

TECHNICAL NOTE NUMBER 203

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

REMOVAL OF COLLAPSE IN WESTERN RED CEDAR SHINGLES

The development at the Forest Products Laboratory of a kiln treatment by which collapsed or badly crimped shingles of coastal grown western red cedar can be restored to a usable condition indicates that the salvaging of both collapsed shingles and boards of this species may be commercially feasible.

It was found that the crimp which occurs in drying excessively wet wood of western red cedar and a number of other woods is due to a collapse of the wood cells caused by removal of the free water with which they are filled. The wood may be redried without collapse if the cells are restored to their former shape by remoistening without permitting them to fill with water again. This treatment can be accomplished with loose shingles in 2 days, but it is less practicable to do it in the bundle on account of the long time required.

The treatment in general is as follows: The shingles are laid flat in the kiln on suitable racks in separate layers. Live steam is injected at boiler pressure through perforated pipes to produce a high circulation, and the air is held in a saturated condition at 180 degrees F. for 20 hours, after which the temperature is increased to 190 or 200 degrees for 3 or 4 hours. Following this the free steam is shut off, the heating coils are turned on, and the shingles are dried at a temperature of 160 degrees and 35 to 25 per cent humidity. Less than 24 hours should suffice for thorough drying. Because of the need for a positive circulation in drying, either a water-spray or a blower kiln is desirable.

Occasional shingles fail to respond to the treatment, when the fibers have become crushed beyond recovery.

Although tests with a nail 3/16-inch in diameter showed a slight increase in brittleness in the restored shingles, this defect was not evident when shingle nails were driven.