumber (BPVV), and Treated Plywood (BUGV).

8.6 See UL Online Certifications Directory for Roofing Systems UL Classified in accordance with ANSI/UL 790 (TGFU).

8.7 See UL Online Certifications Directory for Roofing Systems, Uplift Resistance UL Classified in accordance with ANSI/UL 1897 (TGIK).

8.8 See UL Online Certifications Directory for Exterior Wall System Components UL Classified in accordance with ANSI/NFPA 285 (FWFO).

8.9 Data in accordance with ICC-ES Acceptance Criteria for Quality Documentation (AC10), dated June 2014.

8.10 Reports in accordance with ASTM D3201, Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products

8.11 Reports in accordance with ASTM D5516, Standard Test Method for Flexural Properties of Fire-Retardant-Treated Softwood Plywood Exposed to Elevated Temperatures

8.12 Reports in accordance with ASTM D5664, Standard Test Method for Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant-Treated (FRT) Lumber

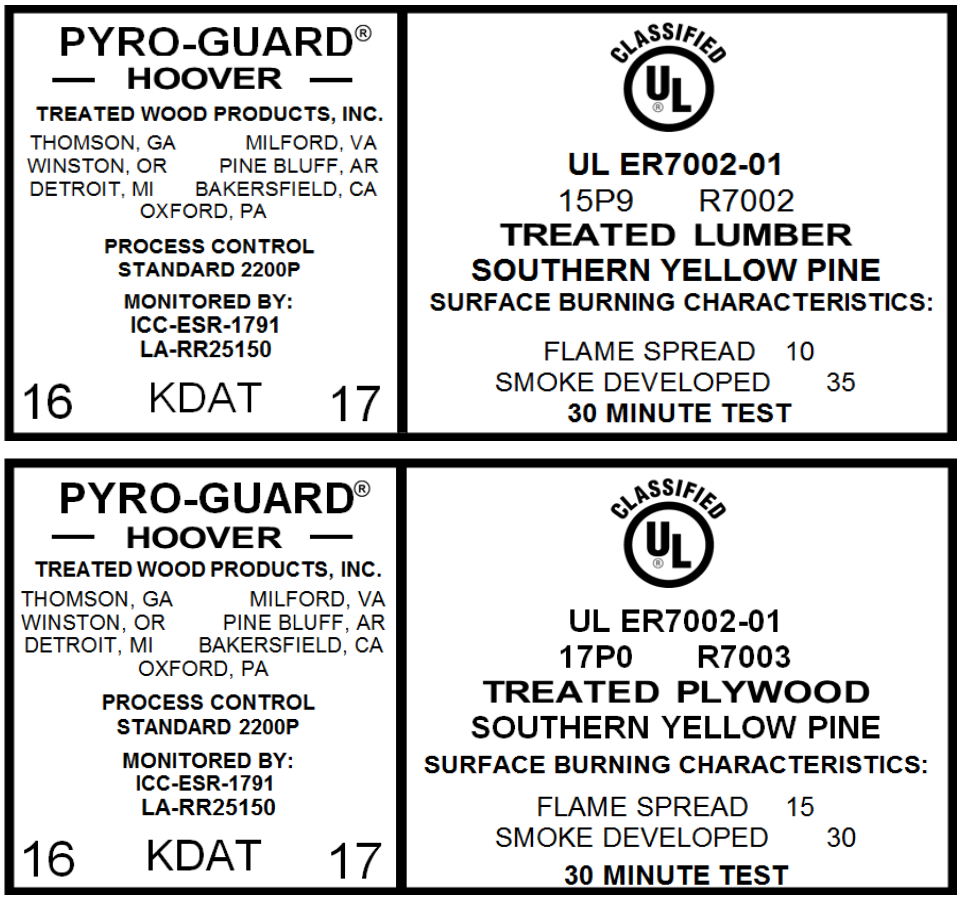
8.13 Reports in accordance with ASTM D6305, Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing

8.14 Reports in accordance with ASTM D6841, Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber

9. IDENTIFICATION

PYRO-GUARD® Fire-Retardant-Treated (FRT) Wood described in this evaluation report is identified by a marking bearing:

- The report holder's name, Hoover Treated Wood Products, Inc.
- The UL Listing/Classification Mark
- The plant identification
- The evaluation report number UL ER7002-01



The validity of the evaluation report is contingent upon this identification appearing on the product or product label or UL Listing/Classification Mark/Certification Mark.

10. USE OF UL EVALUATION REPORT

10.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.

10.2 UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

10.3 The current status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via our On-Line Certifications Directory at **www.UL.com/erdirectory**.

Table 1

Maximum Loads and Spans for PYRO-GUARD® FRT Plywood at Service Temperatures to 170°F

Panel/Sheathing Thickness	Span Rating for Untreated Roof/Sub-floor Sheathing	PYRO-GUARD® Plywood Maximum Live Load (psf)				PYRO-GUARD® Wall/Subfloor Sheathing
		Span (inches)	Climate Zone			Span (inches)
			1A	1B	2	
$^{15}/_{32}$, $^{1}/_{2}$	32/16	24	19	30	43	16
$^{19}/_{32}$, $^{5}/_{8}$	40/20	24 32	42 20	64 32	87 45	20 20
$^{23}/_{32}$, $^{3}/_{4}$	48/24	32 48	34 10	51 18	71 27	24 24
$^{7}/_{8}$		48	12	20	30	
$1^{1}/_{8}$		48	21	33	47	48

[1]Reduction values based on ANSI/AWC NDSI National Design Specification for Wood Construction (NDS)

[2]Loads based on two-span condition with panels minimum 24 inches wide and the strength axis is perpendicular to the framing

[3]Fastener size and spacing must follow the applicable code for untreated plywood of the same thickness

[4]Roof deck sheathing fasteners must be minimum 8d nails spaced maximum 6 inches o.c. at board edge and maximum 12 inches o.c. at supports for panels spanning 24 and 32 inches.

[5]Roof deck sheathing fasteners must be minimum 8d nails spaced maximum 6 inches o.c. at board edge and at supports for panels spanning 48 inches.

[6]Other roof deck sheathing fasteners, excluding staples, having equivalent withdrawal and lateral load resistance to those above are allowed at maximum spacings.

[7]Minimum 10d nails must be used for $1^{1}/_{8}$ inch thick roof sheathing panels.

[8]Roof spans and ratings apply to roof systems having the minimum ventilation areas required by the applicable code. 50% of the required vent area must be located on the upper portion of sloped roofs for proper air flow to the unexposed side of the roof deck.

[9]Rigid insulation, minimum R-value 4, or the next thicker sheathing panel for the tabulated span and load, must be used for low-slope assemblies having membrane or built-up roof covering systems having a perm rating less than 0.2. A continuous air barrier and vapor retarder must be used between the ceiling framing and the interior ceiling finish.

[10]For unblocked roof framing diaphragm systems, panel edge clips for the plywood thickness used are required for roof sheathing at midspan between supports for 24 inch and 32 inch spans and two at points $^{1}/_{3}$ the distance between supports for 48 inch spans

[11]Tabulated loads for Zone 1A are based on duration of load adjustment for 7-day loads of 1.25

[12]Tabulated loads for Zone 1B and Zone 2 are based on duration of load adjustment for snow of 1.15.

[13]All values in the table are based on a dead load (DL) of 8 psf.

[14]The tabulated live load may be adjusted accordingly for dead loads greater or less than 8 psf.

[15]Applicable material weights: asphalt shingles- 2 psf, ½ inch performance plywood-1.5 psf, $^{5}/_{8}$ inch performance plywood-1.8 psf, ¾ inch performance plywood-2.2 psf.

[16]Climate Zones defined:

Zone 1 – Minimum design roof live load or maximum snow load up to 20 psf

A – Southwest Arizona, Southeast Nevada (bounded by Las Vegas, Yuma, Tucson, and Phoenix)

B – All other qualifying areas of the continental United States

Zone 2 – Minimum ground snow load over 20 psf

[17]PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood must not be used as roof sheathing over a radiant barrier.

[18]The $^{19}/_{32}$ inch and $^{5}/_{8}$ inch performance category plywoods are limited to 4-ply and 5-ply product.

[19]The $^{23}/_{32}$ inch and $^{3}/_{4}$ inch performance category plywoods are limited to 5-ply and 7-ply product

[18]Subfloor applications other than $1^{1}/_{8}$ inch thick panels are limited to 100 psf maximum live load.

[19]Subfloor applications using $1^{1}/_{8}$ inch thick panels are limited to 65 psf maximum live total load at 48 inch spans.

[20]Deflection of roof sheathing at the tabulated maximum live load is less than $^{1}/_{240}$ of the span and is under the maximum live load plus the dead load is less than $^{1}/_{180}$ of the span.

[21]Staples used to attach asphalt shingles must be minimum $^{15}/_{16}$ inch crown and minimum 1 inch leg, or comply with the applicable code. Fastener quantity is to be adjusted in accordance with Table 2.

[22]The use of PYRO-GUARD® Fire-Retardant-Treated (FRT) wood products used in exterior was assemblies requires a water-resistive barrier on the outside of the wall during construction.

[23]For diaphragm and shear wall design, increase the minimum nominal panel thickness required for untreated plywood by a minimum thickness of $^{1}/_{8}$ inch when PYRO-GUARD® Fire-Retardant-Treated (FRT) plywood is used.

Table 2
Design Value Adjustment Factors for PYRO-GUARD® FRT Lumber

Physical Property	PYRO-GUARD® Wall/Floor Service Temperature to 100°F			PYRO-GUARD® Roof Framing Service Temperature to 150°F					
	Douglas Fir	Southern Pine	Other Species	Douglas Fir			Southern Pine		
				Climate Zone			Climate Zone		
				1A	1B	2	1A	1B	2
Extreme Fiber Stress in Bending, F_b	0.97	0.91	0.88	0.90	0.93	0.96	0.80	0.85	0.89
Tension Parallel to Grain, F_t	0.95	0.88	0.83	0.80	0.87	0.93	0.80	0.84	0.88
Compression Parallel to Grain, F_c	1.00	0.94	0.94	0.94	0.98	1.00	0.94	0.94	0.94
Horizontal Shear, F_v	0.96	0.95	0.93	0.95	0.95	0.96	0.92	0.93	0.94
Modulus of Elasticity, E	0.96	0.95	0.94	0.96	0.96	0.96	0.95	0.95	0.95
Compression Perpendicular to Grain, F_{cz}	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fasteners/Connections	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90

[1]Reduction values based on ANSI/AWC NDSI National Design Specification for Wood Construction (NDS)

[2]Climate Zones defined:

Zone 1 – Minimum design roof live load or maximum snow load up to 20 psf

A – Southwest Arizona, Southeast Nevada (bounded by Las Vegas, Yuma, Tucson, and Phoenix)

B – All other qualifying areas of the continental United States

Zone 2 – Minimum ground snow load over 20 psf

[3]Duration of load adjustments for snow loads, 7-day loads, and wind loads from National Design Specifications for Wood Construction apply.

[4]Where lumber decking serves both as the exposed ceiling and roofing sheathing, extreme fiber bending adjustments of 0.83, 0.84, and 0.89 must be used for southern pine in Zone 1A, Zone 1B, and Zone 2, respectively.

[5]Where lumber decking serves both as the exposed ceiling and roofing sheathing, extreme fiber bending adjustments of 0.92, 0.92, and 0.96 must be used for Douglas fir in Zone 1A, Zone 1B, and Zone 2, respectively.

[6]Extreme fiber in bending adjustments of 0.91 for Southern pine and 0.97 for Douglas fir are permitted in all zones where insulation having a minimum R value of 4 is installed above the decking.

[7]Roof framing adjustment factors apply to roof systems with minimum ventilation areas as per the applicable code. 50 percent of the required vent area is to be on the upper portion of sloped roofs to provide natural air flow.

[8]Other species refers to those other than Southern pine and Douglas fir referenced in this report.

SAFETY DATA SHEET (SDS) for *PYRO-GUARD*® TREATED WOOD

Meets Requirements of OSHA's 29 CFR 1910.1200 (7-1-13 Edition)

SECTION I - Identification

(a) Product identifier used on the label; ***PYRO-GUARD***®

(b) Other means of identification; Ink stamp on Plywood, Lumber or Timbers.

(c) Recommended use of the chemical and restrictions on use; Fire Retardant Treated Wood (FRTW) – Used in areas not exposed to the weather or wetting where the code permits the use of wood or fire-retardant-treated wood.

(d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party;

MANUFACTURER	
Hoover Treated Wood Products, Inc. 154 Wire Road Thomson, Georgia 30824 706-595-5058	 www.frtw.com

(e) Emergency phone number. 706-595-7355

SECTION II – Hazard(s) Identification

(a) Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

All classifications have been performed considering sawing, grinding, drilling, sanding or machining of the product has taken place and wood dust, sawdust, and small wood chips are present. Only "**Softwoods**" are used in the production of the product. So data derived from "**Hardwoods**" studies has not been considered.

Acute Toxicity – N/A
Skin Corrosion/Irritation – Irritant, category 2[3]
Serious Eye Damage/Eye Irritation – Irritant, category 2B
Respiratory or Skin Sensitization:
    Respiratory Sensitizer, category 1, sub-category 1B
    Skin Sensitizer, category 1, sub-category 1B
Germ Cell Mutagenicity – N/A
Carcinogenicity – Carcinogen, category 2
Reproductive Toxicity – N/A
Specific Target Organ Toxicity Single Exposure – N/A
Specific Target Organ Toxicity Repeated or Prolonged Exposure – N/A
Aspiration Hazard – N/A
Explosives – N/A
Flammable Gases – N/A
Flammable Aerosols – N/A
Oxidizing Gases – N/A
Gases Under Pressure – N/A
Flammable Liquids – N/A
Flammable Solids – Readily Combustible Solids, category 2

Self-Reactive Chemicals – N/A
Pyrophoric Liquids – N/A
Pyrophoric Solids – N/A
Self-Heating Chemicals – N/A
Chemicals Which, In Contact With Water, Emit Flammable Gases – N/A
Oxidizing Liquids – N/A
Oxidizing Solids – N/A
Organic Peroxides – N/A
Corrosive to Metals – N/A

N/A = Not Applicable

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of § 1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones);

Warning Causes Skin Irritation

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Wash all body parts which have come into contact with any sawdust generated from sawing, grinding, drilling, sanding, or machining thoroughly after handling. **Wear protective gloves. Any type that creates a barrier is acceptable – Selection should be oriented to decrease contact with splinters and slivers of wood.**	**If on skin: Wash with plenty of water and soap.** **If skin irritation occurs: Get medical advice.** **Take off contaminated clothing and wash it before reuse.**		

Warning Causes Eye Irritation

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Wash all body parts which have come into contact with any sawdust generated from sawing, grinding, drilling, sanding, or machining thoroughly after handling.	**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.** **If eye irritation persists: Get medical advice.**		

Danger May Cause Allergy Or Asthma Symptoms Or Breathing Difficulties If Inhaled

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Avoid breathing dust. **In case of inadequate ventilation wear respiratory protection.** **Adequate ventilation is considered that which keeps exposure limits at or below 15mg/m^3**	**If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.** **If experiencing respiratory symptoms: Call a poison center.**  **For a poison emergency in the U.S. call 1-800-222-1222**		**Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.**

Warning May Cause An Allergic Skin Reaction

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Avoid breathing dust. **Contaminated work clothing must not be allowed out of the workplace** **Wear protective gloves.** **Any type that creates a barrier is acceptable – Selection should be oriented to decrease contact with splinters and slivers of wood.**	**If on skin: Wash with plenty of water and soap.** **If skin irritation occurs: Get medical advice.** **Wash contaminated clothing before reuse.**		**Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.**

Warning Suspected Of Causing Cancer Of The Upper Respiratory System

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Obtain special instructions before use. **Do not handle until all safety precautions have been read and understood.** **Wear protective gloves and eye protection.** **Acceptable gloves are any type that creates a barrier – Glove selection should be oriented to decrease contact with splinters and slivers of wood.**	**If exposed or concerned: Get medical advice.**	**Store locked up.**	**Dispose of contents in accordance with all applicable local, regional, national, or international rules and regulations.**

Warning Flammable Solid

Precautionary Statements			
Prevention	**Response**	**Storage**	**Disposal**
Keep away from heat, sparks, open flames and hot surfaces. - No smoking. **Ground or Bond container and receiving equipment.** **Use explosion-proof electrical, ventilating, lighting, and processing equipment.** **Wear protective gloves and eye protection.** **Acceptable gloves are any type that creates a barrier – Glove selection should be oriented to decrease contact with splinters and slivers of wood.**	**In case of fire: Use water or wood appropriate fire extinguishers to extinguish.**		

(c) Describe any hazards not otherwise classified that have been identified during the classification process;

If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air.

> The Occupational Safety and Health Administration (OSHA) in the United States defines combustible dust as *"a solid material composed of distinct particles or pieces, regardless of size, shape, or chemical composition, which presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations"*.
>
> Dust particles with an effective diameter of less than 420 microns (those passing through a U.S. No. 40 standard sieves) should be deemed to meet the criterion of the definition.

(d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

N/A

SECTION III - Composition/Information on Ingredients

Except as provided for in paragraph (i) of §1910.1200 on trade secrets:
For Substances
(a) Chemical name;
(b) Common name and synonyms;
(c) CAS number and other unique identifiers;
(d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.
For Mixtures
In addition to the information required for substances:
(a) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of §1910.1200 and
(1) Are present above their cut-off/concentration limits; or
(2) Present a health risk below the cut-off/concentration limits.
(b) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of §1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures (See A.0.5.1.2) with similar chemical composition. In these cases, concentration ranges may be used.
For All Chemicals Where a Trade Secret is Claimed
Where a trade secret is claimed in accordance with paragraph (i) of §1910.1200, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

See Below For Requirements –

Chemical, Common or Synonyms Name	Approximate %	CAS #
Wood (mainly softwoods such as pine)	90% to 98%	None
Monosodium Phosphate Sodium Phosphate (monobasic) Sodium Dihydrogen Phosphate Dihydrogen Sodium Phosphate	1% to 3%	7558-80-7
Sodium Tetraborate Decahydrate 10 Mol Borax	0.25% to 1.5%	1303-96-4
Boric Acid	0.25% to 1.5%	10043-35-3
Urea Phosphate	1% to 3%	4861-19-2
Tetrachloroisophthalonitrile Chlorothalonil Daconil	0.00% to 0.03%	1897-45-6
5-Chloro-2-methly-4-Isothiazolin-3-one methylchloroisothiazoline	≤ 0.01%	26172-55-4
2-Methyl-4-Isothiazolin-3-one Methylisothiazolinone	≤ 0.01%	2682-20-4
Magnesium Nitrate	≤ 0.01%	10377-60-3
Engineered Wood Products may contain bonding agents such as phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin and other ingredients below reportable levels	Balance	

SECTION IV – First-aid Measures

(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion;

First Aid Procedures

First Aid for Inhalation: – If inhalation symptoms appear remove from area of exposure and monitor. If persistent irritation, severe coughing, allergic-type responses or breathing difficulty occurs, get medical attention.

First Aid for Skin Contact: – If skin contact symptoms appear remove from area of exposure and monitor. Remove contaminated clothing. Wash affected area with soap and water. If irritation persists after washing, get medical attention.

First Aid for Eye Contact: – Wood dust may cause mechanical irritation. Treat dust in eye as foreign object. Remove contact lenses if worn. Flush eyes with large amounts of water to remove dust particles. Do not rub the eyes. Seek medical attention if irritation persists.

First Aid for Ingestion: – Not applicable under normal use, and considered unlikely. If occurred - Do not induce vomiting unless directed by a medical care giver, drink water. Never give anything by mouth to an unconscious person. Seek medical advice.

Notes to Physician: – All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

(b) Most important symptoms/effects, acute and delayed.

Potential Health Effects

Inhalation

Wood dust may cause nasal dryness, irritation, coughing and sinusitis. Repeated exposures (even below 15 mg/m3) to certain wood dusts such as Western Red Cedar, can produce allergic responses in some sensitive individuals. Wood dust can be irritating to eyes, nose and respiratory tract following prolonged exposure.

Skin Contact

Various species of wood dust may evoke allergic contact dermatitis in sensitized individuals. If an allergy preexists or develops, it may be necessary to remove the sensitized worker from further exposure to wood dust or wood-based products. The chemical components may cause slight to mild irritation.

Eye Contact

Dust or splinters may cause irritation or injury to the eyes. The chemical components can cause burning sensation, tearing, and redness.

Ingestion

Not applicable under normal use, and considered unlikely. If occurred may result in irritation of the digestive tract.

(c) Indication of immediate medical attention and special treatment needed, if necessary.

N/A

SECTION V – Fire-fighting Measures

(a) Suitable (and unsuitable) extinguishing media.

FIRE EXTINGUISHING MEDIA: Water, foam or Fire Extinguishers designated for wood. Partially burned dust is especially hazardous if dispersed into the air. Remove burned or wet dust to open area after fire is extinguished.

(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).

EXPLOSIVE LIMITS: Sawing, sanding or machining wood products can produce wood dust as a by-product. Wood dust is a strong to severe explosion hazard if a dust "cloud" contacts an ignition source. 212°F (100°C) has been suggested as the upper temperature limit for continuous exposure for wood without risk of ignition (wood dust may require a still lower temperature). An airborne concentration of 40 grams of dust per cubic meter of air is often used as the lowest explosion limit (LEL) for wood dust.

HAZARDOUS COMBUSTION PRODUCTS: Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes and organic acids. Chemical treatment has little or no effect on the above possibilities from untreated wood.

AUTOIGNITION TEMPERATURE: Unknown (Chemical Treatment Retards).

(c) Special protective equipment and precautions for fire-fighters.

None

SECTION VI - Accidental Release Measures

(a) Personal precautions, protective equipment, and emergency procedures.
(b) Methods and materials for containment and cleaning up.

Not applicable for product in purchased form. Sweep or vacuum up sawdust for recovery or disposal. Wood dust clean-up and disposal activities should be accomplished in a manner to minimize creation of airborne dust.

SECTION VII - Handling and Storage

(a) Precautions for safe handling.
(b) Conditions for safe storage, including any incompatibilities.

HANDLING:

Protective Gloves – Work gloves are recommended to avoid splinters.

Eye Protection – Safety goggles or glasses are recommended when machining to protect against sawdust and flying wood particles.

Protective Clothing or Equipment – Recommended as typical with any wood working.

Work/Hygienic Practices - Practice good hygiene, wash hands after use and before eating, drinking or using tobacco products.

STORAGE:

No ground contact allowed. Product is shipped dry and should not be exposed to the weather. Water spray may be used to wet down wood dust generated by sawing, grinding, drilling, sanding or machining to reduce the likelihood of ignition or dispersion of dust into the air.

SECTION VIII - Exposure Controls/Personal Protection

(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

(b) Appropriate engineering controls.
(c) Individual protection measures, such as personal protective equipment.

EXPOSURE GUIDELINES:

Chemical	OSHA PEL	ACGIH TLV
Wood (mainly softwoods such as pine)	15 mg/m^3 TWA (Listed under Particulates Not Otherwise Regulated - Total dust) 5 mg/m^3 TWA Respirable Fraction	1 mg/m^3 TWA* *Inhalable Fraction
Monosodium Phosphate	None Listed	None Listed
Sodium Tetraborate Decahydrate	None Listed	2 mg/m^3 TWA* 6 mg/m^3 STEL* *Inhalable Fraction (TLV listed under Borate compounds, Inorganic)
Boric Acid	None Listed	2 mg/m^3 TWA* 6 mg/m^3 STEL* *Inhalable Fraction (TLV listed under Borate compounds, Inorganic)
Urea Phosphate	None Listed	None Listed
Tetrachloroisophthalonitrile	None Listed	None Listed
5-Chloro-2-methly-4-Isothiazolin-3-one	None Listed	None Listed
2-Methyl-4-Isothiazolin-3-one	None Listed	None Listed
Magnesium Nitrate	None Listed	None Listed
Engineered Wood Products may contain bonding agents such as phenol, phenol resorcinol, melamine formaldehyde-based, or polyvinyl acetate resin and other ingredients below reportable levels	Unknown	Unknown

ENGINEERING CONTROLS: Due to the explosive potential of wood dust when suspended in air, precautions should be taken during sawing, grinding, drilling, sanding or machining of wood products to prevent sparks or other ignition sources in ventilation equipment. Use of totally enclosed motors is recommended. Provide local exhaust as necessary to meet OSHA requirements for airborne exposure limits.

INDIVIDUAL PROTECTION MEASURES:

RESPIRATORY PROTECTION: When sawing, grinding, drilling, sanding or machining, a dust mask is recommended. Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed.

VENTILATION REQUIREMENTS: In enclosed environments, ventilation may be required in order to maintain exposure limits.

PROTECTIVE GLOVES: Not required. However, cloth, canvas, or leather gloves are recommended to minimize potential splinters, slivers or mechanical irritation when handling product or wood dust generated from the product.

EYE PROTECTION: Googles or safety glasses are recommended when excessive exposures to wood dust may occur (e.g. during clean up).

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As necessary to limit exposure when handling the product or wood dust generated from the product.

WORK/HYGIENIC PRACTICES: Follow good hygienic and housekeeping practices. Clean up areas where wood dust settles to avoid excessive accumulation of this combustible material. Minimize compressed air blow down or other practices that generate high airborne-dust concentrations. Do not handle material near food, feed or drinking water. Use good personal hygiene. Wash hands before eating or smoking.

SECTION IX - Physical and Chemical Properties

(a) Appearance (physical state, color, etc.);

(b) Odor;

If plywood - Rigid panel usually ½" to ¾" thick and 4'width and 8' length. If Lumber – Plank usually 2" nominal thickness but can vary from ½" to 4" with widths varying from 2" to 12" wide and lengths normally from 6 to 18 feet. If Timbers – Thickness is greater than 4" and widths and lengths vary. Color and odor are dependent upon wood specie. Chemical treatment only darkens the woods natural color.

(c) Odor threshold; N/A

(d) pH; N/A

(e) Melting point/freezing point; N/A

(f) Initial boiling point and boiling range; N/A

(g) Flash point; N/A

(h) Evaporation rate; N/A

(i) Flammability (solid, gas); Wood Dust Combustible

(j) Upper/lower flammability or explosive limits; Wood Dust ≥ 40 g/m^3

(k) Vapor pressure; N/A

(l) Vapor density; N/A

(m) Relative density; Variable - Dependent on wood species and moisture content (typically 22 – 37 lbs/ft^3)

(n) Solubility(ies); Chemical treatment might be leachable under extreme wetness which is not allowed

(o) Partition coefficient: n-octanol/water; N/A

(p) Auto-ignition temperature; Auto-ignition Temperature is ≥ 572 F

(q) Decomposition temperature; ≥ 572 F

(r) Viscosity. N/A

SECTION X - Stability and Reactivity

(a) Reactivity; N/A

(b) Chemical stability; Stable under normal conditions. Wood dust generated from sawing, grinding, drilling, sanding or machining the product is combustible. Keep in cool, dry place away from ignition sources.

(c) Possibility of hazardous reactions; None Known

(d) Conditions to avoid (e.g., static discharge, shock, or vibration); Large accumulations of air-borne wood dust. Product in direct ground contact. Product becoming wet.

(e) Incompatible materials; Oxidizing agents, Drying Oils, Strong Bases, and Reducing Agents.

(f) Hazardous decomposition products. Thermal-oxidative degradation, or burning, of wood can produce irritating and potentially toxic fumes and gases including carbon monoxide, aldehydes, oxides of sodium, oxides of phosphorus. Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

SECTION XI - Toxicological Information

Description of the various toxicological (health) effects and the available data used to identify those effects, including:
(a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
(b) Symptoms related to the physical, chemical and toxicological characteristics;
(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;
(d) Numerical measures of toxicity (such as acute toxicity estimates).
(e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

PRODUCT AS PRODUCED:
Is an article and no toxicological information is available.

OSHA: Wood products are not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, wood dust generated by sawing, sanding or machining this product may be hazardous.

COMPONENTS:

Monosodium Phosphate (Acute Toxicity) -

Eye Effects: Slightly irritating (Rabbit, 12.6/110.0, 1 hour exp) - 150 mg (std. Draize), Rabbit.
Skin Effects: Practically Nonirritating (Rabbit, 0.0/0.8, Avg. Max)
Ingestion Effects: Practically Nontoxic (Rat LD_{50} - 8290 mg/kg)

Sodium Tetraborate Decahydrate (Acute Toxicity) -

Ingestion: Low acute oral toxicity; LD_{50} in rats is 4,500 to 5,000 mg/kg of body weight.
Skin/dermal: Low acute dermal toxicity; LD_{50} in rabbits is greater than 10,000 mg/kg of body weight.
Inhalation: Low acute inhalation toxicity; LC_{50} in rats is greater than 2.0 mg/L (or g/m^3)
Eye irritation: Draize tests in rabbits produced eye irritation effects. Years of occupational exposure to Sodium Tetraborate Decahydrate indicates no adverse effects on human eye.

Boric Acid (Acute Toxicity) -

Ingestion: Low acute oral toxicity; LD_{50} in rats is 3,500 to 4,100 mg/kg of body weight.
Skin/dermal: Low acute dermal toxicity; LD_{50} in rabbits is greater than 2,000 mg/kg of body weight.
Inhalation: Low acute inhalation toxicity; LC_{50} in rats is greater than 2.0 mg/L (or g/m^3)
Eye irritation: Draize tests in rabbits produced mild eye irritation effects. Years of occupational exposure to Boric Acid indicates no adverse effects on human eye.

Diurea Phosphate (Acute Toxicity) -

Ingestion Effects: Low acute oral toxicity; LD_{50} in rats is 5,840 mg/kg of body weight.

Chlorothalonil (Acute Toxicity) -

Ingestion: Low acute oral toxicity; LD_{50} in rats is 4,200 mg/kg of body weight. Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Can result in some corrosive action to the mouth, throat, esophagus, and stomach tissue. Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Metabolism studies have demonstrated that the rat metabolizes chlorothalonil to form metabolites that are toxic to kidney mitochondria. Much lower levels (150 to >2000 fold) of these metabolites are formed in dogs and monkeys, thus, effects seen in rats may not translate to man. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established on rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.
Skin/dermal: Low acute dermal toxicity; LD_{50} in rabbits is greater than 2,000 mg/kg and less than 20,000 mg/kg of body weight. Repeated or excessive dermal exposure may cause marked skin irritation. On overexposed skin, may cause moderate irritation, redness, and a flaky rash may result. Skin rash is seldom observed if the following recommended safeguards are followed:

Wear rubber gloves when handling, using, or applying this product. Special precautions should be taken to ensure that material cannot get inside gloves. Wear long-sleeved shirts, long pants, and rubber boots or disposable coveralls when handling this product.
Inhalation: LC_{50} in rats is greater than 0.20 mg/L and less than 2.1 mg/L (or g/m^3).
Eye irritation (Rabbit/Monkey): Reversible corneal, iridal and conjunctival effects. Maximum mean score (noted at 24 hours): Rabbit = 23.3/110 Monkey = 25.3/110. Human experience indicates that this product may cause mild to severe irritation, depending on the degree of exposure.

The Following Are Taken As A Group:
5-Chloro-2-methly-4-Isothiazolin-3-one
2-Methyl-4-Isothiazolin-3-one
Magnesium Nitrate
(Acute Toxicity) -

The below statements are with the above components at 10.6%, 3.5% and 15.0% respectively; numerous times the actual present in the product.

ROUTES OF ENTRY: Inhalation, dermal absorption, skin contact and eye contact.
SIGNS AND SYMPTOMS OF ACUTE OVEREXPOSURE:

Eyes - Corrosive to eyes. Severely irritating to the eyes and may cause eye burns. May cause permanent eye injury.

Skin - Corrosive to the skin. Severely irritating to the skin and may cause chemical burns to the skin. May cause allergic skin sensitization of susceptible persons. May be fatal if absorbed through the skin.

Ingestion - May be harmful or fatal if swallowed. Ingesting may produce chemical burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Inhalation - Harmful if inhaled. Inhalation of vapors, mists or sprays can cause irritation or burns of the nose, throat and lungs.

CHRONIC OVEREXPOSURE: Allergic contact dermatitis observed. Collective data indicate non-mutagenic; not teratogenic.

CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?:

- NATIONAL TOXICOLOGY PROGRAM (Y/N): N
- IARC MONOGRAPHS (Y/N) N
- OSHA (Y/N) N:

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/A

TOXICOLOGICAL DATA:

Dermal LD50 - rabbit: > 1,000 mg/kg
Oral LD50 - rat: 481 mg/Kg
Eye Irritation - rabbit: corrosive
Skin Irritation - rabbit: corrosive
Inhalation LC50 (4hr) – 1.23 mg/l (aerosol)

WOOD DUST (softwood or hardwood) -

OSHA Hazard Rating = 3.3; moderately toxic with probable oral lethal dose to humans being 0.5-5 g/kg (about 1 pound for a 150 pound person) Source: *OSHA Regulated Hazardous Substances*, Government Institutes, Inc., February 1990.

Wood dust generated from sawing, grinding, drilling, sanding or machining may cause nasal dryness, irritation, coughing and sinusitis. NTP and IARC classify wood dust as a human carcinogen (IARC Group 1). This classification is based primarily on increased risk in the occurrence of adenocarcinomas of the nasal cavities and paranasal sinuses associated with exposure to wood dust. The evaluation did not find sufficient evidence to associate cancers of the oropharynx, hypopharynx, lung, lymphatic and hematopoietic systems, stomach, colon or rectum with exposure to wood dust.

SECTION XII - Ecological Information

(a) Ecotoxicity (aquatic and terrestrial, where available); Not available

(b) Persistence and degradability;
(c) Bioaccumulative potential;

Environmental fate of wood dust would be expected to be biodegradable.

(d) Mobility in soil; N/A

(e) Other adverse effects (such as hazardous to the ozone layer). None Known

SECTION XIII - Disposal Considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of material according to Local, State, Federal, and Provincial Environmental Regulations.

The producer has made a determination that this product is not considered hazardous waste under Federal hazardous waste regulations 40 CFR Part 261. Incinerate or landfill in accordance with Local, State, and Federal regulations.

SECTION XIV – Transport Information

(a) UN number;
(b) UN proper shipping name;
(c) Transport hazard class(es);
(d) Packing group, if applicable;
(e) Environmental hazards (e.g., Marine pollutant (Yes/No));
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

This product is not regulated as a dangerous good or hazardous material by the U.S. Department of Transportation (DOT).

SECTION XV - Regulatory Information

Safety, health and environmental regulations specific for the product in question.

Toxic Substance Control Act (TSCA): N/A

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): N/A

Domestic Substance List (DSL): N/A

OSHA: Wood products per se are not hazardous under the criteria of the federal OSHA Hazard Communication Standard 29CFR 1910.1200. However, wood dust generated by sawing, sanding or machining wood products may be hazardous and hence included under 1910.1200.

STATE RIGHT-TO-KNOW:
California Prop 65:
Warning: Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer.
Pennsylvania – When cut or otherwise machined, wood products may emit wood dust. Wood dust appears on Pennsylvania's Appendix A, Hazardous Substance List.
New Jersey – When cut or otherwise machined, wood products may emit wood dust. Wood dust appears on New Jersey's Environmental Hazardous Substance List.

Section 302 extremely hazardous substance: No regulated ingredients.

SARA 313 Information: This product contains one chemical ingredient with known CAS number that exceed the de minimis reporting levels established by SARA Title III, section 313 and 40 CFR section 372. This is Chlorothalonil.

SARA 311/312 Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under SARA Title III Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

An immediate (acute) health hazard	Yes
A delayed (chronic) health hazard	Yes
A corrosive hazard	No
A fire hazard	No
A reactivity hazard	No
A sudden release hazard	No

FDA: Not intended for use as a food additive or indirect food contact item.

SECTION XVI - Other Information

The date of preparation of the SDS or the last change to it.

Current Issue: 08/01/2014
Previous Issue: None

User's Responsibility: The information contained in this Safety Data Sheet is based on the experience of health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if the product is suitable for its proposed application(s) and to follow necessary safety precautions. The user has the responsibility to make sure that this SDS is the most up-to-date issue.

NOTICE: Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Hoover Treated Wood Products, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will Hoover Treated Wood Products, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon this information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.