FLAME TECH™

Specification for FlameTech™ Fire Retardant Treated Wood

AWPA U1, Commodity Spec H, UCFA (Interior FRTW) Lumber & Plywood

Section 1 – Code Compliance & Product Identification

1. Lumber and plywood bearing the FlameTech™ Interior FRTW mark has a flame spread rating of 25 feet or less and smoke developed of 450 or less (Class-A) when tested in accordance with ASTM E84 "Surface Burning Characteristics of Building Materials"; exhibits no evidence of significant progressive combustion when the test is extended for an additional 20-minutes and the flamefront progression is no more than 10-1/2 feet in accordance with (IAW) ASTM E2768 "Extended Duration Surface Burning Characteristics of Building Materials". The flamespread and smoke developed index for each species and product are classified by Intertek and meets Section 2303.2 of the IBC (International Building Code) and Section R802.1.5 [R802.1.3] of the IRC (International Residential Code).

2. FlameTech™ Interior FRTW is manufactured at the facility of the treater(s) noted in Table 5 of Intertek Code Compliance Research Report (CCRR) 1088 under a quality-control program with inspections by Intertek Testing Services NA, Inc. (AA-647) and each treated article shall bear the *Intertek ETL* mark as required by Section 2303.2.4 of the IBC indicating compliance with Section 2303.2 of the IBC (i.e. ASTM E84 & ASTM E2768 ~ Extended 30-Minute Test).

3. FlameTech™ Interior FRTW shall be kiln-dried after treatment (KDAT) to a maximum moisture content of 19% for lumber and 15% for plywood. Intertek shall monitor the KDAT process and their *ETL* mark shall appear on the permanent product stamp applied during manufacturing.

4. FlameTech™ Interior FRTW shall be produced IAW Intertek CCRR-1088 - latest version.

5. FlameTech™ Interior FRTW meets the performance requirements of AWPA U1, Commodity Specification H for Use Category UCFA as an Interior Fire Retardant Treated Wood product.

Section 2 – Fire Retardant Treatment & Applications

1. Treatment shall be FlameTech™ as manufactured by Performance Formulation Solutions, LLC. (PFS).

2. FlameTech™ FRTW is an Interior, Class-A fire retardant treated wood product with individual surface burning characteristics for the species and products listed under Section 3.1 of Intertek CCRR-1088.

3. Structural performance of FlameTech™ Interior FRTW has been evaluated IAW ASTM D5664 for lumber and ASTM D5516 for plywood. Evaluation of plywood data is calculated IAW ASTM D6305. Evaluation of lumber data is calculated IAW ASTM D6841. The resulting design value and span rating adjustments are published in Intertek CCRR-1088, which includes evaluation of strength testing for roof sheathing applications up to 170°F (77°C).

4. Plywood shear walls. FlameTech™ Interior FRTW Plywood may be used as a component of a shear wall following the AWC Special Design Provisions for Wind and Seismic (SDPWS) Section 4.2 and 4.3, or Sections 2306.2 and 2306.3 of the IBC, in either case, the nominal panel thickness is increased by 1/8" inch for the tabulated allowable shear values.

5. Fire-Resistance Rated Walls. FlameTech™ FRTW lumber and plywood have been tested IAW ASTM E119 as components of fire-resistance rated wall assemblies for 1-hour and 2-hour ratings. See Intertek Listing Report "FRCT – FlameTech" on the Intertek Directory of Building Products.

6. Fasteners, including nuts and washers, shall be hot-dipped galvanized IAW with FlameTech™ published installation instructions.

7. FlameTech™ Interior FRTW does not contain any VOCs (volatile organic compounds), urea formaldehyde, halogens, sulfates or chlorides.

8. Solid dimension lumber treated with FlameTech™ shall be IAW US Product Standard (PS) 20; plywood treated with FlameTech™ shall be manufactured IAW PS 1 or PS 2, and have a minimum bond durability of Exposure 1.

Section 3 – Product Handling & Installation

1. FlameTech™ Interior FRTW used in all applications shall be installed IAW the manufacturer's published installation instructions, the requirements of the building code(s) and product recommendations, and Intertek CCRR-1088.

2. FlameTech™ Interior FRTW shall not be installed in areas where exposed to continuous wetting, precipitation, or condensation. Apply a water resistive barrier or underlayment over dry sheathing to avoid exposure to moisture.

3. Exposure to precipitation during storage shall be avoided. If material does become wet, it shall be replaced or permitted to dry (moisture content = 19% lumber and 15% plywood) prior to covering or permanent enclosure.

Revision 102824 NB

ICC-ES Evaluation Report

ESR-4056

Reissued March 2024

Subject to renewal March 2025

This report also contains:

- **CBC Supplement**
- **FBC Supplement**

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES **Section: 06 05 73.13—Fire-Retardant Wood Treatment**	**REPORT HOLDER:** **PERFORMANCE FORMULATION SOLUTIONS, LLC** **ADDITIONAL LISTEES:** **THUNDERBOLT WOOD TREATING SERVICES**	**EVALUATION SUBJECT:** **FLAMETECH™ FIRE-RETARDANT-TREATED WOOD**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2021, 2018, 2015 2012, 2009 and 2006 *International Residential Code* (IRC)

Properties evaluated:

- Flame spread
- Structural
- Corrosion
- Hygroscopicity
- Fire-resistance-rated Wall Assemblies

2.0 USES

FlameTech™ fire-retardant-treated wood is used in areas that are not exposed to the weather or wetting, but may be exposed to dampness where the code permits the use of wood or fire-retardant-treated wood.

3.0 DESCRIPTION

3.1 General:

FlameTech™ fire-retardant-treated wood is lumber and plywood impregnated with FlameTech™ fire-retardant chemicals by a pressure process.

FlameTech™ treatment of lumber of the following species is identified as being fire retardant:

Southern Pine Douglas Fir Spruce-Pine-Fir

FlameTech™ treatment of plywood fabricated with face and back veneers of the following species is identified as being fire retardant:

Douglas Fir Southern Pine

3.2 Flame Spread:

FlameTech™ fire-treated wood has a flame-spread index of 25 or less when subjected to ASTM E84 tests in accordance with IBC Section 2303.2 and 2021 IBC Section 2303.2.3 and shows no evidence of significant progressive combustion when the tests are continued for an additional 20-minute period.

3.3 Structural Strength and Durability:

The effects of FlameTech™ fire-retardant treatment on the strength of the treated lumber and plywood must be accounted for in the design of the wood members and their connections. Load duration factors greater than 1.6 are not permitted to be used in the design.

The strength properties of lumber when treated with FlameTech™ fire-retardant chemicals and used in applications at temperatures up to 100°F (38°C), are subjected to the design factors shown in Table 1 of this report.

The strength properties of lumber when treated with FlameTech™ fire-retardant chemicals and used in applications at temperatures up to 150°F (66°C), are subject to the span limitations shown in Table 2 of this report.

The strength properties of plywood, when treated with FlameTech™ fire-retardant chemicals and used in applications at temperatures up to 170°F (77°C), are subject to the span limitations shown in Table 3 of this report.

3.4 Corrosion:

The corrosion rate of aluminum, carbon steel, galvanized steel, stainless steel, copper, or red brass in contact with wood is not increased by FlameTech™ fire-retardant treatment when the product is used as recommended by the manufacturer.

3.5 Hygroscopicity:

FlameTech™ treated wood qualifies as an Interior Type A (HT) fire-retardant wood in accordance with the American Wood Protection Association (AWPA) Standard U1, Commodity Specification H, Use Category UCFA.

4.0 DESIGN AND INSTALLATION

4.1 General:

Structural systems that include FlameTech™ fire-retardant-treated lumber or plywood must be designed and installed in accordance with the applicable code using the appropriate lumber design value adjustment factors and plywood spans from Tables 1 and 2 of this report. Ventilation must be provided in accordance with the applicable codes.

The design value adjustment factors and plywood load and spans in Tables 1 and 2 of this report are applicable under elevated temperatures resulting from cyclic climatic conditions. They are not applicable under continuous elevated temperatures resulting from manufacturing or other processes that require special consideration in design.

The treated lumber and plywood must only be used in areas (including attic spaces) where the lumber is exposed to temperatures of 150°F (66°C) or less and the plywood is exposed to temperatures of 170°F (76.5°C) or less.

Exposure to precipitation during storage or installation must be avoided. If material does become wet, it must be replaced or permitted to dry (maximum 19 percent moisture content for lumber and 15 percent moisture content for plywood) prior to covering or enclosure by wallboard or other construction materials (except for protection during construction).

4.2 Fasteners:

Fasteners used in FlameTech™ fire-retardant-treated wood must be galvanized steel, stainless steel, silicon bronze or copper, in accordance with 2021 IBC Section 2304.10.6.4 [2018 and 2015 IBC Section 2304.10.5 (2012, 2009 and 2006 IBC Section 2304.9.5)] and 2021, 2018, 2015, 2012 and 2009 IRC Section 317.3.4 (2006 IRC Section R319.3), and must be subject to the design value adjustments indicated in Table 1 of this report.

4.3 Use as a Component of Fire-resistance-rated Wall Assemblies:

4.3.1 One-hour Exterior Wall Assemble: In Type III, Type IV and Type V construction, the exterior wall assemblies must be constructed of FlameTech™ treated wood studs and plywood. The design values for the studs must be adjusted in accordance with Tables 1 and 2. The allowable spans for the plywood sheathing must be in accordance with the spans given in Table 3 for FlameTech™ Wall/Subfloor.

When the fire-resistance rating is required from only the interior side, the wall must be constructed in accordance with Figure 2.

When the fire-resistance rating is required from the interior side and exterior side, the wall must be constructed in accordance with Figure 3.

4.3.2 Two-hour Exterior Wall Assembly: In Type III, Type IV and Type V construction, the exterior wall assemblies must be constructed of FlameTech™ treated wood studs and plywood. The design values for the

studs must be adjusted in accordance with Table 1. The allowable spans for the plywood sheathing must be in accordance with the spans given in Table 3 for FlameTech™ Wall/Subfloor.

When the fire-resistance rating is required from only the interior side, the wall must be constructed in accordance with Figure 4.

When the fire-resistance rating is required from the interior side (Two-hour) and exterior side (One-hour), the wall must be constructed in accordance with Figure 5.

When the fire-resistance rating is required from the interior side and exterior side, the wall must be constructed in accordance with Figure 6.

4.4 Plywood Diaphragms and Shear Walls:

Wood-frame diaphragms and shear walls must be constructed in accordance with 2021, 2018, 2015 and 2012 IBC Section 2306.2 and 2306.3 (2009 and 2006 IBC Section 2306.3 and 2306.4).

When FlameTech™ fire-retardant-treated plywood is used in a diaphragm or shear walls, the thickness must be 1/8-inch thicker than that determined for the tabulated allowable values contained in Sections 4.2 or 4.3 of ANSI/AWC Special Design Provisions for Wind and Seismic (SDPWS) or as shown in the tables referenced in 2021, 2018, 2015 and 2012 IBC Section 2306.2 or 2306.3 (2009 and 2006 IBC Section 2306.3 or 2306.4). Thickness to be used for FRT plywood compared to untreated plywood in diaphragm and shear walls are shown below:

FlameTech™ FRT Plywood Thickness (inches)	Untreated Plywood Thickness (inches)
19/32	7/16
19/32	15/32
5/8	1/2
23/32	19/32
3/4	5/8
7/8	23/32
7/8	3/4

5.0 CONDITIONS OF USE:

The FlameTech™ fire-retardant-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 Strength calculations must be subject to the design factors or span ratings shown in Tables 1 and 2 of this report.

5.2 The design value adjustment factors and span ratings given in this report must only be used for unincised dimension lumber and plywood of the species noted in this report.

5.3 FlameTech™ treated wood must not be installed where it will be exposed to precipitation, direct wetting or regular condensation.

5.4 FlameTech™ treated wood must not be used in contact with the ground.

5.5 FlameTech™ lumber must not be ripped or milled as this will alter the surface-burning characteristics and invalidate the flame spread classification. Framing, end cuts, holes, joints such as tongue and groove, bevel scarf and lap may be used.

5.6 Treatment is at the facilities of the listees noted in this report under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Fire-retardant-treated Wood (AC66), dated June 2015, editorially revised July 2022.

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4056) along with the name, registered trademark, or registered logo of the report holder or listee must be included in the product label. [Electronic labeling is the ICC-ES web address (www.icc-es.org); specific URL related to the report; or the ICC-ES machine-readable code placed on the aforementioned items.]

7.2 In addition, lumber and plywood treated with FlameTech™ fire-retardant chemicals must be identified by the structural grade mark of an approved agency. In addition, all treated lumber and plywood must be stamped with the name of the inspection agency [Timber Products Inspection, Inc. (AA-696)]; the

Performance Formulation Solutions, LLC or listee, name and location; the production plant identification; labeling information in accordance with 2021, 2018, 2015, 2012 and 2009 Section 2303.2.4 (2006 IBC Section 2303.2.1) or 2021, 2018 and 2015 IRC Section R802.1.5.4 [2012 and 2009 IRC Section R802.1.3.4 (2006 IRC Section R802.1.3.1)] ; and the evaluation report number (ESR-4056). Refer to Figure 1.

7.3 The report holder's contact information is the following:

PERFORMANCE FORMULATION SOLUTIONS, LLC
3465 GRIBBLE ROAD
MATTHEWS, NORTH CAROLINA 28104
(980) 253-8880
www.flametechspecs.com

7.4 The Additional Listees' contact information is the following:

THUNDERBOLT WOOD TREATING SERVICES
3400 PATTERSON ROAD
RIVERBANK, CALIFORNIA 95367

7.5 The manufacturing locations are as follows:

THUNDERBOLT WOOD TREATING SERVICES
THUNDERBOLT WOOD TREATING SERVICES
3400 PATTERSON ROAD
RIVERBANK, CALIFORNIA 95367

TABLE 1—STRENGTH DESIGN FACTORS FOR FLAMETECH™ FIRE RETARDANT TREATED LUMBER COMPARED TO UNTREATED LUMBER APPLICABLE AT SERVICE TEMPERATURES UP TO 100°F (33°C)

STRENGTH DESIGN FACTORS	SPECIES		
	Southern Pine	Douglas Fir	Spruce-Pine-Fir
Bending MOR, [F_b]	0.82	1.00	0.96
Bending MOE, [E]	0.87	0.99	0.93
Tension Parallel to Grain, [F_t]	0.98	1.00	0.99
Shear Parallel to Grain, [F_v]	0.95	1.00	1.00
Compression Parallel to Grain, [F_c]	0.96	0.96	0.99
Compression Perpendicular to Grain, [$F_{c\perp}$]	0.95	0.95	0.95
Fasteners/Connectors	0.90	0.90	0.90

TABLE 2—STRENGTH DESIGN FACTORS FOR FLAMETECH™ FIRE RETARDANT TREATED LUMBER COMPARED TO UNTREATED LUMBER APPLICABLE AT SERVICE TEMPERATURES UP TO 150°F (66°C) [1, 2]

STRENGTH DESIGN FACTORS	SPECIES								
	Southern Pine			Douglas Fir			Spruce-Pine-Fir		
	Climate Zone			Climate Zone			Climate Zone		
	1A	1B	2	1A	1B	2	1A	1B	2
Bending MOR, [F_b]	0.82	0.82	0.82	1.00	1.00	1.00	0.91	0.93	0.95
Bending MOE, [E]	0.88	0.88	0.88	1.00	1.00	1.00	0.96	0.96	0.96
Tension Parallel to Grain, [F_t]	0.89	0.93	0.98	1.00	1.00	1.00	0.95	0.97	0.99
Shear Parallel to Grain, [F_v]	0.89	0.93	0.98	1.00	1.00	1.00	0.95	0.97	0.99
Compression Parallel to Grain, [F_c]	0.87	0.91	0.96	0.98	0.98	0.98	0.92	0.94	0.96
Fasteners/Connectors	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90

[1]Climate Zone definition:
Zone 1 – Minimum design roof live load or maximum ground snow load ≤ 20 psf (960 Pa)
Zone 1A – Southwest Arizona, Southeast Nevada (area Bounded by Las Vegas-Yuma-Phoenix-Tucson)
Zone 1B – All other qualifying areas of the United States
Zone 2 – Maximum ground snow load > 20 psf (960 Pa)
[2]Duration of load adjustments for snow load, 7-day (construction) loads, and wind loads as given in the *National Design Specification for Wood Construction*® (NDS) also apply.

TABLE 3—MAXIMUM LOADS AND SPANS FOR FLAMETECH™ FIRE RETARDANT TREATED PLYWOOD AT SERVICE TEMPERATURES UP TO 170°F (77°C) [1, 2, 3, 4, 5,6,7,8,9,10,11,12]

PANEL/SHEATHING THICKNESS	SPAN RATING FOR UNTREATED ROOF/SUB-FLOOR SHEATHING	FLAMETECH™ ROOF SHEATHING				FLAMETECH™ WALL OR SUBFLOOR
		Maximum Span (Inches)	Total Allowable Loads (psf) Climate Zone			Span (Inches)
			1A	1B	2	
$^{15}/_{32}$, ½	32/16	24	29	42	60	16
$^{19}/_{32}$, $^{5}/_{8}$	40/20	24 32	49 28	72 41	103 58	20 20
$^{23}/_{32}$, $^{3}/_{4}$	48/24	32 48	40 18	59 26	84 37	24 24

SI Unit Conversions: 1 in = 25.4 mm 1 psf = 48 N/m²

[1]All loads are based on two-span condition with strength axis perpendicular to supports.
[2]Panel edge supports shall be required for roof sheathing. Panel edge clips when used shall be installed as follows: One midway between supports for 24-inch and 32-inch spans, two at $^{1}/_{3}$-points between supports for 48-inch spans. Clips must be manufactured for the plywood thickness.
[3]Fastener size and spacing shall be as required in accordance with the IBC or IRC for untreated plywood of the same thickness.
[4]For low-sloped or flat roofs with membrane or built-up roofing having a perm rating of less than 0.2; use rigid insulation having a minimum *R*-value of 4.0 between the sheathing and the roofing, or use the next thicker panel than the tabulated for the span and load (example; $^{19}/_{32}$ for 24; $^{23}/_{32}$ for 32); and use a continuous ceiling air barrier and vapor retarder with a perm rating of less than 0.2 on the bottom of the roof framing above the ceiling.
[5]FlameTech™ fire-retardant-treated plywood must not be used as roof sheathing if a radiant shield is used beneath the roof sheathing.
[6]The total allowable load is the sum of the live load and dead loads at maximum span. For allowable live loads, subtract dead (assumed to be 8 psf) from the total loads listed.
[7]The $^{15}/_{32}$ and $^{1}/_{2}$-inch plywood is limited to 4-ply. $^{19}/_{32}$ and $^{5}/_{8}$-inch plywood is limited to performance rated 4-ply and 5-ply. $^{23}/_{32}$ and $^{3}/_{4}$-inch plywood is limited to performance rated 5-ply and 7-ply.
[8]Uniform load deflection limitations 1/180 of span under live load plus dead load and 1/240 under live load only.
[9]Subfloor is limited to 100 psf Maximum Load.
[11]Climate Zone definitions:
Zone 1 – Minimum design roof live load or maximum ground snow load ≤ 20 psf (960 Pa)
Zone 1A – Southwest Arizona, Southeast Nevada (Area Bounded by Las Vegas-Yuma-Phoenix-Tucson)
Zone 1B – All other qualifying areas of the United States
Zone 2 – Maximum ground snow load > 20 psf (960 Pa)
[12]For other load conditions, contact manufacturer.

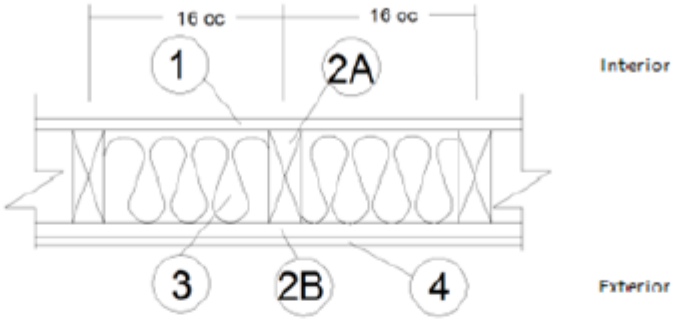
FIGURE 1—LUMBER AND PLYWOOD STAMPS

FlameTech™ SAMPLE LABELS

Fire Retardant Wood FlameTech™ Lumber and Plywood

ASTM E119 Rating: 1 Hour Load Bearing (2015 NDS – F_c 0.96 for FRWT)

Rated from One Side (Interior Side Only



1. **GYPSUM BOARD (Interior):** One layer Type X, complying with ASTM C1396, min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Joints covered with paper tape and joint compound. Fasteners covered with joint compound. Min. #6 x 1-5/8 in. long Type S or W screws, spaced max. 6 in. on center (oc).

2. **CERTIFIED MANUFACTURER:** Performance Formulation Solutions, LLC

   CERTIFIED PRODUCT: FlameTech™

   2A. CERTIFIED MODEL: FlameTech Lumber

   FlameTech Lumber is min. 2×4 in. nominal wood studs spaced 16 in. oc, or 2×6 in. nominal wood studs spaced 24 in. oc, double top plates and single bottom plate fastened together with 16d common nails (3-1/2 in. × 0.162 in.), 16d box nails (3-1/2 in. × 0.135 in.), or 12d ring nails (3-1/4 in. × 0.135 in.).

   2B. CERTIFIED MODEL (Exterior): FlameTech Plywood

   FlameTech Plywood, min. 15/32 in. thick, is applied vertically over the specified framing with min. 2-3/8 in. long, 0.113 in. diameter nails, spaced max. 8 in. oc around the perimeter and max. 12 in. oc in the field. Horizontal joints must be blocked.

3. **INSULATION:** Fiberglass Class A batt insulation, min. 3-1/2 in. thick, R-13 friction fit between the studs. If 2×6 in. nominal wood studs are used, fiberglass batt insulation shall be min. 5-1/2 in. thick.

4. **EXTERIOR FACINGS (Optional):** Materials installed in accordance with manufacturer's installation instructions:
   - Masonry brick veneer or concrete
   - Portland cement or synthetic stucco systems with self-furring metal lath or adhesive base coat
   - Hardboard, wood structural panel, plywood, or fiber-cement siding
   - Metal siding
   - Vinyl siding – exterior plastic

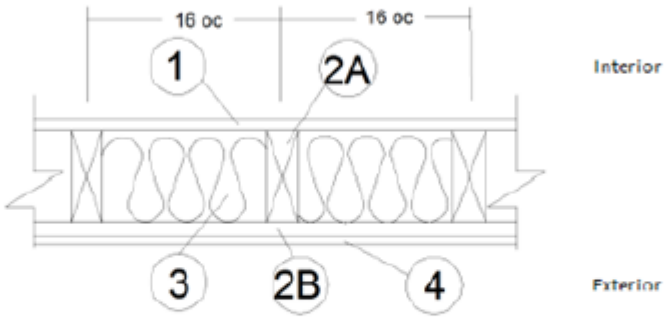
FIGURE 2—ONE-HOUR FIRE RESISTANCE ASSEMBLY

SI Units: 1 inch = 25.4 mm

Fire Retardant Wood FlameTech™ Lumber and Plywood

ASTM E119 Rating: 1 Hour Load Bearing (2015 NDS – F_o 0.96 for FRWT)

Rated from Both Sides (Interior and Exterior Sides)



1. **GYPSUM BOARD (Interior)**: One layer Type X, complying with ASTM C1396, min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Joints covered with paper tape and joint compound. Fasteners covered with joint compound. Min. #6 × 1-5/8 in. long Type S or W screws, spaced max. 6 in. on center (oc).

2. **CERTIFIED MANUFACTURER:** Performance Formulation Solutions, LLC

   CERTIFIED PRODUCT: FlameTech™

   2A. CERTIFIED MODEL: FlameTech Lumber

   FlameTech Lumber is min. 2×4 in. nominal wood studs spaced 16 in. oc, or 2×6 in. nominal wood studs spaced 24 in. oc, double top plates and single bottom plate fastened together with 16d common nails (3-1/2 in. × 0.162 in.), 16d box nails (3-1/2 in. × 0.135 in.), or 12d ring nails (3-1/4 in. × 0.135 in.).

   2B. CERTIFIED MODEL (Exterior): FlameTech Plywood

   FlameTech Plywood, min. 15/32 in. thick, is applied vertically over the specified framing with min. 2-3/8 in. long, 0.113 in. diameter nails, spaced max. 8 in. oc around the perimeter and max. 12 in. oc in the field. Horizontal joints must be blocked.

   INSULATION: Fiberglass Class A batt insulation, min. 3-1/2 in. thick, R-13 friction fit between the studs. If 2×6 in. nominal wood studs are used, fiberglass batt insulation shall be min. 5-1/2 in. thick.

4. **EXTERIOR FACINGS**: Materials installed in accordance with manufacturer's installation instructions:
   - 3/4 in. thick cement plaster (1:4 ratio of cement to sand for scratch coat and 1:5 ratio for brown coat)
   - Nominal 2.7 in. thick solid brick fastened using min. 22 GA wall ties
   - Nominal 2.3 in. thick hollow brick fastened using min. 22 GA wall ties

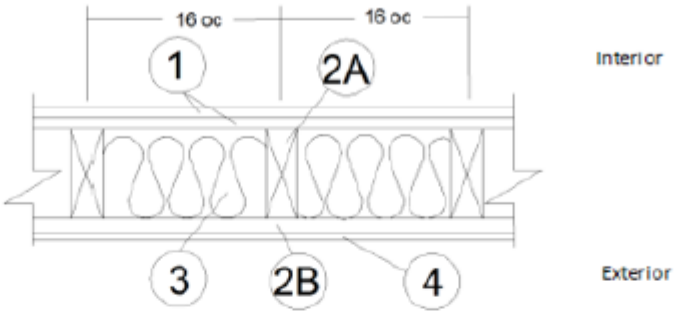
FIGURE 3—ONE-HOUR FIRE RESISTANCE ASSEMBLY

SI Units: 1 inch = 25.4 mm

Fire Retardant Wood FlameTech™ Lumber and Plywood

ASTM E119 Rating: 2 Hour Load Bearing (2015 NDS – F_c 0.96 for FRWT)

Rated from One Side (Interior Side Only)



1. **GYPSUM BOARD (Interior):** Two layers USG Firecode® C Core, complying with ASTM C1396, min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Face layer joints staggered with base layer and covered with paper tape and joint compound.

   FASTENERS (Not Shown):

   A. FACE LAYER – Min. #6 × 2 in. long Type S or W screws spaced max. 8 in. on center (oc) and heads covered with joint compound.

   B. BASE LAYER – Min. #6 × 1-5/8 in. long Type S or W screws, spaced max. 6 in. oc.

2. **CERTIFIED MANUFACTURER:** Performance Formulation Solutions, LLC

   CERTIFIED PRODUCT: FlameTech™

   2A. CERTIFIED MODEL: FlameTech Lumber

   FlameTech Lumber is min. 2×4 in. nominal wood studs spaced 16 in. oc, or 2×6 in. nominal wood studs spaced 24 in. oc, double top plates and single bottom plate fastened together with 16d common nails (3-1/2 in. × 0.162 in.), 16d box nails (3-1/2 in. × 0.135 in.), or 12d ring nails (3-1/4 in. × 0.135 in.).

   2B. CERTIFIED MODEL (Exterior): FlameTech Plywood

   FlameTech Plywood, min. 15/32 in. thick, applied vertically over the specified framing with min. 2-3/8 in. long, 0.113 in. diameter nails, spaced max. 8 in. oc around the perimeter and max. 12 in. oc in the field. Horizontal joints must be blocked.

3. **INSULATION:** Fiberglass Class A batt insulation min. 3-1/2 in. thick R-13 friction fit between the studs. If 2×6 in. nominal wood studs are used, fiberglass batt insulation shall be min. 5-1/2 in. thick.

4. **EXTERIOR FACINGS (Optional):** Materials installed in accordance with manufacturer's installation instructions:
   - Masonry brick veneer or concrete
   - Portland cement or synthetic stucco systems with self-furring metal lath or adhesive base coat
   - Hardboard, wood structural panel, plywood, or fiber-cement siding
   - Metal siding
   - Vinyl siding – exterior plastic

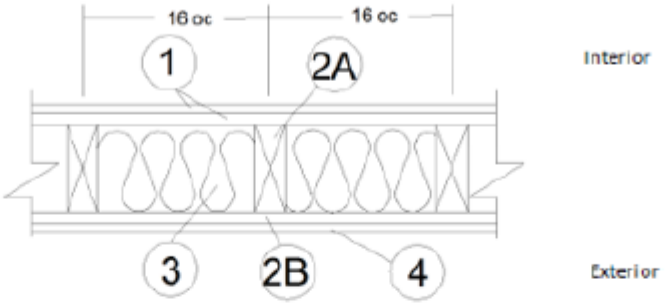
FIGURE 4—TWO-HOUR FIRE RESISTANCE ASSEMBLY

SI Units: 1 inch = 25.4 mm

Fire Retardant Wood FlameTech™ Lumber and Plywood

ASTM E119 Rating: 2 Hour Load Bearing from the Interior and 1 Hour Load Bearing from the Exterior

(2015 NDS – F_o 0.96 for FRWT)



1. **GYPSUM BOARD (Interior):** Two layers USG Firecode® C Core, complying with ASTM C1396, min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Face layer joints staggered with base layer and covered with paper tape and joint compound.

   FASTENERS (Not Shown):

   A. FACE LAYER – Min. #6 × 2 in. long Type S or W screws spaced max. 8 in. on center (oc) and heads covered with joint compound.
   B. BASE LAYER – Min. #6 x 1-5/8 in. long Type S or W screws, spaced max. 6 in. oc.

2. **CERTIFIED MANUFACTURER:** Performance Formulation Solutions, LLC

   CERTIFIED PRODUCT: FlameTech™

   2A. CERTIFIED MODEL: FlameTech Lumber

   FlameTech Lumber is min. 2×4 in. nominal wood studs spaced 16 in. oc, or 2×6 in. nominal wood studs spaced 24 in. oc, double top plates and single bottom plate fastened together with 16d common nails (3-1/2 in. × 0.162 in.), 16d box nails (3-1/2 in. x 0.135 in.), or 12d ring nails (3-1/4 in. × 0.135 in.).

   2B. CERTIFIED MODEL (Exterior): FlameTech Plywood

   FlameTech Plywood, min. 15/32 in. thick, applied vertically over the specified framing with min. 2-3/8 in. long, 0.113 in. diameter nails, spaced max. 8 in. oc around the perimeter and max. 12 in. oc in the field. Horizontal joints must be blocked.

3. **INSULATION:** Fiberglass Class A batt insulation min. 3-1/2 in. thick R-13 friction fit between the studs. If 2×6 in. nominal wood studs are used, fiberglass batt insulation shall be min. 5-1/2 in. thick.

4. **EXTERIOR FACINGS:** Materials installed in accordance with manufacturer's installation instructions:
   - 3/4 in. thick cement plaster (1:4 ratio of cement to sand for scratch coat and 1:5 ratio for brown coat)
   - Nominal 2.7 in. thick solid brick fastened using min. 22 GA wall ties
   - Nominal 2.3 in. thick hollow brick fastened using min. 22 GA wall ties

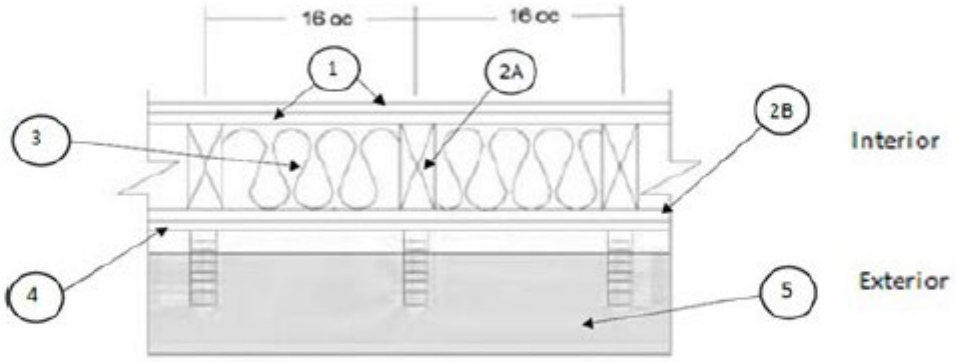
FIGURE 5—TWO-HOUR FIRE RESISTANCE ASSEMBLY

SI Units: 1 inch = 25.4 mm

Fire Retardant Wood FlameTech™ Lumber and Plywood

ASTM E119 Rating: 2 Hour Load Bearing

Rated from Both Sides (Interior and Exterior Sides)



1. GYPSUM BOARD (Interior): Two layers Type X complying with ASTM C1396 min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Face layer joints staggered with base layer and covered with paper tape and joint compound.

FASTENERS (Not Shown):

A. FACE LAYER – Min. #6 × 2 in. long Type S or W screws spaced max. 8 in. on center (oc) and heads covered with joint compound.

B. BASE LAYER – Min. #6 × 1-5/8 in. long Type S or W screws, spaced max. 6 in. oc.

2. CERTIFIED MANUFACTURER: Performance Formulation Solutions, LLC

CERTIFIED PRODUCT: FlameTech™

2A. CERTIFIED MODEL: FlameTech Lumber FlameTech Lumber is min. 2×4 in. nominal wood studs spaced 16 in. oc, or 2×6 in. nominal wood studs spaced 24 in. oc, double top plates and single bottom plate fastened together with 16d common nails (3-1/2 in. × 0.162 in.), 16d box nails (3-1/2 in. × 0.135 in.), or 12d ring nails (3-1/4 in. × 0.135 in.).

2B. CERTIFIED MODEL (Exterior): FlameTech Plywood FlameTech Plywood, min. 15/32 in. thick, applied vertically over the specified framing with min. 2-3/8 in. long, 0.113 in. diameter nails, spaced max. 8 in. oc around the perimeter and max. 12 in. oc in the field. Horizontal joints must be blocked.

3. INSULATION: Fiberglass Class A batt insulation min. 3-1/2 in. thick R-13 friction fit between the studs. If 2×6 in. nominal wood studs are used, fiberglass batt insulation shall be min. 5-1/2 in. thick.

4. GYPSUM BOARD (Exterior): One-layer Type X complying with ASTM C1396 min. 5/8 in. thick, 4 ft. wide applied vertically, fastened to framing. Face layer joints staggered with base layer and covered with paper tape and joint compound. Fasteners covered with joint compound. Min. #6 x 2 in. long Type 2 or W screws, spaced max 6 in. oc.

5. EXTERIOR FACING: Materials installed in accordance with manufacturer's installation instructions: 2-1/4-in. x 3-3/4-in. clay faced brick with cored holes fastened using minimum 20 GA galvanized wall ties attached to each stud with 8d coated nails, 2-3/8-in. long, 0.113-in. shank, 9/32-in. head, at every 6th course of bricks.

FIGURE 6—TWO-HOUR FIRE RESISTANCE ASSEMBLY

SI Units: 1 inch = 25.4 mm

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 73.13—Fire-Retardant Wood Treatment

REPORT HOLDER:

PERFORMANCE FORMULATION SOLUTIONS, LLC

EVALUATION SUBJECT:

FLAMETECH™ FIRE-RETARDANT-TREATED WOOD

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that FlameTech™ fire-retardant-treated wood, described in ICC-ES evaluation report ESR-4056, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 *California Building Code* (CBC)

For evaluation of applicable Chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The FlameTech™ fire-retardant-treated wood, described in Sections 2.0 through 7.0 of evaluation report ESR-4056, complies with CBC, provided the design and installation are in accordance with the 2021 *International Building Code®* (IBC) provisions noted in the evaluation report.

The products have not been evaluated under Chapter 7A for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement

2.2 CRC:

The FlameTech™ fire-retardant-treated wood, described in Sections 2.0 through 7.0 of evaluation report ESR-4056, complies with the CRC, provided the design and installation are in accordance with the 2021 *International Residential Code®* (IRC) provisions noted in the evaluation report.

The products have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

This supplement expires concurrently with the evaluation report, reissued March 2024.

ICC-ES Evaluation Report

ESR-4056 FBC and FRC Supplement

Reissued March 2024

This report is subject to renewal March 2025.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 73.13—Fire-Retardant Wood Treatment

REPORT HOLDER:

PERFORMANCE FORMULATION SOLUTIONS, LLC

EVALUATION SUBJECT:

FLAMETECH™ FIRE-RETARDANT-TREATED WOOD

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that FlameTech™ fire-retardant-treated wood, described in ICC-ES evaluation report ESR-4056, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 *Florida Building Code—Building*
- 2023 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The FlameTech™ fire-retardant-treated wood, described in Sections 2.0 through 7.0 of the evaluation report ESR-4056, complies with the *Florida Building Code—Building* and *Florida Building Code—Residential*. The design requirements shall be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-4056 for the 2021 *International Building Code®* meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential,* as applicable.

Use of the FlameTech™ fire-retardant-treated wood has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued March 2024.

CERTIFICATE OF COMPLIANCE

Certificate Number 20180717- R39580
Report Reference R39580-20180716
Issue Date 2018-JULY-17

Issued to: Fire Retardant Chemical Technologies
3465 Gribble Road
Matthews NC 28104

This is to certify that representative samples of LUMBER, TREATED

Douglas Fir	White Spruce
Southern Yellow Pine	Lodgepole Pine
Ponderosa Pine	SPF
Red Pine	Jack Pine
Hem/Fir	Balsam Fir
White Fir	Red Spruce
Western Hemlock	Black Spruce
Alpine Fir	Engelmann Spruce

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 723 Standard for Surface Burning Characteristics for Building Materials

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	20180716- R39579
Report Reference	R39579-20180716
Issue Date	2018-JULY-16
Issued to:	Fire Retardant Chemical Technologies 3465 Gribble Road Matthews NC 28104
This is to certify that representative samples of	TREATED PLYWOOD Douglas Fir and Southern Yellow Pine plywood, treated by pressure impregnation to reduce combustibility. Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 723 Surface Burning Characteristics for Building Materials
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

PERFORMANCE FORMULATION SOLUTIONS™

SAFETY DATA SHEET

FLAMETECH – FIRE TREATED WOOD

Prepared according to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union Reach Regulation, Directives 67/548/EC & 1999/45/EC and CLP Regulation 1272/2008/EC

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Trade Name (as labeled):	FlameTech - Fire Treated Wood
Synonyms:	N/A
CAS No:	Mixture
1.2 Product Use:	Fire retardant lumber
1.3 Company Name:	**Performance Formulation Solutions (Formerly FRCT)**
Company Address:	3465 Gribble Road
Company Address Cont:	Matthews, NC 28104
Business Phone:	980-253-8880
1.4 Emergency Telephone Number:	980-253-8880
Date of Current Revision:	February 21, 2023
Date of Last Revision:	New

SECTION 2 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a wood natural color to red tinted solid with an odor dependent on the wood product.

Health Hazards: Wood dust may cause skin and eye irritation. Exposure to the Proprietary Ingredient may be a danger to the unborn child.

Flammability Hazards: This product as sold is a non-flammable solid. Dust concentrations created while altering this product may be combustible.

Reactivity Hazards: None.

Environmental Hazards: The environmental effects of this product have not been investigated, however release may cause long term adverse environmental effects.

US DOT Symbols: Not Regulated

EU and GHS Symbols:

Signal Word: Danger!

2.1 CLASSIFICATION OF SUBSTANCE OR MIXTURE IN ACCORDANCE WITH 29 CFR 1200 (OSHA HCS) AND THE EUROPEAN UNION DIRECTIVES:

This product does meet the definition of a hazardous substance or preparation as defined by 29 CFR 1910. 1200 or the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC, 2015/830/EU and subsequent Directives.

Components Contributing to Classification: Wood / Wood Dust, Proprietary Ingredient

2.2 Label Elements:		Component contributing to statement
GHS Hazard Classifications:	Reproductive Toxicity Category 1B Combustible Dust	(Proprietary Ingredient) (Wood dust)
Hazard Statements:	H360 May damage fertility or the unborn child May form combustible dust concentrations in air (during handling or processing).	(Proprietary Ingredient) (Wood dust)

Prevention Statements:	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/protective clothing/eye protection/face protection.	(Proprietary Ingredient) (Proprietary Ingredient) (Proprietary Ingredient)
Response Statements:	P308+P313 IF exposed or concerned: Get medical advice/attention.	(Proprietary Ingredient)
Storage Statements:	None applicable to final product.	
Disposal Statements:	P501 Dispose of contents/container in accordance with local/regional/ national/international regulations.	(Proprietary Ingredient)

2.3 Health Hazards or Risks From Exposure:

Symptoms of Overexposure by Route of Exposure:

The most significant routes of overexposure for this product are by contact with skin or eyes. The symptoms of overexposure are described in the following paragraphs.

Acute:

Inhalation: Wood dust may cause respiratory system irritation.

Skin Contact: Wood dust may cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking.

Eye Contact: Direct contact with wood dust to the eyes may be irritating.

Ingestion: Wood dust may cause irritation is swallowed.

Chronic: Reproductive hazard.

Target Organs:

Acute: Eyes, skin

Chronic: Reproductive system

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients:	WT%	CAS No.	EINECS No.	Hazard Classification
Wood	>95%	Not Listed	Not Listed	Combustible Dust
Proprietary Ingredient (Chemical)	<5%	Proprietary	Proprietary	Reproductive Toxicity 1B

Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

* Proprietary ingredients are Company Trade Secret - Business Confidential. PFS is withholding the specific chemical identity under provision of the OSHA Hazard Communication Rule Trade Secrets (1910.1200(i)(1)). The specific chemical identity will be made available to health professionals in accordance with 29 CFR 1910.1200 (i)(1) (2) (3) (4)..

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye Contact: If product enters the eyes, flush with plenty of water or eye wash solution for several minutes. Remove contacts if present and easy to do. Seek medical attention if irritation persists.

Skin Contact: Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.

Inhalation of wood dust: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

Ingestion: If product is swallowed, call physician or poison center immediately. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

Medical Conditions Generally Aggravated by Exposure: Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

4.2 Symptoms and Effects Both Acute and Delayed: Exposure to skin, eyes, and respiratory system may cause irritation.

4.3 Recommendations to Physicians: Treat symptoms and eliminate overexposure.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Fire Extinguishing Materials:

Use the following fire extinguishing materials:

Water Spray: Yes **Carbon Dioxide:** Yes
Foam: Yes **Dry Chemical:** Yes
Halon: Yes **Other:** Any "C" Class

5.2 Unusual Fire and Explosion Hazards:

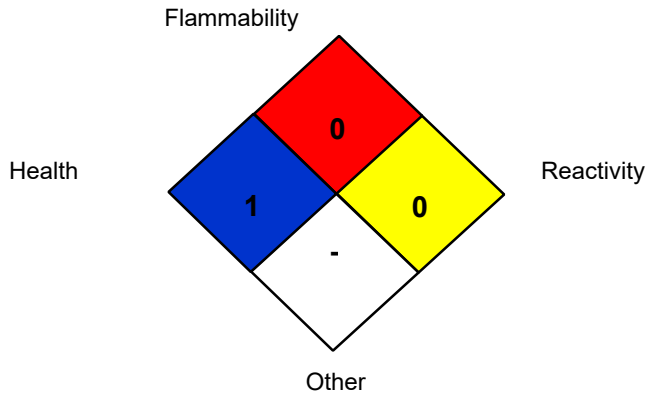
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Irritating and toxic fumes may be produced at high temperatures.

Explosive Sensitivity to Mechanical Impact: No
Explosive Sensitivity to Static Discharge: No

5.3 Special Fire-Fighting Procedures:

- Incipient fire responders should wear eye protection.
- Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment.
- Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray.
- If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	**1**
FLAMMABILITY HAZARD (RED)	**0**
PHYSICAL HAZARD (YELLOW)	**0**

PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimum 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic Hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Use cautious judgment when cleaning up spill. Wear suitable protective clothing, gloves, and eye/face protection.

6.2 Environmental Precautions:

Keep out of sewers, storm drains, surface waters, and soils.

6.3 Spill and Leak Response:

Small Spills:

- Collect material via broom or mop. Place in tightly sealed containers for proper disposal.

	• Approach spill areas with caution. • If liquid was introduced, create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material.
Large Spills:	• Place in leak-proof containers. Seal tightly for proper disposal. • Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling:

To prevent eye contact under the foreseeable conditions of use, wear appropriate safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling. Do not handle or store near heat, sparks, or flame.

7.2 Storage and Handling Practices:

Keep away from incompatible materials.

7.3 Specific Uses:

See section 1.2

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Exposure Parameters:

Ingredients	CAS No.	OSHA PEL	NIOSH PEL
Wood / Wood Dust	Not Available	15 mg/m³ Total Dust 5.0 mg/m³ Respirable fraction	15 mg/m³ Total Dust 5.0 mg/m³ Respirable fraction
Proprietary Ingredient	Proprietary	Not established	Not established

8.2 Exposure Controls:

Ventilation and Engineering Controls:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory Protection:	Not required for properly ventilated areas. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.
Eye Protection:	Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.
Hand Protection:	Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.
Body Protection:	Use body protect appropriate to task being performed. If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties:

Appearance (Physical State and Color): Wood natural color or red tinted solid
Odor: Faint odor
Odor Threshold: No data available
pH: 4.5-7.4
Melting/Freezing Point: Not applicable
Boiling Point: Not applicable
Flash Point: No data available
Evaporation Rate: No data available
Flammability (Solid; Gas): Not applicable
Upper/Lower Flammability or Explosion Limits: No data available
Vapor Pressure (mm Hg @ 20°C (68° F): No data available
Vapor Density: No data available
Relative Density: No data available
Specific Gravity: Not available
Solubility in Water: non-soluble
Weight per Gallon: No data available
Partition Coefficient (n-octanol/water): No data available
Auto-Ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available

9.2 Other Information: No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity: This product is not reactive.
10.2 Stability: Stable under conditions of normal storage and use.
10.3 Possibility of Hazardous Reactions: Not identified.
10.4 Conditions to Avoid: Extreme temperatures, heat, flame, prolonged storage at elevated temperatures.
10.5 Incompatible Substances: Strong oxidizing agents.
10.6 Hazardous Decomposition Products: Will not occur if handled and stored properly. In case of a fire, oxides of carbon and silicon, hydrocarbons, fumes or vapors, and smoke may be produced.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Toxicity Data:

Proprietary Ingredient	Proprietary	LD50 Oral – Rat	2,660 mg/kg
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.			

Carcinogenicity

Ingredients within this product are found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are considered to be cancer-causing agents by these agencies.
Wood Dust is listed as a carcinogen by NTP, OSHA, or IARC. IARC – Group 1: Carcinogenic to humans; sufficient evidence of carcinogenicity. This classification is primarily based on studies showing association exposure to wood dust and Adenocarcinoma of the nasal cavities and Paranasal sinuses. IARC did not find sufficient evidence of an association between occupational exposure to wood dust and other cancers.

Irritancy: This product may cause mechanical irritation.
Sensitization to the Product: This product is not expected to cause skin sensitization.

Germ Cell Mutagenicity: This product does not contain ingredients that are suspected to be a germ cell mutagenic.

Reproductive Toxicity: This product contains a component expected to be a reproductive toxicant.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Proprietary Ingredient	Proprietary	LC50 –Fish-96h	279 mg/l
		EC50- Water flea- 48h	133 mg/l

12.2 Persistence and Degradability: No specific data available on this product.

12.3 Bioaccumulative Potential: No specific data available on this product.

12.4 Mobility in Soil: No specific data available on this product.

12.5 Results of PBT and vPvB Assessment: No specific data available on this product.

12.6 Other Adverse Effects: No data available

12.7 Water Endangerment Class: At present, there are no ecotoxicological assessments for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Australia, EU Member States and Japan.

13.2 EU Waste Code: Not determined

SECTION 14 - TRANSPORTATION INFORMATION

14.1 U.S. Department of Transportation (DOT) Shipping Regulations:

This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN Identification Number: Not Regulated

Proper Shipping Name: None

Hazard Class Number and Description: None

Packing Group: None

DOT Label(s) Required: None

North American Emergency Response Guidebook Number: None

14.2 Environmental Hazards:

Marine Pollutant: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

14.3 Special Precaution for User: None

14.4 International Air Transport Association Shipping Information (IATA): This product is not considered as dangerous goods.

14.5 International Maritime Organization Shipping Information (IMO): This product is not considered as dangerous goods.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations Specific for the Substance or Mixture:

United States Regulations:

U.S. SARA Reporting Requirements:

The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA 311/312:

Acute Health: No; Chronic Health: Yes; Fire: No; Reactivity; No

U.S. SARA 313: None known

U.S. CERCLA Reportable Quantity:

None known

U.S. TSCA Inventory Status:

The components of this product are listed on the TSCA Inventory or are exempted from listing.

Other U.S. Federal Regulations:

None known

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):

This product does contain ingredients on the Proposition 65 Lists.

15.2 Canadian Regulations:

Canadian DSL/NDSL Inventory Status:

Components are DSL Listed, NDSL Listed and/or are exempt from listing

Other Canadian Regulations:

Not applicable

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian WHMIS Classification and Symbols:

Classified per WHMIS 2015 Controlled Product Regulations.

15.3 European Economic Community Information:

This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC, 2015/830/EU and subsequent Directives. See Section 2 for Details.

Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 Australian Information for Product:

Components of this product are listed on the International Chemical Inventory list.

15.5 Japanese Information for Product:

Japanese Minister of International Trade and Industry (MITI) Status: The components of this product are not listed as Class I specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

15.6 International Chemical Inventories:

Listing of the components on individual country Chemical Inventories is as follows:

Australian Inventory of Chemical Substances (AICS): Listed

Korean Existing Chemicals List (ECL): Listed

Japanese Existing National Inventory of Chemical Substances (ENCS): Listed

Philippines Inventory if Chemicals and Chemical Substances (PICCS): Listed

U.S. TSCA: Listed

SECTION 16 - ADDITIONAL INFORMATION

Prepared By: Chris Eigbrett (MSDS to GHS Compliance)

Date of Printing: February 21, 2023

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. Performance Formulation Solutions assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, Performance Formulation Solutions assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user

END OF SDS SHEET