Street Pavements*

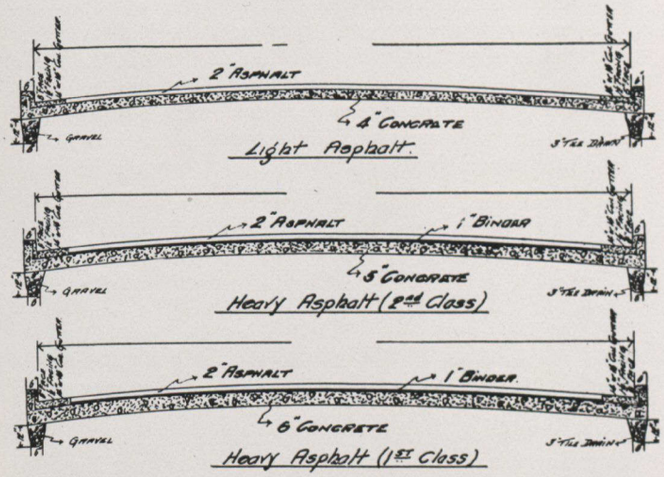
The subject of Street Pavements is always of more or less interest, even to those not specially connected with their construction. It will, therefore, be the aim of this article to give a few details regarding those pavements which have been found to be most suitable for the traffic to be met with in a large city.

Asphalt.

The asphalt pavement is probably the most popular and at the same time the most economical pavement to be had for general city traffic where grades are not too steep (say, up to 3 per cent.), and where traffic is not too congested.

In Toronto there are two kinds, viz., heavy and light.

Heavy asphalt pavement consists of a Portland cement concrete foundation 6 inches in depth composed of 1 cement, 3 sand and 7 stone, an inch of binder and two inch of surface. The above dimensions have proved suitable for the heaviest traffic in this city for a period of from 8 to 10 years. Of course, repairs are necessary



from time to time to keep these pavements in shape for the guarantee period, which up to the present time has been ten years.

The light asphalt pavement is composed of a 4-inch Portland cement concrete and a 2-inch asphalt wearing surface. This pavement is laid on light traffic or residential streets, and is guaranteed for ten years.

It is proposed, however, to replace this light asphalt pavement with a heavier construction of 5-inch concrete, 1-inch binder and 1½ or 2-inch surface, as it has been found that the traffic conditions on a street, once it is paved, increases so materially that the surface has a tendency to creep, and it is thought that the binder will prevent this.

A granolithic gutter, composed of 1 cement, 1 sand and 3 granite chippings is laid next to the curb on the green concrete foundation, so as to insure a thorough bond. The depth of the gutter is the same as the thickness of the pavement surface, and from 14 inches to 16 inches wide. The price of this surface, including foundation, is 25 cents a lineal foot.

Originally the asphalt was laid right up to the curb, but was found to rot and disintegrate under the action of water, so the granolithic gutter was substituted. However, the granolithic surface is so hard and brittle that it becomes cracked and broken, and in the near future some other substitute will have to be found.

Concrete curb is now used altogether, and is found to be very satisfactory, there being no tedious delays, as often occurred in the days when stone curb was so extensively used. The materials for concrete curbing are almost always on hand or easily procured, while the same cannot be said in regard to stone curbing.

The concrete curbing is usually constructed in conjunction with the foundation, so that a thorough bond is secured.

The concrete curbing is 6 inches thick and varying in depth according to the class of roadway to be constructed. The face and top of curb to a depth of 1½ inches are composed of same mixture used in gutters, while the core is composed of a 1:2:5 mixture. The cost of this curb is about 30 cents per lineal foot.

The cost of a heavy asphalt pavement will average $2.25 per square yard, and of a light asphalt $1.55.

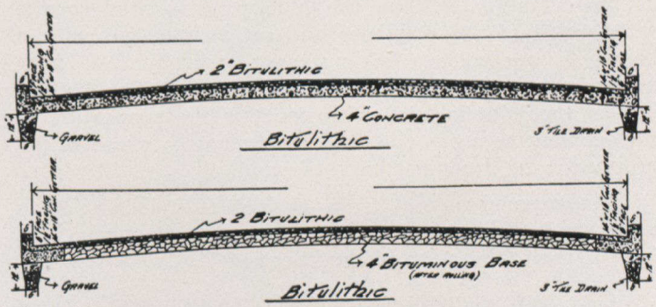
For details of these pavements see cross-section 1, 2 and 3.

Bitulithic.

The bitulithic pavement is a patent pavement controlled in Toronto by the Warren Bituminous Co. It has proved fairly satisfactory, and costs about $2.25 per square yard.

The foundation is either broken stone, thoroughly rolled to a thickness of 4 inches, and then sprinkled heavily with a bituminous cement so as to insure the particles of stone being well cemented together, or a 4-inch Portland cement concrete composed of 1 cement, 3 sand and 7 stone. On the foundation is spread the surface mixture to a depth sufficient to roll down to 2 inches after thorough rolling.

The surface mixture is composed of graded stone,



varying in size from 1 inch to an impalpable powder, proportioned in such a manner as to reduce the voids to a minimum.

The cementing material is a patent bituminous preparation, added in such quantities to thoroughly coat all particles and fill all voids.

The surface when rolled is flushed with a special bituminous cement, called a flush coat composition, and then stone chippings are rolled in so as to fill all surface voids, thus roughening the surface and making it less slippery.

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