

TECHNICAL NOTES

A13005-F12

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

No. F-12

EFFECT OF NUMBER OF COATS ON THE MOISTURE

RESISTANCE OF SPAR VARNISH

Recent experiments at the Forest Products Laboratory have provided some information concerning the relative protection against water afforded by various numbers of coats of spar varnish.

For these experiments three varnishes were selected from about forty brands tested, the first varnish being one of the best of the forty, the second a little better than the average, and the third a little below the average. From two to twelve coats of each varnish were applied to panels of yellow birch, which were then exposed 17 days to a humidity of 100 per cent. The results are given in the accompanying table.

Comparative Reduction in Absorption of Moisture and Swelling Caused by Different Numbers of Coats of Spar Varnish Exposed for a Period of 17 Days in a Saturated Atmosphere

:No. of :coats :of :spar :varnish	:Percentage of moisture :excluded (based on un- :treated specimens)			:Percentage of increase :in width due to absorp- :tion of moisture		
	: 1st :varnish	: 2nd :varnish	: 3rd :varnish	: 1st :varnish	: 2nd :varnish	: 3rd :varnish
: 0	: 0.0	: 0.0	: 0.0	: 8.61	: 8.61	: 8.61
: 2	: 76.7	: 72.0	: 65.5	: 2.01	: 2.41	: 2.97
: 4	: 86.2	: 75.8	: 76.9	: 1.19	: 2.08	: 1.99
: 6	: 88.6	: 81.7	: 83.0	: 0.98	: 1.57	: 1.46
: 8	: 91.0	: 86.9	: 86.2	: 0.77	: 1.30	: 1.19
: 10	: 93.0	: 88.4	: 87.3	: 0.60	: 1.00	: 1.09
: 12	: 94.3	: 89.0	: 87.2	: 0.49	: 0.90	: 1.10

It will be noted that two coats of the first varnish were about as effective as four coats of either of the other two, and that four coats of the first varnish were about as effective as six to twelve coats of either of the others. The first varnish gave increasing moisture resistance with each additional coat, but practically nothing was gained by adding more than six coats of the others.