AMERICAN WOOD PRESERVERS' ASSOCIATION.

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NATURAL AND ARTIFICIAL SEASONING OF DOUGLAS FIR FOR TREATMENT.

By Mr. F. D. Beal.

The above subject is one on which a large amount of knowledge is yet to be obtained.

Although we have been treating Douglas fir for about twenty-four years, we cannot say that we have yet developed a method of seasoning that could be considered wholly successful under all conditions.

In the first place, the wood being naturally hard and refractory in the seasoned state, sufficient penetration by pressure treatment alone could not be obtained to insure the full protection of the wood for a sufficient length of time to make the treatment a paying proposition. Therefore, it was decided very early in the history of the Pacific Coast treating, that some means of artificial seasoning would have to be resorted to in order to prepare the wood for the reception of the preservative used.

Our first move was to take up the steaming and vacuum process with which you are all more or less familiar; that is, of turning saturated steam directly on the timber and raising the temperature to a point to insure the thorough heating of the interior wood and vaporizing all sap moisture, etc., and the writer used to think they were vaporizing the wood itself by the looks of all the pitch, resin, etc., that used to come out through the drains.

This was carried on until the maximum vaporizing point was reached. A vacuum pump was then applied, heat being maintained in the cylinder by the circulation of superheated steam through steam heater pipes in the bottoms of the cylinders. This vacuum and superheated steam was carried on until the balance of the moisture, etc., was fully extracted from the cylinder. In this manner the wood would take the preservative under pressure very readily, but the strength of the material was so impaired as to practically condemn it for use in structures.

Various other schemes were then tried out with very little success until in 1894 Mr. John D. Isaacs conceived the idea of trying out a modification of the "Boulton Method" of seasoning by immersion of the unseasoned timber in creosote oil, using the oil as a medium for conveying the heat to the timber, raising the temperature of the oil above the boiling point of water—thus vaporizing the moisture in the wood, allowing it to pass off through vent pipes into condensers through which cold water was circulated, but eliminating the use of any vacuum pump.

In this manner, the timber was dried or seasoned with a lower degree of heat and left in good condition for the reception of the preservative under pressure.

This method of seasoning has been carried on continuously on the Pacific Coast now for over twenty years, and although there is some decrease in strength, the material is in much better shape and lasts longer than that air-seasoned or treated by steam.

At the present time experiments are being carried on at St. Helens, Oregon, at the St. Helens Creosoting Company's plant, on the seasoning of ten thousand Douglas fir ties. These experiments are being carried out under the direction of Mr. George E. Rex, of the Santa Fe Railway. The ties were selected and five thousand of them weighed. The ties that were weighed were tagged and numbered, record being taken of the same. They were then placed in the water during the months of May and June, 1912 They were cribbed in cribs of about sixty ties to the crib, but instead of being cross piled in the cribs thew were all laid one way, separately, with one-inch strips nailed to the ties, the reason for this being that it was desired to place the ties in running fresh water with the ties lengthwise up and down the stream, thus allowing the water to pass through the entire length of the ties.

These ties were left in the water until about September 15th, when they were taken out and the five thousand reweighed to ascertain the amount of water absorbed. They were then piled in open piles to air season. When it is found that the ties are sufficiently dry they will be treated by pressure process alone, without any artificial seasoning.

The object of these experiments is to try and find some process of seasoning without the application of heat in order to retain the natural strength of the wood as much as possible, the theory being that, as with Douglas fir when sawed into lumber and immediately piled in the open air, the wood checks and splits excessively; also, when thoroughly air dried the wood becomes so hard that it is impossible to get any penetration with the preservative. Therefore, the idea of putting the ties in the water was to allow them to water season and wash out all of the saps and natural wood moisture; to then pile them in open piles, allowing the moisture that was absorbed during the immersion to evaporate. In this manner the wood would not check or split.

At the date of this writing, November 20th, 1912, the theory of eliminating the checking and splitting is working out admirably. The ties as yet show no evidence of splitting or checking in any manner.

One pile of the ties was selected to be weighed every fifteen days to determine the rate of seasoning.

It was at first intended that the ties should be treated in the creosoting cylinder about November 1st, but on account of the excessively heavy and continuous rain for the past month the seasoning has been retarded and it has now been decided to allow the treatment to go over until about February 1st, 1913.

At the time of the treatment of these ties there will be present engineers and representatives from a great many of the railway companies throughout the United States, and we herewith extend an invitation to all members of the association to be present at St. Helens, Oregon, at this time, as we expect to develop something new for the seasoning of Douglas fir.

LAYING WOOD BLOCK PAVEMENT.

By H. S. Loud.

A contract for wood block pavement usually includes regulating the entire portion of the street to be paved, removing the old pavement, regrading the street, readjusting other types of pavement at intersections, setting new curb, dressing and resetting old curb, resetting catch basins, manhole frames and sewer heads, putting in new concrete foundation and laying the wood blocks.

Before ordering the paving contractor to commence work the city should see that all sewer work, water and gas pipes, underground conduit, street railway tracks, etc., have been put in good repair.

The city should insist that all backfill over such trenches as are opened be thoroughly and properly tamped.