

TECHNICAL NOTES

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

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COMPARISON OF MOISTURE RESISTANCE TESTS FOR COATINGS

In testing the effectiveness of wood coatings in preventing the passage of moisture, it might be assumed that immersion in water would be much more severe than exposure to moisture-saturated air. Recent tests at the Forest Products Laboratory, however, showed little difference between the two tests for exposure periods up to 17 days.

Five sets of birch panels with various coatings were tested, first by exposure for 17 days to a humidity of 95 to 100 per cent and later by actual immersion for the same period in water. At the end of these periods, the panels were weighed and the gain in weight taken as the amount of moisture transmitted through the coating.

Relative Severity of Water and Humidity Exposures			
No. of speci- mens averaged:	Treatment	Absorption of moisture in grams per square foot in 17 days	
		Water exposure	Humidity exposure
1	: Filler + 3 brush coats of : rubbing varnish	9.61	7.70
2	: Filler + 3 brush coats of : spar varnish A	12.60	12.24
2	: Filler + 3 brush coats of : spar varnish B	19.58	18.82
2	: Filler + 3 brush coats of : spar varnish C	17.04	12.42
7	: Filler + 1 coat of rubbing : varnish + 1 coat of rubbing : varnish size + aluminum : leaf + 2 coats of spar var- : nish	.59	.45

If the tests were continued for much longer periods, it is possible that the absorption would be considerably greater by the soaking method, on account of injury of the coating by the water.