

# MUNICIPAL DEPARTMENT

## CRACKS IN STREET ASPHALT.

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(Continued from last issue.)

It is unfortunate, too, that this defect of cracking occurs in the only one of the pavements that is liable to serious injury thereby; the cracks, of course, provide a ready means of access for water into the surface layer of the pavement, and its escape by evaporation is retarded. An experiment to illustrate the effect of water upon sheet asphalt follows:—

A piece of sheet asphalt weighing 4¾ oz. was taken from the surface layer of one of the above pavements and immersed in water for 15 days; for purposes of comparison, a piece of asphalt block of about the same size and weighing 5 oz. was subjected to the same conditions. At the end of 15 days, both samples were broken down as far as possible by pressure of the bare fingers, rubbing off all loose and disintegrated material.

They were then returned to the water for 15 days more, and the operation of rubbing repeated. This was continued up to 60 days, when the sheet asphalt was totally disintegrated, while the asphalt block had lost but 3.6 per cent.

The losses for the different periods were as follows:—

	Asphalt Block	Sheet Asphalt.
15 days.....	0.1 per cent.	1.9 per cent.
30 days.....	0.3 per cent.	15.1 per cent.
45 days.....	1.7 per cent.	37.0 per cent.
60 days.....	3.9 per cent.	100.0 per cent.

Mr. A. W. Dow, inspector of asphalts and cements for the city of Washington, writing on "Failures of Asphalt Pavements" in the annual report of the Engineer Commissioner of the District of Columbia, gives the impression that the use of proper materials in an asphalt pavement will so soften the pavement as to prevent cracking, without making it so soft as to roll or crowd.

In this connection the following peculiarity of a Lafayette pavement will be of interest:

The sheet asphalt pavement on Columbia street, from Third to Fourth, was laid in August, 1899. Early in October following depressions had formed on the crown of the street, presumably by rolling or crowding, holding water to such an extent that the city engineer suggested repairs. They were promptly made, seven patches of from 1 to 5 sq. yd. each being applied.

Early in November following another depression had formed adjacent to one of the larger patches, and was repaired No-

vember 7th. On December 31st this pavement cracked from one gutter to the other, the crack passing within a few feet of one of the October repairs.

## TREATMENT OF SEWAGE.

A novelty in sewage treatment has been recommended for Chester, England, by Major H. Tulloch, late engineer in chief to the local government board. The volume of dry-weather sewage to be treated is about 1,250,000 imperial gallons. It is pumped from a screening well at the end of an outfall sewer into a channel along eight precipitation tanks holding about 68,000 gallons each. The clarified effluent from these is run through eight roughing filters having a total area of 888 square yards, and then passes to circular aerobic polarite filters 50 feet in diameter and having a combined area of 3,500 square yards. Before passing to these the sewage is collected in a small chamber from which, when a certain height has been reached by the surface of the liquid, the latter is discharged over the filtering bed. The chamber holds enough sewage to flood the filter to a depth of 2½ to 3 inches, and is emptied automatically. The filters are placed in two tiers, and double filtration is thus possible. The

effluent from the upper tier drives a small turbine and fan which draws the carbonic acid gas from the bottom of the filters, allowing air to enter freely the pores of the lower part of the bed.

## LEGAL DECISIONS AFFECTING MUNICIPALITIES.

With regard to obstructions on or over highways, the following case, Huffman vs. township of Bayham, may be cited, in which the plaintiff secured \$1,500 damages.

The Court of Appeal's report was as follows:

"A milkstand built on a highway by or adjoining property and projecting slightly over the travelled way is such an obstruction to the highway as to constitute want of repair within the meaning of the Municipal Act, and where such an obstruction was shown to have existed for three years and the municipal corporation having jurisdiction over the road in question had taken no steps to have it removed, they were held liable in damages for an accident caused by it."

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