

TECHNICAL NOTES

A13005-F5

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

No. F-5.

SCRATCHED JOINTS VERSUS SMOOTH JOINTS IN GLUING

The common assertion that scratched surfaces make stronger glued joints than smooth surfaces seems hard to prove. Comparative tests made on several occasions by the Forest Products Laboratory all indicate that the strengths of these two types of joints are practically the same.

The test specimens used by the Laboratory were pairs of hard maple blocks, some with smooth and some with tooth-planed contact surfaces. These blocks were glued with a high grade hide glue, allowed to stand for a week, and then sheared apart in an Olsen universal testing machine. Four joints of each type were compared in a single test.

Eleven such tests gave the following average results:

Comparative Strength of Scratched and Smooth Joints

Test	Scratched Joints		Smooth Joints	
	Shear Strength	Wood surface in failure	Shear Strength	Wood surface in failure
No.	lbs./sq. in.	per cent	lbs./sq. in.	per cent
1	1787	25	1855	--
2	1366	--	943	--
3	1976	--	3086	50
4	2409	75	1571	25
5	2298	100	2416	100
6	1947	75	1678	62
7	2310	12	1800	--
8	1835	100	2455	100
9	1425	--	2180	25
10	2330	--	2395	62
11	2180	--	2520	75
Gen. Avg.	1988	35	2040	47

It will be noted that in seven of the eleven tests smooth surfaces gave the better adhesion. Consequently it would seem that there is no advantage in tooth-planing wood for gluing purposes.