

CREOSOTED TIMBER FOR WORKS IN THE MARITIME PROVINCES.

For a number of years, the attention of the department has been called to the necessity of adopting creosoted timber for works in the Maritime Provinces, where the destructive action of the sea worm is strongly felt, but it is only during the fiscal year 1892-93, that authority to specify for creosoted timber was given. Advantage was taken of that permission, and creosoted timber was specified in the new wharf now under course of construction at D'Escousse, in the county of Richmond, Cape Breton, and at Bayfield, in the county of Antigonish, Nova Scotia.

While the adoption of creosoted timber for works in the Maritime Provinces is a step in the right direction, and calculated to add to the stability and duration of the works in which it is used, this new departure presents the drawback that foreign lumber has to be used owing to the fact that there are no creosoting works in Canada.

It is hoped, however, that before long this new industry may be started in Canada, as the demand will without doubt go on increasing.

The process of creosoting consists in extracting by evaporation the sap and moisture from the timber and injecting heavy oils of tar, commonly called creosote, under heavy pressure, into the pores of the timber, thereby rendering it more solid and preventing germinal life from being developed within it.

The timber required for the D'Escousse wharf was treated at the Lehigh Valley Creosoting Works, Perth Amboy, state of New Jersey, in the presence of Mr. E. T. P. Shewen, assistant engineer of the department.

The plant comprises two cylinders six feet in diameter 60 and 80 feet long, circulating vacuum and force pumps and five oil tanks. In the bottom of each cylinder and extending almost the whole length, are seven rows of one inch and a half steam pipes.

The creosote used is genuine heavy oil, having a specific gravity by the hydrometer of 1.030 at a temperature of 83° Fahrenheit.

The timber treated was North Carolina yellow pine.

The process used is the Hayford's process which is conducted as follows:—

(1.) After the timber has been inclosed in the cylinder and before the creosote is let in, it is dried to some extent by means of steam admitted to the pipes laying at the bottom of the cylinder, but if very green, it is subjected to wet steam, the dry steam remaining, however, turned on in the pipes from the beginning to the end of the operation.

(2.) After steam has been turned on for two to twelve hours, according to the degree of moisture in the timber, the vacuum pump is worked for a period varying from one to two hours.

(3.) Creosote at a temperature of about 130° Fahrenheit is then let into the cylinder, partly by means of the vacuum and partly by the circulating pumps.

(4.) Force pumps are put on until the gauges of the tank floats indicate that the surface of the creosote has been lowered to the proper depth (previously calculated) to assure that the specified quantity of oil per cubic foot of timber has been injected.

The quantity of creosote specified was 16 lbs. per cubic foot.

The piles required were treated in two charges and the square timber was treated separately, with the following results:—

Charge No. 1, piles 18.5 lbs. per cubic foot.

Charge No. 2, piles 16.0 lbs. per cubic foot.

Charge No. 3, square timber 16.0 lbs. per cubic foot.

The quantity of creosote specified was therefore as far as inspection could show duly injected into the timber, but in many cases the penetration was very irregular, and only penetrated into the heart of the timber in a few cases.

The numerous experiments made by Mr. Shewen and by myself have fully convinced us both that the Hayford process, in vogue in the United States, cannot give better results than those cited above, and it is to be regretted that the process of Mr. S. B. Boulton which is adopted almost entirely in England, has not yet been adopted in the States.