

Beam XLI was tested on March 17th, 1893, with the annular rings as in Fig. 86. The load upon the beam was gradually increased until it amounted to 40,500 lbs., when it failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 2500 lbs. per square inch.

The co-efficient of elasticity, as deduced from an increment in the deflection of .19-in. between the loads of 10,000 lbs. and 22,000 lbs., is 519,820 lbs. per square inch.

Table N shows the several readings.

The weight of the beam on the day of test was 36.13 lbs. per cubic foot.

Beams, XLIII and XLVI were cut out of one large piece of square pine made on the Petterawa, a tributary of the Ottawa, in 1888. The piece was driven over 1300 miles, and lay in water for four years until it was taken out in the fall of 1892 and piled for winter sawing.

This timber was purchased from Messrs. Shearer & Brown.

Beam XLII was tested March 8th, 1893, with the annular rings as in Fig. 87.

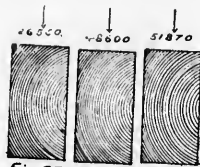


Fig. 87 Fig. 88 Fig. 89

The load on the beam was gradually increased until it amounted to 26,550 lbs., when the beam failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3815 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of 1.22 ins. between the loads of 2500 lbs. and 13,000 lbs., is 979,220 lbs.

Table O shows the several readings.

The weight of the beam per cubic foot at the date of test was 41.49 lbs.

Beams XLIII and XLIV are the two ends of Beam XLII tested March 8th, the central portion of the beam containing the fracture having been cut out.

Beam XLIII was tested March 31st, with the annular rings as in Fig. 88.

The load was gradually increased until it amounted to 48,600 lbs., when the beam failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3000 lbs. per square inch.

The co-efficient of elasticity, as determined by an increase in the deflection of .19-in. between the loads of 10,000 and 25,000 lbs., is 649,780 lbs. per square inch.

Table O shows the several readings.

Beam XLIV was tested March 31st, 1893, with the annular rings as in Fig. 89.

The load upon the beam was gradually increased until it amounted to 51,870 lbs., when it failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3148 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .19-in. between the loads of 1000 and 25,000 lbs., is 649,780 lbs. per square inch, the same co-efficient as in beam XLIII.

Table O shows the several readings.