

2 Labourers—asphalt boiling, heating sand, and mixing together, @ \$1.50.....	\$3.00
1 Labourer—boiling asphalt, heating sand, and mixing together, @ \$1.57.....	1.57
1 Labourer—preparing the foundation, @ \$1.50.....	1.50
1 Labourer—preparing the foundation, @ \$1.35.....	1.35
1 Labourer—laying and finishing the surface mixture, @ \$1.57.....	1.57
1 Labourer—laying and finishing the surface mixture, @ \$1.50.....	1.50
1 Carter—carting the mixture to the walk, @ \$2.25.....	2.25
	<u>\$12.74</u>

There is no charge made for superintendence, as the foreman of streets attends to that.

The cost of the various materials is as follows:—

Asphalt.....	1.57 cents per pound.
Sand.....	90.0 cents per cubic yard.
Cement.....	170.0 cents per 350-lb. barrel.
Gravel.....	75.0 cents per cubic yard.
Tar.....	1.0 cent per pound.

The daily output of the above force is about 300 square feet of finished crossing or walk.

The following statement shows in detail the cost of laying 5,000 square feet of asphalt crossings during the year 1905.

Material.	Cost in cts. per sq. ft.
Stone.....	0.267
Asphalt.....	3.600
Cement.....	0.080
Fuel.....	0.110
Hardware.....	0.015
Tarred Gravel.....	0.510
	<u>5.302</u>

Labour	Cost in cts. per sq. ft.
Boiling asphalt and heating sand..	1.25
Carting.....	1.088
Laying and finishing surface.....	0.917
Preparing foundation.....	1.020
	<u>4.275</u>

Total cost per sq. foot of crossing.. 9.577

It will be noticed that the charge for fuel is very small. That is due to the fact that the fuel is obtained from the old plank walks which were torn up when being replaced by new walks. The only charge, therefore, is that of cartage. The cost of crossings is less than that of walks, as the expense of preparing the foundation is a little more with the latter than with the former, and more tarred gravel is required in the case of the walks to give the surface mixture a firm base.

The manner of construction of the asphalt crossings is as follows:—

SURFACE MIXTURE.

(a) 270 pounds of Acme asphalt are heated to 300 degrees Fahrenheit and kept at that temperature for about two hours, being constantly stirred.

(b) 20 bushels of medium coarse sand, screened of all material $\frac{1}{8}$ of an inch and over, are then heated to drive off the moisture.

(c) The asphalt and sand are then thoroughly mixed by hand on the mixing board.

LAYING ON MACADAM ROADWAYS.

A furrow is picked up along the

edge of the crossing so as to produce the desired camber and to prevent the wheels of vehicles from cutting into the asphalt. A load or two of tarred gravel in addition to this may be required along the length of the crossing.

The asphalt surface mixture is then laid on the foundation as prepared to a depth of two inches. It is then well tamped and pounded along the edges and thoroughly rolled with a two-man roller. The surface of the roller and pounder are first well oiled so as to prevent the mixture from adhering to them. A thin coat of cement is then sprinkled over the wearing surface and wetted down, about one pound of cement being required for every ten square feet of crossing.

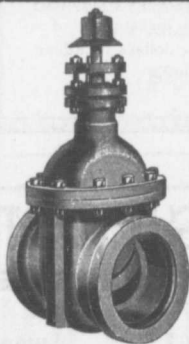
Asphalt walks are constructed in a similar manner, with the exception of the foundation course. The ground is cleared of all loose material and graded to a firm even base, cinders well sprinkled and tamped being used to bring the walk to the required elevation. On the cinders is placed a 4-inch layer of tarred gravel. This course is then pounded to give a firm even bearing for the surface mixture, which is then laid as before.

On a heavily travelled street with the roadway abutting the walk, a concrete curb of the usual design is built in place along the outer edge of the walk. Wherever feasible, how-

ever, the usual custom is to arch the outside edge of the walk and tamp it well into a small furrow. In this way an almost vertical face may be produced. Limestone screenings may then be placed along this edge for backing. A 1 x 10 inch form properly braced is placed along the inside edge of the walk before construction and is usually left there.

A method sometimes used for the outside face is a 2 x 10 inch form braced by means of 4-inch cedar posts placed every six feet on the walk side of the form and driven one foot into the ground. This is not to be recommended, as the posts will eventually be heaved up by the action of the frost, thus destroying the wearing surface, and the form soon rots out.

The life of the asphalt crossings is found to vary from ten to twenty years. This together with such a low initial cost renders them vastly preferable to plank crossings and even to many of the more expensive crossings, such as those built of concrete, brick, or stone. For example there are several crossings built of asphalt in Kingston which have outlasted the surfaces of heavy concrete crossings of the same age and two or three times the initial cost. Another point in favor of asphalt for both crossings and walks is its elasticity, which when not too great is very desirable.



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