The mean direct tensile strength is 2.21 times greater than the calculated mean skin-stress of the beam and 27 times greater than the mean compressive strength of the timber.

Specimens i_1, i_2, i_3, contain the heart, and the heart also passes along one side of specimens g_1, g_2, g_3. These specimens show the least strength. The ratio of length to least transverse dimensions was 37.1 for g_1, 26.73 for g_2, 34.157 for g_3, 24.56 for h, 27.03 for i_1 and 28.88 for i_2.

The mean shearing strength of the round specimens is 1.76 times greater than that of the flat specimens.

The several specimens had lost considerably in weight in the interval between their preparation from the beam and the date of test.

Tension specimen h was entirely relieved of load after the first series of readings, and was allowed to rest for 16 hours.

AIR-DRIED SPECIMENS FROM WHITE PINE BEAM 28.

Tension Tests.					Compression Tests.					Shearing Tests.		
Spec.	Coefficients of elasticity.		Tensile strength per sq. in	Sp. wt. per cub. ft.	Spec.	Coefficients of elasticity.		Compressive strength in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft.	Spec.	Shearing strength in lbs. per sq. in. of flats.	Sp. wt. in lbs. per cub. ft.
	Forward.	Return.				Forward.	Return.					
1	1,379.890	1,379.510	6,689	24.296	9	1,274,300	1,271,500	3675	24.591	a_1	336.97	25.16
2	1,313.530	1,319.840	6,377	23.51	10	1,293,370	1,298,800	3451	25.096	b_2	374.28	25.887
3	1,157.130	1,162,950	6,381	22.612	11	1,590,700	1,591,210	3187	26.129	d_1	322.11	23.473
4	1,914,310	1,933,220	12,803	......	12	1,336,050	1,325,630	4283	24.004	e_1	343.11	25.418
5	1,290.760	1,298,990	8,704	22.395						f_1	379.89	25.337
6	1,584,760	1,592,749	10,101	21.238								
7	1,368,840	1,381,870	8,402	23.053								
8	1,079,410	1,099,810	5,069	22.656								

SPECIMENS KILN-DRIED AT 212° F. FROM WHITE PINE BEAM 28.

Spec.	Forward.	Return.	Tensile strength per sq. in	Sp. wt. per cub. ft.	Spec.	Forward.	Return.	Compressive strength in lbs. per sq. in.	Sp. wt. in lbs. per cub. ft.	Spec.	Shearing strength in lbs. per sq. in. of flats.	Sp. wt. in lbs. per cub. ft.
13	2,073,150	2,072,160	13,632	......	20	1,331,010 }	1,341,750 }	6518	23.685	a_2	252.00	24.598
14	1,599,550	1,606,100	7,577	22.342		1,437,910 }	1,436,950 }			b_2	215.22	24.561
15	1,498,830	1,502.830	6,250	22.652	21	1,730,420	1,734,100	8119	24.68	c	263.18	......
16	1,390,880	1,394,000	6,966	23.261	22	1,255,400	1,252,420	5654	22.057	d_2	243.18	22.491
17	1,556,790	1,547,460	10,050	22.281	23	1,563,120	1,566,180	6108	22.167	e_2	234.27	24.047
18	1,385,880	1,385,880	9,385	......						f_2	221.78	24.616
19	1,711,630	1,703,180	7,560	......								

Remarks.—The mean direct tensile strength of the air-dried specimens was 1.9 times greater than the calculated mean skin-stress of the Beam and 2.19 times greater than the mean compressive strength.

By the kiln-drying, the mean co-efficients of elasticity were increased and the mean compressive strength was also increased more than 79 per cent. The mean shearing strength was reduced more than 32 per cent., and there was a slight diminution in the mean tensile strength.

The ratios of the lengths of the compression specimens to the least transverse dimension varied between 6.49 and 7.43, and the failure was in every case due to direct crushing.