List of Publications on WOOD PRESERVATION

September 1960

No. 704
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This list, which begins on page 3, includes publications that give general information and the results of research by the Forest Products Laboratory on preservative materials, methods of application, durability and service records of treated and untreated wood in various forms.

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INSTRUCTIONS FOR OBTAINING PUBLICATIONS

Publications available for distribution at this Laboratory are marked with an asterisk (*).

Single copies of technical notes, reprints, and processed reports may be obtained free upon request from the Director, Forest Products Laboratory, Madison 5, Wis.

Federal Government bulletins, circulars, and leaflets, if not available for free distribution at this Laboratory, may be purchased at the price indicated from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Send money order, draft, or cash; stamps or personal checks are not accepted.

Trade journals containing articles herein listed may be purchased from the publishers or consulted in various libraries.

The Forest Products Laboratory reserves the right to furnish only those publications which in its judgment will give the information requested. Blanket requests or requests for a large number of copies of any individual article will not be filled except in unusual cases.
DETERIORATION

Chemical

Journal Articles


Decay and Durability

Bulletins and Circulars

*Protection from wood-destroying organisms (mold, stain, decay). Separate from the Forest Products Laboratory's "Wood Handbook," USDA Handbook No. 72.1

Journal Articles


1Available from the Supt. of Documents, Government Printing Office, Washington 25, D.C.
DETERIORATION (Continued)

Decay and Durability (Continued)

Journal Articles (Continued)


Processed Reports

*68 Factors that influence the decay of untreated wood in service and comparative decay resistance of different species. 1958.

Technical Notes

*F-15 Effect of time of cutting timber on its durability.
*F-33 Comparative durability of green and seasoned timber.
*101 Comparative value of timber cut from live and dead trees.
*189 Differences between heartwood and sapwood.
*221 Weathering and decay.
*229 Comparative decay resistance of heartwood of different native species when used under conditions that favor decay.
*251 Prevention and control of decay in dwellings.
DETERIORATION (Continued)

Heat

Journal Articles


Effect of oven heating and hot pressing on strength properties of wood, by J. D. MacLean. AWPA Proc. 1955.


Effect of steaming on the strength of wood, by J. D. MacLean. AWPA Proc. 1953.

Effect of temperature on the dimensions of green wood, by J. D. MacLean. AWPA Proc. 1952.

Rate of disintegration of wood under different heating conditions, by J. D. MacLean. AWPA Proc. 1951.

Processed Reports


Marine Borers

Processed Reports

*D1773 Results of experiments on the effectiveness of various preservatives in protecting wood against marine-borer attack, by J. D. MacLean. 1959.


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HEAT CONDUCTION STUDIES RELATING TO WOOD PRESERVATION

Technical Notes

*259 Temperatures necessary to kill fungi in wood.

Journal Articles


Studies of heat conduction in wood:
Pt. 1. Results of steaming green round southern pine timber, by J. D. MacLean. AWPA Proc. 1930.
Pt. 2. Results of steaming green sawed southern pine timber, by J. D. MacLean. AWPA Proc. 1932.

Processed Reports

*1299 The rate of temperature change in wood panels heated between hot plates, by J. D. MacLean. Information reviewed and reaffirmed 1960.

*1406 Method of computing the rate of temperature change in wood and plywood panels when the two opposite surfaces are maintained at different temperatures, by J. D. MacLean. Information reviewed and reaffirmed 1956.

*1434 Rate of temperature change in laminated timbers heated in air under controlled relative humidity conditions, by J. D. MacLean. Information reviewed and reaffirmed 1954.

*1609 Temperatures obtained in timbers when the surface temperature is changed after various periods of heating, by J. D. MacLean. Apr. 1946; AWPA Proc. Information reviewed and reaffirmed 1956.
PRESERVATIVES

Application Methods

Bulletins and Circulars


Journal Articles


*Exploratory tests to increase preservative penetration in spruce and aspen by mold infection, by George Schulz. For. Prod. Jour. 6(2):77-80, Feb. 1956.
Journal Articles (Continued)

*Relations between gage retentions and amounts of creosote extractable from borings taken from treated pine poles, by R.H. Baechler, AWPA Proc. 1954. pp. 113-121.


Protecting wood from decay and fire, by G.M. Hunt, Arch. Record, Dec. 1953.


Factors that have an important bearing on the preservative treatment of round timbers, by J.D. MacLean. AWPA Proc. 1950.


Processed Reports

| *WP-39 | Some companies that design or build wood-preserving plants. 1959. |
|        |                                                            |
| Aspen  | The preservative treatment of aspen, by Frank Kaufert. 1959. |
| Rept.  | Available at the Lake States Forest Experiment Station, |
| No. 19 | University Farm, St. Paul, Minn.                        |
| *621   | Preservation of timber by the steeping process. 1959.     |
| *761   | The preservative treatment and staining of shingles, by  |
|        | F. L. Browne. Information reviewed and reaffirmed 1953.  |
| *919   | Preservative treatment of window sash and other millwork, |
|        | by F. L. Browne. Information reviewed and reaffirmed 1953.|
| *1006  | Wood seats for stadiums. 1958.                            |
| *1158  | Tire-tube method of fence post treatment, by R. M. Wirka,  |
|        | Information reviewed and reaffirmed 1956.                  |
| *1260  | Determination of nickel and copper chromates and nickel,   |
|        | copper, and magnesium arsenates in treated wood. Informa-|
|        | tion reviewed and reaffirmed 1960.                         |
| *1445  | Treating wood in pentachlorophenol solutions by the cold-  |
| *1448  | Effect of moisture changes on the shrinking, swelling,     |
|        | specific gravity, air or void space, weight and similar   |
|        | properties of wood, by J. D. MacLean. Information         |
|        | reviewed and reaffirmed 1958.                             |
Preservatives (Continued)

Application Methods (Continued)

Processed Reports (Continued)

*1674 Diffusion in wood. Information reviewed and reaffirmed, March 1956.


*2054 Condition of preservative treated field boxes after 5 years of outdoor exposure, by R.S. Kurtenacker, T.C. Scheffer, and J.O. Blew, 1956.


*2098 The preservative treatment of wood for farm use, by J.O. Blew. 1957.

*WP-10 The osmose preservatives and processes.

Technical Notes

*165 When preservative treatment of wood is an economy.

Evaluation of Properties

Journal Articles

*Effect of preservatives on block-shear values of laminated red oak over a 3-year period, by M.L. Selbo. AWPA 55:155-164, 1959
Journal Articles (Continued)


*Relations between the chemical constitution and toxicity of aliphatic compounds, by R. H. Baechler. AWPA Proc. 1947, reviewed and reaffirmed 1956.


*Toxicity of normal aliphatic alcohols, acids, and sodium salts, by R. H. Baechler. AWPA Proc. 1939, reviewed and reaffirmed 1956.


PRESERVATIVES (Continued)

Evaluation of Properties (Continued)

Journal Articles (Continued)


A relation between chemical constitution and toxicity, by R.H. Baechler and E. Bateman. AWPA Proc. 1936.

Toxicity in relation to the position and number of chlorine atoms in certain chlorinated benzene derivatives, by Ira Hatfield. AWPA Proc. 1935.

PRESERVATIVES (Continued)

Evaluation of Properties (Continued)

Journal Articles (Continued)

A theory of the mechanism of the protection of wood by preservatives (Continued):

Pt. 3. Experimental proof of the theory by means of the toxicity and solubility partition of a number of tar acids, by E. Bateman. AWPA Proc. 18:70, 1922.


Pt. 5. Further work on hydrocarbons, by E. Bateman and C. Henningsen. AWPA Proc. 20:33, 1924.


Pt. 7. Some experiments on the toxicity of inorganic salts, by E. Bateman and R.H. Baechler. AWPA 23:41, 1927.

Processed Reports

*R1180 Experiments on toxicity, leaching, and fire-retarding effectiveness of Wolman salts, by R.H. Baechler. Information reviewed and reaffirmed 1959.

*1447 Experiments with preservatives for soybean glue and soybean-glued plywood, by F.H. Kaufert and J.O. Blew. Information reviewed and reaffirmed 1959.

*1682 Effects of wood preservatives on electrical moisture-meter readings. Information reviewed and reaffirmed. 1958.


*1757 Comparison of wood preservatives in Mississippi post study (progress report), by J.O. Blew and John W. Kulp. 1960.

*1761 Comparison of wood preservatives in stake tests (progress report), by J.O. Blew. 1960.
PRESERVATIVES (Continued)

Evaluation of Properties (Continued)

Processed Reports (Continued)

*D1773 Results of experiments on the effectiveness of various preservatives in protecting wood against marine-borer attack, by J.D. MacLean. Information reviewed and reaffirmed 1959.


*2114 Studies of the methodology of soil-block testing, by C.G. Duncan. 127 pp. 1958.

Technical Notes

*163 Determining penetration of wood preservatives.

Materials

Journal Articles

*Wood preservation statistics. Reported annually for the previous year. Forest Service, U.S. Dept. Agr. in cooperation with the AWPA (Proc.)


Processed Reports

Misc.*WP-7 Coal-tar creosote producers and dealers in the United States.

*WP-9 Zinc chloride producers and dealers in the United States.
PRESERVATIVES (Continued)

Materials (Continued)

Processed Reports (Continued)

*WP-50 Partial list of suppliers of pentachlorophenol wood preservat\es.
*WP-6 Partial list of producers and dealers of chemicals used in double-diffusion treatment of wood.
*761 The preservative treatment and staining of shingles, by F. L. Browne. Information reviewed and reaffirmed 1953.

Technical Notes

*177 Properties of a good wood preservative.

PRODUCTS

Crossties

Bulletins and Circulars


Journal Articles


PRODUCTS (Continued)

Crossties (Continued)

Journal Articles (Continued)


Processed Reports

*886 Percentage renewals and average life of railway ties, by J. D. MacLean. Information reviewed and reaffirmed 1957.


Lumber, Millwork, and Timbers

Journal Articles


*Some experiences of the Forest Service with treated wood, by J. O. Blew. AWPA Proc. 1955.
PRODUCTS (Continued)

Lumber, Millwork, and Timbers (Continued)

Journal Articles (Continued)


Processed Reports

*621 Preservative of timber by the steeping process. Information reviewed and reaffirmed 1959.

*761 The preservative treatment and staining of shingles, by F.L. Browne. Information reviewed and reaffirmed 1953.


*1006 Wood seats for stadiums. 1958.


**PRODUCTS (Continued)**

*Lumber, Millwork, and Timbers (Continued)*

**Processed Reports (Continued)**

*2077  Effects of moisture on bacterial weakening of casein-bonded plywood, by C.G. Duncan. 1957.

**Technical Notes**

*251  Prevention and control of decay in dwellings.

**Bulletins and Circulars**


**Journal Articles**


*Results of groundline treatments one year after application to western redcedar poles, by E. Panek. AWPA Proc. 1960.


PRODUCTS (Continued)

Posts, Poles, and Piling (Continued)

Journal Articles (Continued)


Pole service records: Report of Committee U-4 (Committee 7-7 prior to 1948). AWPA Proc. annually.


Processed Reports


*1726 Service tests on posts as a means of evaluating wood preservatives and methods of treatment, by J. O. Blew. 1955.

*1757 Comparison of wood preservatives in Mississippi post study (progress report), by J. O. Blew and John W. Kulp. 1960.


Products (Continued)

Posts, Poles, and Piling (Continued)

Processed Reports (Continued)


*2172  Determining preservative retention in piling by the assay of borings, by R.H. Baechler, 1959.

Technical Notes

*135  Split posts and round posts.

Other General Literature on Wood Preservation


American Railway Engineering Association Bulletin. Published monthly except in April, May, and August. Chicago 5, Ill.

Humphrey, C. J. Railroad tie decay: comprising the decay of ties in storage, by C. J. Humphrey; and, defects in crossties caused by fungi, by C. Audrey Richards. Washington 5, D. C., Amer. Wood-Preservers' Assn. 1939. 54 pp., illus. (All the material in this publication was prepared in cooperation with the Forest Products Laboratory.)


Snyder, T. E. Our enemy the termite. Ithaca, N. Y. Comstock Publishing Co., 1935. 196 pp., illus.
OTHER PUBLICATION LISTS ISSUED BY THE FOREST PRODUCTS LABORATORY

The following lists of publications which deal with the other investigative projects of the Forest Products Laboratory are obtainable upon request:

Boxing and Crating -- Strength and serviceability of shipping containers, methods of packing.

Building Construction Subjects -- Partial list of Government publications of interest to architects, builders, engineers, and retail lumbermen.

Chemistry of Wood and Derived Products -- Chemical properties and uses of wood and chemical wood products, such as turpentine, alcohol, and acetic acid.

Fire Protection -- Fire test methods, fire retarding chemicals and treatments, and fire behavior of treated and untreated wood, wood products, and wood structures.

Fungus Defects in Forest Products -- Decay, stains, and molds in timber buildings, and various wood products; antiseptic properties of protective materials.

Furniture Manufacturers, Woodworkers and Teachers of Woodshop Practice -- Partial list of Government publications on growth, structure, and identification of wood; moisture content, physical properties, air seasoning, and kiln drying; grading, manufacturing, and waste utilization; strength and related properties and joints and fastenings; glues and gluing, veneer and plywood fabrication; box and crate construction.

Glue and Plywood -- Development of waterproof glues, preparation and application of various glues, plywood manufacturing problems.

Growth, Structure, and Identification of Wood -- Structure and identification of wood; the effect of cellular strength of wood on its strength, shrinkage, permeability, and other properties; the influence of environmental factors such as light, soil, moisture, and fire, on the quality of wood produced; and secretions of economic value produced by trees and their exploitation.
Logging, Milling, and Utilization of Timber Products -- Methods and practices in the lumber-producing and wood-consuming industries; standard lumber grades, sizes, and nomenclature; production and use of small dimension stock; specifications for small wooden products; uses for little-used species and commercial woods; and low-grade and wood-waste surveys.

Mechanical Properties of Timber -- Strength of timber and factors affecting strength; design of wooden articles, or parts where strength or resistance to external forces is of importance.

Pulp and Paper -- Suitability of various woods for pulp and paper; fundamental principles underlying the pulping and bleaching processes; methods of technical control of these processes; relation of the chemical and physical properties of pulps and the relation of these properties to the papermaking qualities of the pulps; waste in the industry, for example, decay in wood and pulp, utilization of bark, white water losses, etc.

Seasoning of Wood -- Experimental and applied kiln drying, physical properties, air drying, steam bending.

Structural Sandwich, Plastic Laminates, and Wood-Base Aircraft Components -- Strength, selection, and character of aircraft wood, plywood, and wood and composite laminated and sandwich materials; fabrication and assembly problems; methods of calculating the strength.

Wood Finishing Subjects -- Effect of coatings in preventing moisture absorption; painting characteristics of different woods, and weathering of wood.

Note: Since Forest Products Laboratory publications are so varied in subject matter, no single big list is issued. Instead, a list is made up for each Laboratory division. Twice a year, December 31 and June 30, a list is made up showing new reports for the previous 6 months. This is the only item sent regularly to the Laboratory's mailing list. Anyone who has asked for and received the proper subject lists and who has had his name placed on the mailing list can keep up to date on Forest Products Laboratory publications. Each subject list carries descriptions of all other subject lists.