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THE EFFECT OF MOISTURE CONTENT ON THE BURSTING STRENGTH OF FIBER BOARD

The strength properties of fiber board vary greatly according to the amount of moisture in it, and this amount varies with changes in the relative humidity of the surrounding air. As humidity of the air increases, the strength of fiber board decreases very rapidly. Samples of corrugated board tested at the Forest Products Laboratory showed a decrease in bursting strength of 59 per cent when the relative humidity of the conditioning air was raised from 65 to 97 per cent.

In other experiments at the Laboratory fiber boards were tested following each of three conditioning treatments: First, low humidity, then high humidity, and finally the original low humidity. The results of the tests under the last conditions were practically identical with those obtained after the first low humidity treatment. This proves that the boards had not been injured by the change in humidity, and that variations in the bursting strength of the boards at different humidities are due to a change in moisture content.

The experimental work shows conclusively that when fiber board is bought and sold on strength specifications, the humidity at which the board is to be tested must be stated.