

TECHNICAL NOTES

FOREST PRODUCTS LABORATORY

LO-11
377

U. S. FOREST SERVICE

MADISON, WISCONSIN

No. F-18

EFFECT OF AGE ON CASEIN GLUES

That casein glues can be successfully used any time after mixing up to the time they become unworkable is the conclusion drawn from a number of tests at the Forest Products Laboratory. Ordinarily, casein glues exhibit a life of from 3 to 5 hours, though there are some which remain useable over a much longer period. The laboratory has from time to time received inquiries as to whether or not these glues could be relied upon to give as satisfactory strength and water resistance after three or more hours as they do immediately after mixing.

To study this question, shear blocks and plywood panels were made up hourly starting at the time the glue was mixed and continuing until the glue became so thick that it was unworkable. The blocks were allowed to season for 7 days and were then tested in shear in the usual manner; the panels were given shear tests, 8-hour boiling tests, and 10-day soaking tests. Results of the tests on one commercial glue are shown in tables 1 and 2. These are typical of the results obtained with other glues.

Table 1. Results of joint strength tests.

Age of glue in hours	Average shearing strength in lbs./sq. in.	Percentage of wood surface in failure
1/2	2170	24
1-1/2	2137	51
2-1/2	2276	58
3-1/2	2453	3
5	2098	23

Table 2. Results of plywood water resistance and strength tests.

Age of glue in hours	Condition after boil- ing 8 hrs.	Condition after soak- ing 10 days	Ave. shearing strength in lbs./sq. in.
1/2	O.K.	O.K.	261
1-1/2	O.K.	O.K.	289
2-1/2	O.K.	O.K.	349
3-1/2	O.K.	O.K.	294
5	O.K.	O.K.	257