

TECHNICAL NOTES

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

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MOISTURE ABSORPTION THROUGH VARNISH SAME FOR DIFFERENT SPECIES OF WOOD

In experiments made by the Forest Products Laboratory, it was found that varnishes do not entirely prevent the transmission of moisture into wood but merely retard it, and that apparently there is no difference in moisture absorption through the coating due to the species of wood used.

The panels used in the experiments were of yellow birch, basswood, red gum, African mahogany, white ash, white pine, Sitka spruce, southern yellow pine, bald cypress, incense cedar, white oak, western yellow pine, Port Orford cedar, and sugar pine.

Three coats of high-grade spar varnish were applied to 4 panels of each species. Two panels of each species were brush-coated and 2 were dipped by a special dipping machine designed to secure an even coating. The panels were allowed to dry 72 hours between coats and 10 days after the final coat before they were given the moisture-resistance test.

The moisture-resistance test consisted in exposing the panels for 17 days to a humidity of 95-100 per cent, or in an atmosphere practically saturated with moisture.

At the end of this test, it was found that all the brush-coated panels had absorbed between 5 and 6.5 grams of moisture per square foot of surface, and the dipped panels between 4 and 5 grams. Such variations in amount of absorption as appeared could easily have been due to inequalities in the application of the varnish. It was quite noticeable that the dipping process produced a more moisture-resistant coating than brushing.