

TECHNICAL NOTE NUMBER 223

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FOREST PRODUCTS LABORATORY

MADISON 5, WISCONSIN

REVISED December 1952

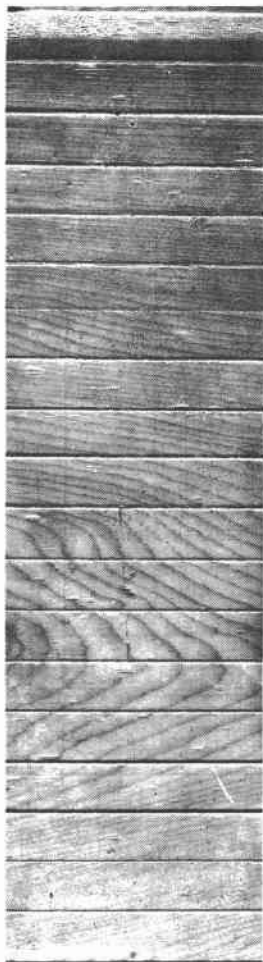
A FACTORY METHOD FOR TESTING HARDNESS OF GLUE JOINTS

Woodworkers have found that glues are usually more abrasive than wood and that tools dull rather quickly in the machining of glued products. Some glues are harder than others, and, if the glue line of a joint made with a very hard glue is allowed to pass its entire length several times over the same spot in a planer or jointer knife, a nick is very likely to develop that is expensive to remove. In many cases, therefore, it would pay a manufacturer to select a glue for his particular requirements that is the least abrasive of those having the qualities he desires.

The Forest Products Laboratory suggests the following test to determine the comparative hardness of joints made with different glues.

A number of pieces of wood (preferably softwoods) are glued together face to face, each individual joint being produced with one of the glues to be tested. Since the effect on the knife depends, in part, on the thickness of the glue line as well as the type of glue, the gluing procedure should be the same as that most commonly used in the plant. After the laminated block has been allowed to condition for a week or more, one edge is cleaned of excess glue and squared up. The block is then run repeatedly over a jointer in such a way that each glue line passes over only one spot in the cutter. The depths of the respective nicks caused by the hard glue lines are then a rough measure of the abrasive effect of the glues.

It is rather difficult, however, to detect differences in the nicks by a mere visual inspection. A better means of comparison is afforded if a smoothly planed softwood board is run across the dull knives. The accompanying illustration shows a soft pine board that has been run across the jointer knives in the manner described. In this case the nicks were the result of jointing a laminated block in which 17 different varieties of commercial glues were used. The block was run over the jointer repeatedly until about 60 linear feet of each glue line had passed over.



"Relief map" of different degrees of hardness, recorded on a softwood board by nicks made in the jointer knife.