

## STARVED GLUE JOINTS

Many failures in glued-up wood are caused by "starved" joints, or joints in which the film of glue between the wood surfaces is not continuous. Such joints, according to the Forest Products Laboratory, Madison, Wisconsin, are not necessarily the result of a lack of glue spread on the wood; heavy spreads are as likely to produce them under ordinary commercial conditions as light spreads. They are caused rather by the application of pressure to the joint while the glue is too fluid.

Starved joints are more likely to occur with glues of low viscosity, such as warm animal glue and most blood albumin glues, than with casein, vegetable, and other thick glues.

Some woods are more susceptible to the production of starved joints than others. Birch, maple, red oak, and ash, which have open pores, absorb glue from the spread in such considerable amounts that they often leave the joints starved. Basswood and yellow poplar also take up a great deal of glue, but weak joints are not very noticeable in these woods because the woods themselves are weak. Other woods with smaller cells open to the gluing surface do not seem to be so subject to starved joints.

To avoid starved joints it is necessary to mix a glue solution thick or allow it to thicken on the wood from drying or chilling before pressure is applied. When it is necessary to glue under conditions which might produce starved joints, the use of light pressure is advantageous.