

The maximum skin stress corresponding to this load is 6912 lbs. per square inclu.

The co-efficient of clasticity as determined by an increase in the deflection of .805 ins. between the loads 1000-lbs, and 13,000 lbs, is 1,643,193 lbs.

Table E shows the several readings.

The beam weighed 381 lbs, 15 oz., or 34.56 lbs. per cubic foot on Oct. 3rd, and 375 lbs., or 34.13 lbs. per cubic foot on Nov. 15th, showing a loss of w. ight in the laboratory at the rate of .01 lb. per cubic foot per day.

The time occupied by the test was 45 minutes.

Beam XIV is in reality Beam XIII re-tested, the second test having been made Dee. 2nd, 1893. The beau was replaced in the machine with the crippled side reversed so as to be in tension. The load was then gradually applied until it amounted to 17,600 lbs, when the beam failed on the tension side by the tearing apart of the fibres along the surface at which the crippling took place on the previous test.

The maximum skie stress corresponding to this load is 4082 lbs. per square inch as compared with 6912 lbs. per square inch in the first test. The co-efficient of elasticity,' as determined by an increment in the deflection of .51 ins. between the loads of 1,000 lbs. and 8,000 lbs. is 1,513,950 lbs, as compared with 1,613,193 lbs, in the first test.

Table E shews the several readings.

This experiment therefore shews that although the beau may have been orippled by undue pressure, it still retained a large amount of strength as well as clasticity.

Table E gives the several readings.

Beam XV. This beam was tested Nov. 18th, 1893. The timber was excellent in quality, equal to first quality in the market, clear and straight grained and free from knots. Its history is the same as that of Beam XII. The annular rings were oblique as in Fig. 20.



Under a load of 37,000 lbs. the beam failed by the crippling of the fibres on the compression face, Fig. 21.

The maximum skin stress corresponding to this load is 8020 lbs, per square inch.

The total compression of the material was .34-in, and the maximum skin compressive stress, taking 1466 in., as the effective depth, is 8189lbs, per sq. in, the corresponding skin tension tress being 8577 lbs, per sq. in. 10