



Focus on Pressure Treated Fire Retardant Wood Products

Fire Retardant treated wood is lumber, plywood, shakes, and shingles, pressure-treated with a fire retardant solution. Pressure treatment forces the fire retardant into the wood, resulting in a product that does not promote burning. Pressure fire retardant treatment uses different chemicals and is not a wood preservative treatment in the sense of protecting wood from decay, insects, and weathering. Some fire retardant treatments with specified borate content/levels may meet the definition of a preservative under some standards.

Common Applications

Pressure-treated fire retardant wood is used in applications where: public safety is critical; other materials would transfer heat or allow fires to spread; sprinkler systems cannot easily be installed; corrosive atmospheres would necessitate excessive maintenance of other materials; and where fire protection is inadequate or not readily available.

U.S. model and many local building and urban-wildland interface codes require fire retardant treated wood in many building applications. Typical uses are: studs, framing, and roof systems including, trusses, decking, joists and purlins. Also, floor framing and underlayment, theater stages, wall and partition systems, scaffolding, shelving and bins, pallets, and exterior and interior siding.

How It Works

In a fire, combustible materials generate gases that explode at a certain temperature, spreading flames in all directions. When exposed to fire, the FRTW chemicals react with the combustible tars and gases that are normally produced by wood exposed to high heat. These chemicals convert the combustible tars to carbon char, and dilute the combustible gases with harmless carbon dioxide and water vapor, rendering them for the most part non-flammable. The build-up of carbon char on flame-exposed FRTW acts as thermal insulation, slowing down the rate of fire and prolonging structural integrity.

Extensive Testing

Pressure-treated fire retardant wood products from the listed companies, undergo extensive individual code-prescribed fire testing and are qualified in independent, certified laboratories with periodic retesting and inspection by third-party accredited quality control agencies. Exterior FRT products are additionally re-tested after accelerated weathering protocols designed to replicate years of outdoor weathering.

Interior and Exterior Fire Retardant Treated Lumber and Plywood fire tests and ratings commonly include: ASTM E-84 (aka: Steiner Tunnel, ULI 723, NFPA 255, UBC 8-1); FR-S,

Class A or Class I ratings require a flame spread index of 25 or less and no evidence of progressive combustion after 30 minutes (Class B or II require an index of 26-75 or less and Class C or III require an index of 76-200). Other tests include: ASTM E-162 Radiant Panel Tests; NFPA-258 Smoke Density Tests; ASTM D-3201 Hygroscopicity, Mil 19140E (Type D) Corrosion Tests; and ASTM D-5664 and D-5516 Strength Testing.

Fire tests for Exterior FRTW are the same as the above interior tests except for required re-testing after accelerated weathering exposure tests (commonly ASTM D-2898 or like standards) and because the intended usage is outdoors, no high temperature strength tests (ASTM D-5664 and D-5516) are required. The Military exterior FRTW standard is Mil-L-19140E Type II.

Fire Retardant Treated exterior Shake and Shingle "Siding" fire tests commonly include ASTM E-84 with the same rating system described above. Fire Retardant Treated Shake and Shingle "Roofing" is subject to Spread of Flame, Intermittent Flame, Burning Brand, Flying Brand, Accelerated Weathering, and Natural Weathering tests under standards commonly based on UL 790 (UBC 15-2, NFPA 256, ASTM E-108). The roof fire protection rating system of Class A (highest), B, C, has different standards and measurements than exterior and interior lumber and plywood. The test and rating system are described in WWPI's *Fire Tests for Pressure Fire Retardant Treated Wood*.

Learning from History

The concept of wood that resists fire may seem novel but fire retardant treated wood was introduced in the late 1800's when the U.S. Navy used it for ships. In 1900, New York City accepted fire retardant treated wood for certain applications. The product flourished during W.W. II when metal was consumed by war needs.

Since its introduction, the technology of fire retardant treated wood has continually progressed. While performance in a fire has always been good, today's products have properties superior to their predecessors.

Availability

Pressure-treated fire retardant wood is either in stock or available by order at many lumber yards throughout the U.S. Purchasers have a choice of various brands with additional unique features.

For specific information as to available product lines, including wood species, test and code qualifications/evaluation reports status, contact the individual WWPI companies listed on the back of this page. WWPI has on-line an up-to-date listing of member fire retardant wood product companies.

The following WWPI members provide durable pressure treated fire retardant wood products.

J.H. BAXTER & CO., A California Limited Partnership — www.jhbaxter.com

1700 S. El Camino Real • PO Box 5902 • San Mateo, CA 94402 • 650-349-0201 • FAX 650-570-6878
Eugene, OR: 541-689-3020 • FAX 541-689-8319

CALIFORNIA CASCADE INDUSTRIES — www.californiacascade.com

PO Box 130026 • Sacramento, CA 95853 • 916-736-3353 • FAX 916-736-2348
Fontana, CA: 909-357-2136 • FAX 909-357-2268
Woodlin, CA: 916-924-1715 • FAX 916-924-0171

CHEMCO, INC. — www.chemco.us

PO Box 875 • Ferndale, WA 98248 • 360-366-3500 • FAX 360-366-3831

CONRAD FOREST PRODUCTS — www.conradfp.com

68765 Wildwood Drive • North Bend, OR 97459 • 541-756-2595 • FAX 541-756-0131
Arbuckle, CA: 530-476-2894 • FAX 530-476-0780
Rainier, OR: 503-556-1953 • FAX 503-556-1325

EXTERIOR WOOD, INC. — www.exteriorwood.com

PO Box 206 • Washougal, WA 98671 • 360-835-8561 • FAX 360-835-8754

FONTANA WOOD PRESERVING

15500 Valencia • PO Box 1070 • Fontana, CA 92335 • 909-350-1214 • FAX 909-350-9623

HOOVER TREATED WOOD PRODUCTS, INC. — www.frtw.com

154 Wire Road, NW • Thomson, GA 30824 • 800-531-5558 • FAX 706-595-8462

THE PACIFIC WOOD PRESERVING COMPANIES — www.pacificwood.com

Pacific Wood Preserving of Bakersfield • 5601 District Blvd. • Bakersfield, CA 93313 • 661-833-0429 • FAX 661-836-0766
Arizona Pacific Wood Preserving, Eloy, AZ: 520-466-7801 • FAX 520-466-3607
Nevada Wood Preserving, Silver Springs, NV: 775-577-2000 • FAX 775-577-9045
Pacific Wood Preserving of Oregon, Sheridan, OR: 503-843-2122 • FAX 503-843-7058

PERMAPOST PRODUCTS COMPANY — www.permapost.com

25600 S.W. Tualatin Valley Highway • PO Box 100 • Hillsboro, OR 97123 • 503-648-4156 • 800-828-0222 •
FAX 503-648-6383

ROYAL PACIFIC INDUSTRIES

PO Box 75 • McMinnville, OR 97128 • 503-434-5450 • FAX 888-876-9663

THUNDERBOLT WOOD TREATING COMPANY — www.thunderized.net

3400 Patterson Road • PO Box 890 • Riverbank, CA 95367 • 800-826-8709 • FAX 209-869-4663

UTAH WOOD PRESERVING COMPANY

PO Box 57247 • Salt Lake City, UT 84157 • 801-295-9449 • FAX 801-295-9440

WESTERN WOOD PRESERVING CO. — www.westernwoodpreserving.com

PO Box 1250 • Sumner, WA 98390 • 253-863-8191 • 800-472-7714 • FAX 253-863-9129
Seattle, WA: 253-838-1680

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