

TECHNICAL NOTE NUMBER 168

FOREST PRODUCTS LABORATORY - U. S. FOREST SERVICE - MADISON, WISCONSIN

TESTING FIBER BOARD FOR STRENGTH

The strength of paper or fiber board varies greatly according to the amount of moisture in it, and this amount is continually changing with the atmospheric conditions. As the relative humidity of the air increases, the strength of fiber board declines very rapidly. A piece of corrugated board tested at the Forest Products Laboratory showed a decrease in strength, by the Mullen test, of 59 per cent when the relative humidity was raised from 65 to 97 per cent.

When fiber boards were subjected to a low, then to a high humidity, and later tested at the low humidity, the results were practically identical with those obtained before the increase in moisture. This proves that the boards had not been injured by the change in humidity, and that variations in the strength of the boards at different humidities are entirely 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.