

## WOOD BLOCK PAVING SPECIFICATIONS.

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clean sand into them, after which the surface shall be covered to a depth of about  $\frac{1}{2}$  inch with fine sand. This sand is to be left upon the pavement for such a time as may be directed by the city, after which it shall be swept up and taken away by the contractor.

When the blocks are laid on streets having grades of 3 per cent. or over, it is desirable that the blocks be spaced by laying creosoted wood lath of about  $\frac{5}{16}$  inch thick between each course. The space above the lath shall then be filled with heated, crushed stone (containing no dust) and bituminous filler as specified above. The bituminous filler shall first be poured into the bottom of the joint, care being taken to get none on the surface of the pavement. The crushed stone shall then be swept into the joint and the space around the stone filled with the bituminous filler to the top of the joint. It is essential in open-joint pavement to drive the blocks together every four rows to prevent tipping of the individual blocks.

[NOTE.—Here are inserted the methods of sampling and testing of preservatives that were described in the Society's proceedings for the year 1915.—Editor.]

### COKE TEST.

In making the coke determination, hard glass bulbs are to be used. The test is to be carried out as follows:—

Warm the bulb slightly to drive off all moisture, cool in a desiccator and weigh. Again heat the bulb by placing it momentarily in an open Bunsen flame and place the tubular underneath the surface of the oil to be tested and allow the bulb to cool until sufficient oil is sucked in to fill the bulb about two-thirds full. Any globules of oil sticking to the inside of the tubular should be drawn into the bulb by shaking or expelled by slightly heating it, and the outer surface should be carefully wiped off and the bulb reweighed. This procedure will give about one gram of oil. Cut a strip of thin asbestos paper about one-quarter inch wide and about one inch long, place it around the neck of the bulb and clutch the two free ends close up to the neck with a pair of crucible tongs. The oil should then be distilled off as in making an ordinary oil distillation, starting with a very low flame and conducting the distillation as fast as can be maintained without spurting. When oil ceases to come over, the heat should be increased until the highest temperature of the Bunsen flame is attained. The whole bulb being heated red hot until evolution of gas ceases and any carbon sticking to the outside of the tubular is completely burned off. The bulb should then be cooled in a desiccator and weighed, and the percentage of coke residue calculated to water-free oil.

### FLOAT TEST.

*Method.*—The float apparatus consists of two parts, an aluminum float or saucer, and a conical brass collar. The two parts are made separately, so that one float may be used with a number of brass collars.

In making the test the brass collar is placed with the small end down on the brass plate, which has been previously amalgamated with mercury by first rubbing it with a dilute solution of mercuric chloride of nitrate and then with mercury. A small quantity of the material

to be tested is heated in the metal spoon until quite fluid, with care that it suffers no appreciable loss by volatilization and that it is kept free from air bubbles. It is then poured into the collar in a thin stream until slightly more than level with the top. The surplus may be removed after the material has cooled to room temperature by means of a spatula or steel knife, which has been slightly heated. The collar and plate are then placed in one of the tin cups containing ice water maintained at  $5^{\circ}$  C., and left in this bath for at least 15 minutes. Meanwhile the other cup is filled about three-fourths full of water and placed on the tripod, and the water is heated to any desired temperature at which the test is to be made. This temperature should be accurately maintained, and should at no time throughout the entire test be allowed to vary more than one-half a degree centigrade from the temperature selected. After the material to be tested has been kept in the ice water for at least fifteen minutes, the collar, with its contents, is removed from the plate and screwed into the aluminum float, which is then immediately floated in the warmed bath. As the plug of bituminous material becomes warm and fluid, it is gradually forced upward and out of the collar until water gains entrance to the saucer and causes it to sink.

The time in seconds between placing the apparatus on the water and when the water breaks through the bitumen is determined by means of a stop-watch and is taken as a measure of the consistency of the material under examination.

## INTERNATIONAL NICKEL COMPANY.

When the plans for its proposed construction and improvement work in Canada have been completed the International Nickel Company will have increased its capacity approximately 40 per cent., or from an annual output of 60,000,000 pounds of nickel to between 80,000,000 and 90,000,000 pounds.

Original plans called for the expenditure of \$2,000,000 on a Canadian refinery. The management, however, decided later to increase facilities all along the line through a single appropriation, and \$5,000,000 was then decided upon as the prospective investment. The refinery will cost about \$2,000,000. Smelting facilities at the Canadian Copper Works will be enlarged and water-power capacity will be increased.

The nickel company handles about 850,000 tons of ore annually, the average grade of which runs about  $4\frac{1}{2}$  per cent. nickel. Copper values average about one-half the nickel content, or  $2\frac{1}{4}$  per cent. The company saves about 92 per cent. of the nickel.

The nickel turned out in the Canadian plant will be for the use of Great Britain and its dominions. This output, it is estimated, will be from 20,000,000 to 30,000,000 pounds a year. With an increase in nickel output copper yield is expected to automatically increase from about 30,000,000 pounds to better than 40,000,000 pounds per annum.

In the course of a discussion on the metric system, held by the Boston Society of Civil Engineers, the opinion was expressed that it is quite possible that Great Britain will bring about the completion of the metric reform sooner than the United States will.

The Housing Commission of the Corporation of Dublin, Ireland, decided to recommend the acceptance of a loan of \$2,000,000 at 5 per cent. offered by Lee, Higginson and Company, of Boston. The offered loan is for the reconstruction of the city on plans approved by the Housing and Town Planning Association of Ireland. Late in August, John Nolan, of Cambridge, Mass., one of the three adjudicators appointed by the association, approved plans for the rebuilding of Dublin.