List of Publications on

GLUE, GLUED PRODUCTS, AND VENEER

July 1962

No. 513
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This list includes publications that present the results of research by the Forest Products Laboratory on the development of waterproof glues, preparation and application of various glues, plywood manufacturing problems, etc.

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INSTRUCTIONS FOR OBTAINING PUBLICATIONS

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

Single 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 often be purchased from the publishers or may be 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.
TYPES OF GLUES AND THEIR CHARACTERISTICS

Technical Notes

*F-2 Commercial liquid glues.
*104 Overheating reduces strength of animal glue.
*146 Occurrence and removal of glue stains.
*170 Copper salts improve casein glue.
*223 A factory method for testing hardness of glue joints.
*256 How to select a woodworking glue.
*257 Woodworking glues of natural origin.
*258 Synthetic resin glues for wood.

Processed Reports


Articles in Trade and Technical Press


TYPES OF GLUES AND THEIR CHARACTERISTICS (continued)

Articles in Trade and Technical Press (continued)


GLUING OF WOOD

Technical Notes

*193 Starved glue joints.
*211 Strong and weak glue joints.
*226 Glues for wood in archery uses.
*227 Tooth-planing not necessary to produce strong glued wood joints.
*232 Chemical treatment of surfaces improves joints with certain woods and glues.
*255 Hand-operated portable glue spreader.

Processed Reports

*1275 Strength tests of spliced studs. Revised 1959.
*1340 Control of conditions in gluing with protein and starch glues. Information Reviewed and Reaffirmed 1962.
*1342 The gluing characteristics of 15 species of wood with cold-setting, urea-resin glues. Information Reviewed and Reaffirmed 1962.
*1351 Preliminary experiments to improve the gluing characteristics of refractory plywood surfaces by sanding. Information Reviewed and Reaffirmed 1962.
*1422 Rate of setting of cold-setting, urea-resin glue joints. Information Reviewed and Reaffirmed 1959.
*1427 The effect of fire-retardant chemicals on glues used in plywood manufacture. Information Reviewed and Reaffirmed 1958.
Processed Reports (continued)


*1542 Strength of joints in hard maple blocks, glued with certain resin glues, after various open and closed assembly periods. Information Reviewed and Reaffirmed 1960.

*1546 Variation in maximum allowable assembly time with age in the pot at time of spreading for four resin glues. Information Reviewed and Reaffirmed 1960.

*1547 Rate of development of joint strength by four resin glues on eight species of wood. Information Reviewed and Reaffirmed 1962.

*1565 Development of strength in yellow birch lap joints glued with six resorcinol-resin glues at temperatures from 40° to 80° F. Information Reviewed and Reaffirmed 1962.

*1629 Curing of resorcinol-resin glues at temperatures from 40° to 80° F. Information Reviewed and Reaffirmed 1958.


*1694 Gluing of plywood to concealed framing members with high-frequency stray field heating. Information Reviewed and Reaffirmed 1960.


Adhesives and their application to fabrication of farm structures. 1960.


GLUING OF WOOD (continued)

Articles in Trade and Technical Press (continued)


Removing "weak link" in millwork: When properly made, glue joints can be made as strong as wood itself in most respects, by T. R. Truax. Wood Working Indus., May 1930.

Same: Glue practice. Timberman, May 1930.


GLUING OF WOOD (continued)

Additional Government Publications


GLUING OF MATERIALS OTHER THAN WOOD (Metals, Plastics, etc.)

Processed Reports


*1545 Resistance to fatigue stressing of wood-to-metal joints glued with several types of adhesives. Information Reviewed and Reaffirmed 1962.

*1548 Tensile strength at elevated temperature of glued joints between aluminum and end-grain balsa. Information Reviewed and Reaffirmed 1959.


*1573-C Durability of low-density sandwich panels of the aircraft type as determined by laboratory tests and exposure to weather. Information Reviewed and Reaffirmed 1960.

1Available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. $2.00
GLUING OF MATERIALS OTHER THAN WOOD
(Metals, Plastics, etc.) (continued)

Processed Reports (continued)

*1808 Strength of aluminum lap joints at elevated temperatures. (Tests conducted immediately after the temperature was reached.) Information Reviewed and Reaffirmed 1962.


*1842 Adhesive bonding properties of various metals as affected by chemical and anodizing treatments of the surfaces. (Addendum added.) Information Reviewed and Reaffirmed 1960.


*1862 General survey of data on the reliability of metal-bonding adhesive processes. 1957.
Processed Reports (continued)

*1865  Effect of surface treatment on the adhesive bonding properties of magnesium. 1958.


Articles in Trade and Technical Press


Articles in Trade and Technical Press (continued)


GLUING OF MATERIALS OTHER THAN WOOD
(Metals, Plastics, etc.) (continued)

Articles in Trade and Technical Press (continued)


DURABILITY OF GLUES

Technical Notes

*263 FPL show-through comparator for furniture panels.

Processed Reports


*1345 Effect of high and low temperatures on resin glue joints in birch plywood. Information Reviewed and Reaffirmed 1962.
DURABILITY OF GLUES (continued)

Processed Reports (continued)

*1447 Experiments with preservatives for soybean glue and soybean-glued plywood. Information Reviewed and Reaffirmed 1959.


*1729 Results of accelerated tests and long-term exposures on glue joints in laminated beams. Information Reviewed and Reaffirmed 1962.


*2077 Effect of moisture on bacterial weakening of casein-bonded plywood. 1957.


Articles in Trade and Technical Press

DURABILITY OF GLUES (continued)

Articles in Trade and Technical Press (continued)

*Effect of repeated loading and salt-water immersion on flexural properties of laminated white oak, by A. D. Freas and Fred Werren. Forest Products Jour. 9(2):100-103, Feb. 1959.


DURABILITY OF GLUES (continued)

Articles in Trade and Technical Press (continued)


PLYWOOD AND VENEERED PANELS

Technical Notes

*131 Properties of ordinary wood compared with plywood.
*149 Strength of screw fastenings in plywood.
*197 Veneered and solid furniture.
*260 Estimating the weight of plywood.

Processed Reports

*543 Manufacture and general characteristics of flat plywood. Revised 1961.
Processed Reports (continued)

*1299 The rate of temperature change in wood panels heated between hot plates. Information Reviewed and Reaffirmed 1960.


*1615 Some causes of variability in the results of plywood shear tests. Information Reviewed and Reaffirmed 1959.

*1624 Fluid pressure molding of plywood. Information Reviewed and Reaffirmed 1959.


*1788 Mandrel bending tests for aircraft veneer. Information Reviewed and Reaffirmed 1962.


*2140 Surface flammability of various wood-base building materials. 1959.

*2161 Structural sandwich design criteria. 1959.

*2165 Long-term case study of sandwich panel construction in FPL experimental unit. 1959.
PLYWOOD AND VENEERED PANELS (continued)

Articles in Trade and Technical Press


PLYWOOD AND VENEERED PANELS (continued)

 Articles in Trade and Technical Press (continued)

 Plywood in relation to the veneer package industry, by C. V. Sweet. Wood Products, Dec. 1939.


 Additional Government Publications


PARTICLE BOARD

Technical Notes

*263 FPL show-through comparator for furniture panels.

Processed Reports

*1666-21 Board materials from wood residues. Revised 1961.

*2072 Machining tests for particle board; some factors involved. 1957.


Articles in Trade and Technical Press


LAMINATED WOOD AND GLUED ASSEMBLIES

Technical Notes

*140 Stresses in laminated wood construction.
*244 How to make a laminated diving board.

Processed Reports

*1275 Strength tests of spliced studs. Revised 1959.
*1611 Laminated oak frames for a 50-foot Navy motor launch compared to steam-bent frames. Information Reviewed and Reaffirmed 1962.
*1686 Shear strength and accelerated durability tests on glue joints in laminated red oak beams applicable to such uses as truck bodies, wagons, and implement parts. Information Reviewed and Reaffirmed 1962.
*1714 Durability of resorcinol glue bonds in gusset-type assembly joints similar to those used in wood boats. Information Reviewed and Reaffirmed 1962.
*1729 Results of accelerated tests and long-term exposures on glue joints in laminated beams. Information Reviewed and Reaffirmed 1962.
*1789 Summary of information on gluing of treated wood. Revised 1959.
*1877 Deflection characteristics of two 20-foot-diameter laminated wood rings subjected to compressive loading along a diameter. 1960.
*2113 Light wood trusses. 1958.
Processed Reports (continued)

*2121  Sandwich panels for building construction.  1958.

*2156  Stiffness and bending strength of beams laminated from two species of wood.  1960.

*2178  Adhesives and their application to fabrication of farm structures.  1960.


*2229  Evaluation of the stiffness of a roof system made of glued-laminated beams and heavy timber decking.  1961.

Articles in Trade and Technical Press


*Effect of repeated loading and salt-water immersion on flexural properties of laminated white oak, by A. D. Freas and Fred Werren. Forest Products Jour. 9(2):100-103, Feb. 1959.


LAMINATED WOOD AND GLUED ASSEMBLIES (continued)

Articles in Trade and Technical Press (continued)


*Laminated timber permits flexibility of design, by A. D. Freas. Civil Eng. 22(9):172-175, Sept. 1952.


Additional Government Publications

LAMINATED WOOD AND GLUED ASSEMBLIES (continued)

Additional Government Publications (continued)


VENEER

Processed Reports


Veneer cutting and drying properties:

   -8 Redwood. Revised 1959.
   -13 Aspen and hybrid poplar. 1957.
   -14 Pacific madrone. 1959.


*2149 Heating rates for logs, bolts, and flitches to be cut into veneer. 1959.

*2151 Outdoor exposure of container-grade paper-overlaid veneers. 1959.

Articles in Trade and Technical Press


*Investigating rotary veneer cutting with the aid of a tension test, by Eero Kivimaa. Forest Products Jour. 6(7):251-255, July 1956.


Articles in Trade and Technical Press (continued)


**VENEER (continued)**

**Articles in Trade and Technical Press (continued)**


**FUNDAMENTALS OF ADHESION**

**Processed Reports**


*2183* Proceedings of the symposium on adhesives for the wood industry held at U.S. Forest Products Laboratory, Madison, Wis., January 13-15, 1960.
Articles in Trade and Technical Press


RELATED PUBLICATIONS

Technical Notes

*240 A hundred definitions pertaining to wood and other forest products.

Processed Reports

*399 Some books about wood (a list). 1961
RELATED PUBLICATIONS (continued)

Processed Reports (continued)


*1809  Effect of defects on strength of aircraft-type sandwich panels. Information Reviewed and Reaffirmed 1962.


*2148  Portable equipment for measuring twist in doors. 1959.

*2186  Your career in forest products research, by H. O. Fleischer. 1960.

Articles in Trade and Technical Press


RELATED PUBLICATIONS (continued)

Articles in Trade and Technical Press (continued)


*Opportunities for graduate students in forest products. 24 pp., Jan. 1960.

*Recent progress in forest products research, by E. G. Locke. South. Lbrmn. 199(2489);104-107, Dec. 1959.


Opportunities of forest products research on glues, gluing, and glued wood products, by G. N. Arneson. Natl. Farm Chemurgic Council (Columbus, O.) Paper 510, 3 pp., 1946.

Temperatures obtained in timbers when the surface temperature is changed after various periods of heating, by J. D. MacLean. AWPA Proc. 42: 87-139, 1946.


RELATED PUBLICATIONS (continued)

Articles in Trade and Technical Press (continued)


Additional Government Publications

*FPL 1961: Annual report of the Forest Products Laboratory for calendar year 1961.


Additional Government Publications (continued)


 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 Crate**—Strength and serviceability of shipping containers, methods 
of packing.

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

**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 Wood Shop 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.

**Growth, Structure, and Identification of Wood**—Structure and identification 
of wood; the effect of cellular structure 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.

**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, weathering of wood.

Wood Preservation--Preservative materials and methods of application; durability and service records of treated and untreated wood in various forms.

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.