

Table No. 2 shows the longitudinal crushing strength. The specimens were cut in eight inch lengths with the exception of the five marked with asterisks, which were each four inches long.

Those of which the crushing strengths are given in column A, were cut from the same stick as the four-inch pieces tested transversely, and were tested at the same time, March 17th, 1897. Those given in columns B, C and D were tested on December 21st, 1896; and were cut from the ends of three different sticks, which had been tested as long posts on December 16th, on which date the specific gravities and percentages of moisture were as given in the following table. As the pieces would have lost some moisture in the five intervening days, the values given for B, C and D are higher than the actual.

	A	B	C	D
Specific gravities	37.25	51	46	53
Percentage of moisture.	12.2	23		22.5

The percentage of moisture in C was not determined, but was probably about the same as in B and D.

A comparison of the results given in table No. 1 with those in column A, table No. 2, both sets of tests being made on specimens from the same piece of timber, shows that for well seasoned pine the longitudinal crushing strength is about ten times as great as the transverse strength to resist a compression of three per cent. Hence it is quite evident that in the case of a wooden column in order to develop its total crushing strength, it is necessary to have a capital to receive any wooden beams resting on it. The area of the top of the capital should be about ten times the area of the column, or the top of the capital should be over three times the diameter of the column on which it rests. The same thing applies to the cases of columns supported by timber placed horizontally. Of course in the case of long posts in which the full crushing strength of the cross section is not reached, the ratio between the area of the capital and the column need not be so great.

A comparison of column A in table No. 2 with the columns B, C and D, shows the very decided effect which the quantity of moisture in timber has on its crushing strength.