

is a too recently accepted material for authoritative opinions as to durability. It has not always worn well wherever laid, having developed a tendency toward holes and cobbling, and there are instances where disintegration of the lower part of the block has caused trouble. It is likely to endure ten years of service without extensive repair, a few engineers making a more conservative estimate. Many cities mention cost as a prohibitive feature against more general use. When the block commences to wear at the edges, and the surface becomes roughened, it is hard to keep clean.

Asphaltic Concrete.—This is one of the youngest of the pavement family and engineers do not commit themselves as to its wearing qualities. We find no record of asphaltic concrete having been laid in Canada prior to 1909. It is suitable for light to heavy traffic with a tendency to wear into holes. Mr. A. F. Macallum, city engineer of Hamilton, reports its use on grades of from 3% to 7%—too steep for the use of sheet asphalt. On the steepest grades transverse grooves were cut across the pavement every nine inches to eliminate undue slipping in unfavorable weather.

Bitulithic.—This pavement dates from 1902 in Canada, in which year it was laid in London, where it has proved satisfactory, although Mr. W. N. Asphlant, the city engineer, recommends a concrete base for the best results with it. Chatham has had it in use for ten years and reports an even wear with a tendency to holes. Bitulithic is not so liable to markings in hot weather, as asphaltic concrete. Mr. W. A. Adams, assistant city engineer, Lethbridge, endorses the advantages of using

a stretcher on streets with car tracks, both inside and outside the rails. Concrete with wire mesh reinforcement has been satisfactorily used for this purpose. Bitulithic appears to answer for all ordinary traffic. It has the advantage of being comparatively noiseless and easily cleaned, although a squeegee coat, frequently applied, makes cleaning a little difficult, and requires the pavement to have a slightly higher crown.

Fifteen years is claimed to be its approximate life-time before extensive repairs are necessary, although several place this limit at ten years, and in each of these latter cases the pavement has already been down for nine years.

Brick.—Toronto laid brick pavement in 1895, and Chatham in 1896. "Good under all conditions," including steep grades, heaviest traffic and streets with car lines, expresses its efficiency in so far as durability is concerned. Its tendency to edge-wear produces cobbles and holes. On streets with car tracks it will last eight years or more before any repairs are necessary, if carefully laid. On streets with heavy traffic and without car lines this period is extended to fifteen years, while twenty-five years is a conservative estimate for light residential traffic. But no engineer recommends its use for quiet streets.

Mr. L. W. Rundlett, of Moose Jaw, reports laying this summer a vitrified brick pavement in a subway under a railway track. The brick is laid on five inches of concrete, with a sand cushion and grouted with a 1 to 1 Portland cement grout. He regards it as an exceedingly satisfactory pavement for this location.

Table I.—Mileages of Pavements in Some Canadian Cities and Towns.

CITY OR TOWN	Asphalt Block	Asphaltic Concrete	Bitulithic	Brick	Scoria Block and Stone	Sheet Asphalt	Untreated Wood Block	Treated Wood Block	Concrete
Berlin, Ont. ....	....	....	2.00	Car track allowance	....	....	....	....	....
Brantford, Ont.	0.05	....	2.98	2.08	....	....	....	....	0.20
Calgary, Alta. ....	....	....	12.30	....	....	29.90	....	4.50	4.10
Chatham, Ont.	2.00	....	4.60	3.80	....	....	Replaced	....	0.70
Edmonton, Alta. ....	....	being laid	12.50	....	....	5.50	1.50	....	....
Fort William, Ont.	1.76	....	....	....	....	0.54	....	0.30	....
Guelph, Ont.	2.27	....	....	0.81	....	....	....	....	....
Halifax, N.S. ....	....	....	3.00	....	1.50	2.00	....	....	....
Hamilton, Ont. ....	....	3.00	....	4.00	Street intersections	20.00	....	3.00	....
Kingston, Ont.	0.73	....	....	....	....	....	....	....	....
Lethbridge, Alta. ....	....	1.08	0.50	....	....	....	....	....	....
London, Ont.	0.38	0.24	2.17	1.02	....	4.97	....	....	....
Maisonneuve, Que. ....	....	....	....	....	....	....	....	....	2.50
Moncton, N.B. ....	....	....	....	....	....	....	0.75	....	....
Montreal, Que. ....	....	....	....	....	....	....	....	....	....
Moose Jaw, Sask. ....	....	....	....	0.57	....	0.67	....	11.80	....
New Westminster, B.C. ....	....	....	5.40	0.28	0.47	....	....	0.29	3.10
Ottawa, Ont. ....	....	....	0.65	....	0.57	23.90	....	0.41	....
Port Arthur, Ont.	2.16	1.18	2.12	....	....	2.76	....	....	0.12
Quebec, Que. ....	....	....	....	....	....	....	....	....	....
Regina, Sask.	0.72	....	9.31	....	....	6.20	2.10	....	1.45
St. Boniface, Man.	0.81	....	11.7	....	....	....	1.90	1.57	0.31
St. Catharines, Ont.	2.50	2.00	5.00	1.00	....	....	....	....	....
St. John, N.B.	2 bridge floors	0.50	....	0.16	....	0.15	3.00	....	....
Steelton, Ont. ....	....	....	....	....	....	....	....	....	0.66
Stratford, Ont.	1.10	....	1.0	1.40	....	....	....	....	....
Toronto, Ont.	6.30	being laid	37.72	29.07	2.16	157.03	....	8.77	....
Vancouver, B.C. ....	....	8.80	5.30	1.40	2.80	5.30	4.20	22.30	3.20
Victoria, B.C. ....	....	....	....	0.50	....	44.00	....	3.50	....
Walkerville, Ont.	2.31	....	0.38	....	....	....	1.25	....	1.50
Winnipeg, Man. ....	....	12.00	....	....	....	81.00	26.50	....	....