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FOREST PRODUCTS LABORATORY LIST OF PUBLICATIONS ON GLUE, GLUED PRODUCTS, AND VENEER

Forest Products Laboratory Madison, Wisconsin

April 1968

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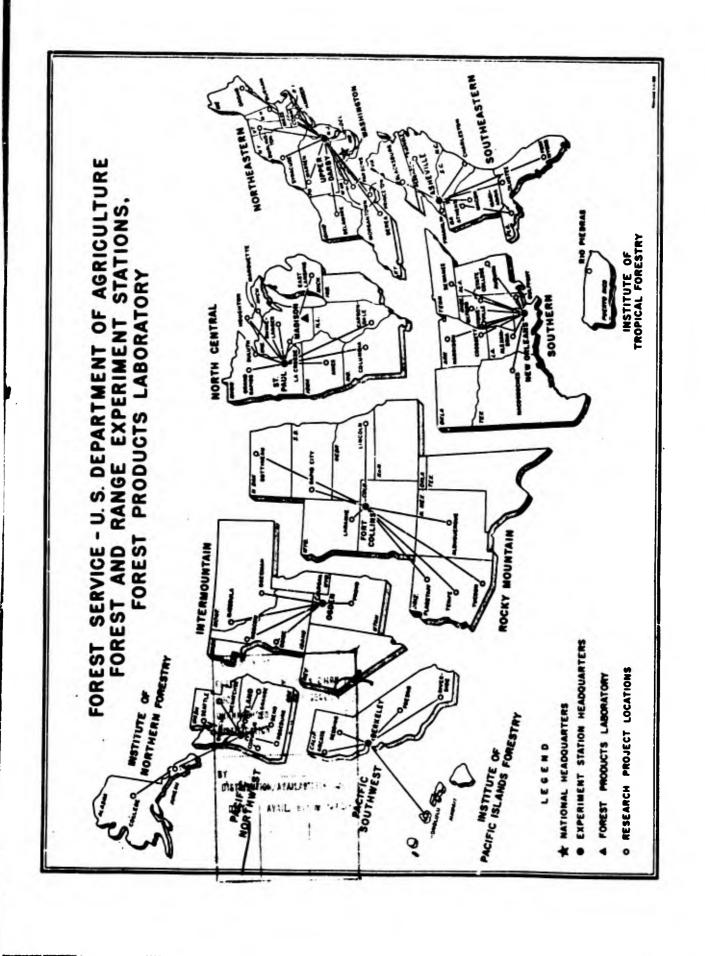
FOREST PRODUCTS LABORATORY
LIST OF PUBLICATIONS
ON
GLUE, GLUED PRODUCTS, AND VENEER

APRIL 1968

U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE FOREST PRODUCTS LABORATORY. MADISON, WIS. 53705

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FOREST PRODUCTS LABORATORY LIST OF PUBLICATIONS

ON

GLUE, GLUED PRODUCTS, AND VENEER

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 not available for distribution at this Laboratory are marked with an asterisk (*).

Single reports may be obtained free upon request from the Director, Forest Products Laboratory, Madison, Wis. 53705.

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, D.C. 20402, 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.

68-006

Title : Author : Publication and date

TYPES OF GLUES AND THEIR CHARACTERISTICS

of selected adhesives in free		: U.S. Forest Serv. Res. : Note FPL-0157. 1967.
Selection and properties of wood-working glues.	• : :	: U.S. Forest Serv. Res. : Note FPL-0138. 1966.
- /		: U.S. Forest Serv. Res. : Note FPL-0141. 1966.
*Adhesives.		Reprinted from Ency- clopedia of Chem. Tech. 2d ed. 1963, Vol. 1, 371-405.
*Epoxy-resin adhesives for gluing wood.		: : Forest Prod. J. 12 : (2):74-80, Feb. 1962.
*Progress in glues and gluing processes.	_	: Forest Prod. J. 12 : (2):49-58, Feb. 1962.
*An evaluation of 21 rubber-base adhesives for wood.	<u>-</u>	: Forest Prod. J. 10 : (10):494-502, Oct. 1960.
*An international look at glues and gluing.	<u>-</u>	: Forest Prod. J. 10 : (2):62-70, Feb. 1960.
Occurrence and removal of glue stains.		: FPL Tech. Note 146. Reissued 1958.
The ideal gluehow close are we?		: Forest Prod. J. 7 (5): : 163-167, May 1957.
*Better glues.	_	South. Lbrmn. 194(2418): 43-47, Jan. 1957.
*Polyvinyl-resin emulsion wood- working glues.		: : Forest Prod. J. 5 : (4):219-226, Aug. 1955.

^{*}Not available for distribution from the Forest Products Laboratory.

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	TYPES OF GLUES AND TH	HEIR CHARACTERI	STICS (continued)
	Copper salts improve casein glue.	: Forest Products : Laboratory	: FPL Tech. Note 170. : Reissued 1953.
	Overheating reduces strength of animal glue.		FPL Tech. Note 104. Reissued 1953.
	Animal glues: Their manufacture, testing and preparation.		: FPL Rep. 492. 1929. : +1960.
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	Gluing ammonium-salt-treated southern pine with resorcinol-resin adhesives.	·	: U.S. Forest Serv. Res. : Note FPL-0151. 1967. :
	Preliminary study of the gluing of ammonium salt-treated wood with resorcinol-resin glues.		: U.S. Forest Serv. Res. : Note FPL-0112, 1966.
	nium salt fire retardants and		Forest Prod. J. 16 (5):23-30. May 1966.
	Behavior of an epoxy-polysulfide adhesive in wood joints exposed to moisture content changes.	_	U.S. Forest Serv. Res. Paper FPL 24. 1965.
	_		U.S. Forest Serv. Res. Note FPL-0102, 1965,
	Experimental techniques for determining mechanical behavior of flexible structural adhesives in timber joints.		U.S. Forest Serv. Res. Paper FPL 21. 1965.

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GLUING OF WOOD (continued)

A comparison of the block shear,: Stanger, A.G., &: Forest Prod. J. 15 cross-lap tension, and glueline : Blomquist, R.F.: (12):468-474, Dec. 1965. cleavage methods of testing glued joints. Performance of a rigid and a : Krueger, G.P., & U.S. Forest Serv. Res. flexible adhesive in lumber joints: Blomquist, R.F.: Note FPL-076. 1964. subjected to moisture content changes. Control of conditions in gluing : Forest Products : U.S. Forest Serv. Res. with protein and starch glues. : Laboratory : Note FPL-050. 1964. Adhesives -- past, present, and : Blomquist, R.F.: ASTM 1963. Edgar future. : Marburg Lecture. *Adhesives for structural : Selbo, M.L. : Adhesives Age 4(2): laminated lumber. : 22-25, Feb. 1961. Chemical treatment of surfaces: Forest Products : FPL Tech. Note 232. improves joints with certain : Laboratory : Rev. 1961. woods and glues. Effect of solvent on gluing of : Selbo, M. L. : Amer. Woodpreservative-treated red oak, : Preservers' Assn. Douglas-fir, and southern pine. : 1961. *Progress in 1960...glues and : Blomquist, R.F.: Forest Prod. J. 11 gluing processes. : (2):77-85, Feb. 1961. *The future of adhesives in the : Blomquist, R.F., : Forest Prod. J. 10 wood industry. : & Fleischer, H.O.: (12):626-630, Dec. 1960. The gluing of treated lumber. : Selbo, M.L. : Amer. Wood-: Preservers' Assn.

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Starved g	lue joints.		: : FPL Tech. Note 193, : 1960.
Strength t	ests of spliced studs.	: Erickson, E.C.Q.	: : FPL Rep. 1275. : Revised 1959. +1965.
	of information on reated wood.		: : FPL Rep. 1789. : Revised 1959. +1965.
Tooth-plan	ning not necessary to trong glued wood joints.		: FPL Tech. Note 227. : Rev. 1957.
Glued stru	actural members.	Laboratory	Separate from Wood Handb. USDA Agr. Handb. No. 72. 1955.
	, tanozk, California ;		FPL Rep. 2030. 1955. +1960.
Gluing of v		Laboratory :	Separate from Wood Handb. USDA Agr. Handb. No. 72. 1955.
Gluing tecl	hniques for beech.	Blomquist, R.F.:	Beech Util. Series No. 5. Northeastern Forest

Glues for wood in archery uses. : Forest Products : FPL Tech. Note 226. : Laboratory

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Development of strength in yellow: Olson, W.Z., &: FPL Rep. 1565. 1947. birch lap joints glued with six: Blomquist, R.F.: +1962. resorcinol-resin glues at tem-: peratures from 40° to 80° F.:

Cluing of plywood to concealed : Bell, E.R., & : FPL Rep. 1694. 1947. framing members with high- : Dunlap, M.E. : +1960.

Curing of resorcinol-resin glues: Olson, W.Z., : FPL Rep. 1629. 1946. at temperatures from 40° to : Bruce, H.D., & :+1964. : Soper, V.

Glues and gluing in prefabricated: Arneson, G.N.: Miss. Valley Lbrmn.
house construction.: May 10, 17, 1946.
Cosgrove's Mag., MayJune 1946.

Rate of development of joint : Olson, W.Z., : FPL Rep. 1547. 1946. strength by four resin glues on eight species of wood. : Soper, V. : +1962.

Strength of joints in hard maple : Bruce, H.D., & : FPL Rep. 1542. 1946. blocks, glued with certain resin : Olson, W.Z. : +1960. closed assembly periods.

Variation in maximum allowable: Olson, W.Z., &: FPL Rep. 1546. 1946. assembly time with age in the : Bruce, H.D. :+1962. pot at time of spreading for four: resin glues.

Experiments on the gluing of : Kaufert, F.H., &: FFL Rep. 1484. 1945. wood treated with oil solutions of: Hutchins, W.F. :+1961.

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Development of joint strength in birch plywood glued with phenol- resorcinol-, and melamine- resin glues cured at several temperatures.			: FPL Rep. 1531. 1944. : +1960. :
The effect of fire-retardant chemicals on glues used in plywood manufacture.		Products tory	: FPL Rep. 1427. 1942. :*+1963.
The gluing characteristics of 15 species of wood with cold-settin urea-resin glues.			: FPL Rep. 1342. : Revised 1942. +1962.
*Gluing wood in aircraft manu- facture.	: Truax,	T. R.	: USDA Tech. Bull. 205. : 1930. 25 cents.
The gluing of wood.	: Truax,	T. R.	: USDA Bull. 1500. 1929
Important factors in gluing with animal glue.		Products tory	: : FPL Rep. 869. 1929. : +1965.
GLUING OF MAT	ERIALS (THER TH	AN WOOD
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Adhesives for bonding wood to metal.	: Forest		: U.S. Forest Serv. Res. : Note FPL-082. 1964.
Determination of mechanical properties of adhesives for use in the design of bonded joints.	: Kuenzi, : Stevens		: U.S. Forest Serv. Res. Note FPL-011. 1963.

the properties of high-pressure: Haskell, H. H.

Importance of balanced con-

Effect of heat and humidity on

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: Heebink, B. G.

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: (11):542-548, Nov. 1962.

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Polymer structure and the thermal deterioration of adhesives in metal joints. Pts. 1 and 2.	Blomquist, R. F.:	
*Paper overlays on low-grade lumber.	:	The Northeastern Logger 10(4):14-15, 34-36, 43, Oct. 1961.
*How to balance plastic-faced wood panels.		Wood and Wood Prod. 66(6):38, 40, June 1961.
•	Black, J. M., & Blomquist, R. F.	FPL Rep. 1883. 1961.
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Bonding wood veneer flooring to concrete subfloors.	:	Veneers and Plywood 53(9):18-19, 21, 24, Sept. 1959.
*Adhesive deterioration in metal bonds at high temperatures.	: Black, J. M.	Adhesives Age 2(5):34-39, May 1959. 2(6): 27-38, June 1959.
		Indus. & Eng. Chem. 50(6):918-921, June 1958.

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Effect of surface treatment on : Eickner, H. W. : FPL Rep. 1865. 1958. the adhesive bonding properties: of magnesium.

: +1965.

*Weathering of adhesive~ bonded lap joints of clad alumi -: num alloy.

: Eickner, H. W.

: WADC Tech. Rep. 54-477. : Pt. I. Feb. 1955. Pt. II.

: (ASTIA Doc. AD-130879).

: July 1957. Available

: from Research & Technical : Div., ML (MAAE), Wright-: Patterson Air Force Base,

: Ohio.

Climbing peel test for strength : Werren, F., & of adhesive bonds.

: Modern Plastics, : Eickner, H. W. : Dec. 1956.

*Tensile strength of adhesive bonds in sandwich with aluminum facings and aluminum honeycomb cores.

: Kuenzi, E. W.

: Setterholm, V. C.,: WADC Tech. Rep. 56-386. : Eickner, H. W., &: (ASTIA Doc. AD-11049).

: Oct. 1956. Available from : Research & Technical Div.,

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*Development and evaluation of the climbing peel method for testing adhesive bonds in sandwich and metal-to-metal constructions.

: Werren, F.

: Eickner, H. W., &: WADC Tech. Rep. 56-239. : (ASTIA Doc. AD-97294).

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: Patterson Air Force Base,

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*Metal-bonding adhesives for high-temperature service.

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: Blomquist, R. F. : 250, June 1956.

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*High strength adhesives for : Blomquist, R. F.: Machine Design 28(11): metal bonding. : 99-103, May 31, 1956. Adhesive bonding properties of : Eickner, H. W. : FPL Rep. 1842-A. various metals as affected by : 1955. +1960. chemical and anodizing treatments of the surfaces (Pt. A--Additional tests on anodized aluminum and on zinc-chromate: primed magnesium). Basic shear strength properties: Eickner, H. W.: FPL Rep. 1850. 1955. of metal-bonding adhesive as : +1960. determined by lap-joint stress formulas of Volkersen and Goland and Reissner. Durability of low-density sand- : Setterholm, V.C.,: FPL Rep. 1573-C. wich panels of the aircraft type: Heebink, B.G., &: 1955. +1960. as determined by laboratory : Kuenzi, E. W. tests and exposure to weather. Metal-bonding adhesives with : Black, J. M., & : Modern Plastics, improved heat resistance. : Blomquist, R. F.: Dec. 1954. * Comparisons of test methods for: Eickner, H. W., &: WADC Tech. Rep. 54-138. evaluating adhesives for bonding: Werren, F. : July 1954. Available from metal facings to metal honey-: Research & Technical Div., comb cores. : ML (MAAE), Wright-: Patterson Air Force Base, : Ohio. Development of improved struc-: Black, J. M., & : FPL Rep. 2008. 1954. tural epoxy-resin adhesives and: Blomquist, R. F.: +1965. bonding processes for metal.

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(Metals, Plastics, etc.)

*Gluing tests with room-tem-: Eickner, H. W. : Air Force Tech. perature-setting adhesives to : Rep. 5928. Aug. 1949. fabric-base plastic laminates. Strength of aluminum lap joints: Kuenzi, E. W. : FPL Rep. 1808. 1949. at elevated temperatures. : +1962. (Tests conducted immediately after the temperature was reached.) Gluing of thin compreg. : Eickner, H. W., &: FPL Rep. 1346. 1946. : Bruce, H. D. : +1962. Resistance to fatigue stressing : Eickrer, H. W. : FPL Rep. 1545. 1946. of wood-to-metal joints glued : +1962.

DURABILITY OF GLUES

Performance of melamine-resin: Selbo, M. L. : Forest Prod. J. adhesives in various exposures.: : 15(12):475-483, : Dec. 1965. After two decades of service : Selbo, M. L., : Forest Prod. J. glulam timbers show good per-: Knauss, A. C., &: 15(11):466-472, formance. : Worth, H. E. : Nov. 1965. Accelerated aging of adhesives : Gillespie, R. H. : Forest Prod. J. in plywood-type joints. : 15(9):369-378, : Sept. 1965. Durability of fortified urea-: Blomquist, R. E, & Forest Prod. J. resin glues exposed to exterior : Olson, W. C. : 14(10):461-466, weathering. : Oct. 1964.

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^{*}Not available for distribution from the Forest Products Laboratory.

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: Cillespie, R. H., : Olson, W. Z., & : Biomquist, R. F.	: 14(8): 343-349,
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Selbo, M. L.	: South. Lbrmn. 197(2465): : 171-178, Dec. 15, 1958. :
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	Preprint Forest Prod. Res. Soc. 8th Annual National Meeting, Grand Rapids, Mich. May 1954.
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	Olson, W. Z., & Biomquist, R. F. Lutz, J. F. Blomquist, R. F., & Black, J. M. Freas, A. D., & Werren, F. Selbo, M. L. Blomquist, R. F. & Olson, W. Z. Duncan, C. G. Blomquist, R. F. & Olson, W. Z. Blomquist, R. F. & Olson, W. Z.

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Current investigations of the durability of woodworking adhesives.		: ASTM symposium on : testing adhesives for : durability and permanence. : STP No. 138. 1952.
*The durability of birch plywood: treated with wood preservatives: and fire-retarding chemicals. :		: Amer. Wood-Preservers' : Assn. Proc. 1950.
Durability of papreg-to-papreg: and papreg-to-birch glue joints:		: : FPL Rep. 1538. : Rev. 1950. +1962.
Durability of woodworking glues: for dwellings.		Forest Prod. Res. Soc. Proc. 1949.
*Tests on the durability of wood- working glues.	:	South. Lbrmn. 174(2184): 63-64, 66, 68, 70, 74, Apr. 1, 1947.
Durability of glue joints : between blocks of compreg and : of compreg and wood.		FPL Rep. 1536. 1945. +1960.
	Black, J.M., : Olson, W.Z., & : Bruce, H.D. :	FPL Rep. 1339. 1945. +1961.
Durability of water-resistant : woodworking glues.		FPL Rep. 1530. 1944. Reprinted 1963.

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Effect of high and low tempera-: Blomquist, R. F.: FPL Rep. 1345.

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	Surface flammability of various wood-base building materials.		: U.S. Forest Serv. Res. : Note FPL-0186. 1968.
	Some factors affecting southern pine veneer and plywood quality.	•	: South. Lbrmn. 210(2619): 22-25, June 1, 1965.
:	*A look at new problems facing* hardwood plywood.	Youngs. R.L.	: Wood and Wood Products : 70(5):38-42, May 1965.
	The bending strength and stiff- ness of plywood.	Freas, A.D.	: U.S. Forest Serv. Res. : Note FPL-059. 1964.
	Experiments in gluing southern pine veneer.		: U.S. Forest Serv. Res. : Note FPL-032. 1964.
	Manufacture and general characteristics of flat plywood.		. U.S. Forest Serv. Res. : Note FPL-064. 1964.
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Portable apparatus for surface evaluation of furniture panels.		: U.S. Forest Serv. Res. : Note FPL-015. 1963.
Properties of ordinary wood compared with plywood.	: Forest Products : Laboratory	: FPL Tech. Note 131. : Reissued 1962.
*Trends and troubles veneer and plywood 1959.	: Lutz, J.F. :	: : Forest Prod. J. 10 : (2):119-122, Feb. 1960.
Veneered and solid furniture.	: Forest Products : Laboratory	: FPL Tech. Note 197. : 1960.
Structural sandwich design criteria.	: : Kuenzi, E.W. :	: FPL Rep. 2161. 1959. : Reprinted 1963.
Effect of resin treatment and compression upon the weathering properties of veneer laminates.	: Lloyd, R.A., & :Stamm, A.J.	: Forest Prod. J. 8 : (8):230-235, Aug. 1958. : :
*Our changing veneer and ply- wood industry.		: : Forest Prod. J. 6 : (2):50-53, Feb. 1956.
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New veneer-lumber flooring developed for concrete slabs.		: : South. Lbrmn. 191(2393): : 169-170, Dec. 15, 1955.

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Plywood and other crossbanded products.	: Forest Products : Laboratory :	: Separate from Wood : Handb. USDA Agr. Handb. : No. 72. 1955.
Structural sandwich construction.	: Forest Products : Laboratory :	: Separate from Wood : Handb. USDA Agr. Handb. : No. 72. 1955.
Mandrel bending tests for air- craft veneer.	: : Pillow, M.Y. :	: : FPL Rep. 1788. 1950. : +1962.
Effect of plywood glue lines on the accuracy of moisture-meter indications.	: Bell, E.R., & : Krueger, N.T.	: : Forest Prod. Res. Soc. : Proc. 1949. :
Fluid pressure molding of plywood.		: : FPL Rep. 1624, 1946, : +1965.
Some causes of variability in the results of plywood shear tests.	Bensend, D.W., & Preston, R.J.	: : FPL Rep. 1615. 1946. : +1959.
Fire resistance tests of ply- wood-covered wall panels.	McNaughton, G.C.	: : FPL Rep. 1257. 1940. : +1961.
Fabricated wall panels with plywood coverings.		: : FPL Rep. 1099. 1936. : +1960.

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A procedure for quickly evaluating dimensional stability of particle boards.		: Forest Prod. J. 17(9): : 77-80, Sept. 1967.
A look at degradation in particleboards for exterior use		: : Forest Prod. J. 17(1): : 59-66, Jan. 1967.
Thick particleboards with pulp chip corespossibilities as roof decking.	: Heebink, B.G., &c.: Lewis, W.C.	U.S. Forest Serv. Res. Note FPL-0174. 1967.
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Particleboard quality as affected by planer shaving geometry.	: Heebink, B.G., : Hann, R.A., & : Haskell, H.H.	Forest Prod. J. 14(10): 486-494, Oct. 1965.
A proposed plug tension test for particle board.	Heebink, B. G., &: : Gatchell, C.J.	Forest Prod. J. 15(1): 28-30, Jan. 1965.
Free-close molding versus molding to stops in wood-resin blend processing.	: Gatchell, C.J., & : : Heebink, B.G.	U.S. Forest Serv. Res. Note FPL-0103. 1965.
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Effect of particle geometry on properties of molded wood-resin blends.	: Gatchell, C.J., &: : Heebink, B.G.	Forast Prod. J. 14(11): 501-506, Nov. 1964.
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Box and Crate Construction and Packaging Data

Mechanical Properties and Structural Uses of Wood and Wood Products

Chemistry of Wood

Modified Woods, Paper-Base Laminates, and Reinforced Plastic Laminates

Drying of Wood

Sandwich Construction

Fire Performance

Thermal Properties of Wood

Fungus and Insect Defects in Forest Products

Wood Fiber Products

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Wood Finishing Subjects

Glue and Plywood

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