

# TECHNICAL NOTES

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

No. D-1

## STEAMING OF VEHICLE STOCK DURING KILN DRYING

Saturated steam as a means of alleviating the tendencies of green lumber to honey-comb in the kiln has for some time been successfully applied in the commercial drying of heavy vehicle stock. Under intelligent control, such treatment has meant the difference between success and failure in many kiln runs. It has frequently afforded the means of overcoming discrepancies in operation or misjudgments as to the ability of stock to withstand rigid drying conditions.

So far, however, the steaming treatment has been confined to straight stock. The contention has always been that bent stock, such as rims, should not be steamed after removal from the form, experience indicating that stock so treated would tend to straighten out to its original shape. The kiln drying of heavy bent rims has been carried on, therefore, without resorting to steaming to remove casehardening and other defects of drying.

Recent experiments conducted under the direction of the Forest Products Laboratory have shown that judicious steaming of heavy bent vehicle stock results in a considerably improved product, and that the operation can be accomplished without serious effect upon the curvature. Careful judgment is necessary, however, as it is a very easy matter to ruin the entire charge by too severe treatment. Contrary to the common impression, this steaming has been done at high temperatures (150°-180°F) and for short periods (1/2 to 3 hours) the temperature and time varying according to the requirement of the case.

The method was given a rather severe test, being tried first on 56 in. oak rims and later on 60 in. artillery wheel stock. When applied to the kiln drying of heavy oak rims on a commercial basis, it worked out very successfully. Checks in the stock before steaming, which showed "pinching in" tending toward honey-combing, closed normally without further damage after steaming. From kiln charges totaling about 2400 pieces, the losses attributable to kiln drying were only 2 per cent.