

## STREET PAVING IN ENGLAND.

The Metropolitan Paving Committee, of London, England, have recently issued their tenth annual report relative to paving work compiled from information furnished by the engineers to the authorities concerned. As this information is very complete in its way, it may be of interest to Canadian engineers as regards cost comparisons. It should always be remembered that our more rigorous climate and the difference of the labor wage, lessens the value of this report as far as Canadian practice is concerned. We are of the opinion that a perusal and study of its contents is nevertheless both advisable to all interested in road building.

The brief summary of the work done is taken from The Surveyor, of London, England, February 21st, 1913. The prices mentioned have been changed to the decimal system of coinage to suit our Canadian readers.

**Principal Kind of Paving Laid.**—The bulk of the paving laid down in the districts mentioned in the returns during the year appears to have been creosoted soft wood, although in some instances other kinds of paving predominated. Large areas of tar-macadam were laid in some districts, principally in limited traffic residential and business streets, while a large amount of tar-spraying has also been undertaken.

**Foundation.**—In some boroughs a foundation of Portland cement concrete 9 in. thick (in one case 12 in.) has been adopted, while in others a 6-in. foundation has been deemed sufficient. There is a decided tendency to increase the thickness of concrete foundation, owing to the detrimental effect of heavy motor traffic.

**Effect of Motor Traffic.**—Motor traffic is considered to be detrimental to macadam-paved roads, and the majority of the borough surveyors are of opinion that motor traffic has increased the cost of the upkeep of the roads.

**Saving on Tar-sprayed Roads.**—Considerable saving continues to take place in those boroughs where the tar-spraying of macadam roads is largely undertaken. From the appended information it will be seen that a very considerable saving has been effected in the boroughs of Fulham, Greenwich, Hammersmith and Wandsworth in the cost of scavenging, watering and maintenance of highways since the adoption of the system of tar-spraying macadamized roads. It is, moreover, generally agreed that a great improvement in the road results from tar-spraying.

The returns sent in during the past year have been put in tabulated form, and may be briefly summarized as follows:—

**Greenwich.**—Some 3,600 super. yds. of tarred macadam, 4 in. deep, were laid in this borough. The macadam was consolidated with the steam roller and laid on an old foundation, the subsoil being gravel. The cost of laying per yard super. was 79c. without foundation, the work being carried out by the local authority. The surveyor mentions that 47,227 super yds. have been tar-sprayed in the borough at a total cost of \$2,258.

**Hammersmith.**—In Stamford Brook Road tar-macadam, composed of Trinidad Lake bitumen and granite mixed, 3 in. thick, with a sealing coat of refined Trinidad Lake bitumen, was laid on a foundation of old macadam at a cost of 90c. per yard super. In another thoroughfare, with limited traffic, tarred-slag macadam, 3 in. thick, was laid on an old foundation at a cost of 67c. per yard super. In this borough 275,164 super. yds. have been tar-sprayed at a cost of \$2,931.11.

**Hampstead.**—Hard and soft wood, lithofalt block paving, lithomac paving and tar-macadam were laid in this borough during the past year. The 8-in. by 3-in. by 4-in. creosoted deal blocks were laid with close joints run in with a mixture

of boiling pitch and creosote oil, grouted with Portland cement and top dressed with fine shingle on an old 6-in. foundation broken up and a new Portland cement foundation 9 in. thick, including 1 in. floating formed. The foundation was laid by the local authority, the paving by a contractor at a cost of from \$1.36 to \$1.38 per yard super. without foundation. The 4-in. Jarrah blocks which this paving replaced had been down for eleven years in these heavy traffic roads. In Heath Street, where the traffic is limited, these blocks were laid in the same manner on an existing foundation made good and refloated with Portland cement and sand, at a cost of \$1.70 per yard super., including the work of remaking the foundation. The 5-in. deal blocks which this paving replaced had been down nineteen years.

In Finchley Road, a heavy traffic thoroughfare, 8-in. by 3-in. by 3¼-in. sectional Jarrah blocks were laid, the courses divided by fillets of ¾-in. in depth and 1/12 in. in thickness, the joints being filled in with a mixture of boiling bitumen. They were laid on an existing foundation made up to the proper level with Portland cement concrete, and refloated with Portland cement and sand at a cost of \$3.29, including the cost of the work of remaking the foundation. The Jarrah blocks which this paving replaced had been down eleven and twelve years. The surveyor states that this sectional block paving has proved very satisfactory after an experience of seven years; the wear is smooth and even, and there is no corrugation of the paving as in ordinary hardwood paving.

Lithofalt blocks, 9 in. by 4½ in. by 1¾ in., were laid in Belsize Road, where the traffic is considerable. They were laid on wet floating, on an existing foundation, made up to suit the new paving. The blocks were supplied by a contractor, and the work was executed by the local authority, the cost per yard super. being \$1.72 with foundation.

Lithomac paving, 2 in. in thickness, was laid in College Crescent, where the traffic is considerable, at a cost of \$1.23 per yard super. with foundation.

**Holborn.**—Most of the paving laid in this borough consisted of compressed rock asphalt 2 in. thick, the Portland cement concrete foundation being, in nearly every case, 9 in. thick. The rock asphalt was compressed with heated pelons, the cost per yard super. varying from \$2.47 to \$3.35 with foundation, and \$2.19 to \$2.25 without foundation. This paving has worn well. Some Trinidad Lake asphalt macadam, 3 in. thick, was laid at a cost of \$1.15 per yard super. without foundation.

In Chancery Lane, where the traffic is considerable, creosoted Swedish deal blocks, 3 in. by 9 in. by 5 in. have been laid in pitch grout finished in cement, joints 1/10 in. in thickness, on a Portland cement concrete foundation, 9 in. to 11 in. in thickness, at a cost of \$3.22 per yard super. with foundation, and \$1.85 without foundation, the annual cost of maintenance per yard super. being 24c.

**Kensington.**—The return from this borough contains particulars of a new description of paving—namely, camphor wood blocks, 9 in. by 3 in. by 4 in., grouted tar pitch and cement, and laid on a 6 in. Portland cement concrete foundation at a cost of \$2.73 without foundation.

Creosoted deal blocks, 8 in. by 3 in. by 4 in. or 4½ in. or 5 in., were laid, grouted tar pitch and cement on a 6-in. Portland cement concrete foundation, at a cost of from \$2.23 to \$2.50 with foundation, and \$1.63 to \$1.80 without foundation. In Notting Hill Gate the wood paving which this paving replaced had been down twelve years, and in residential thoroughfares the paving replaced wood paving which had been laid from sixteen to twenty years previously.

Kensington asphalt clinker blocks were laid in residential thoroughfares by the local authority.