

TL-0012 — BITUTHENE[®]

Longevity Technical Letter

Samples of BITUTHENE[®] membrane have been obtained from three job sites.

Each sample had been in service for 15 years or more.

	SAMPLES #1	SAMPLES #2	SAMPLES #3
Project	Grace Research Building	Ohio Bell Building	Federal Office Building
Location	Lexington, MA	Columbus, OH	Chicago, IL
Application	Foundation Wall ¹	Plaza Deck ²	Plaza Deck ³
Installation Date	1972	1973	1973
Sample Date	1987 (15 years)	1989 (16 years)	1989 (16 years)

Footnotes:

- 1 Sampled in freeze-thaw zone 2-3 feet below grade
- 2 Membrane exposed during replacement of deck wearing surface
- 3 Membrane exposed when some flashing was replaced

In each case, the BITUTHENE[®] membrane was extremely well adhered to the concrete substrate. To remove the membrane, the rubberized asphalt was cut away from the concrete using a sharp knife. It could not be removed intact. In two cases, the Grace building and the Federal Office Plaza, the sample included a lap.

All samples were tested for pliability at -25 °F (-32 °C) with no visible effects. The film and rubberized asphalt had maintained their flexibility at this very low temperature.

Each sample was tested for the tensile strength and elongation of the polyethylene film. The tensile strength averaged 7,887 lbs/in.2 (54.4 MPa) in the machine direction, and 8,850 lbs/in.2 (61.1 MPa) in the cross direction, well in excess of our published 5,000 lbs/in.2 (34.5 MPa) minimum value. The elongation averaged 248% in the machine direction and 190% in the cross direction. This is far in excess of our quality control standards in effect at the time of manufacture.

The lap adhesions were evaluated on each of the two samples received. Both were very well bonded. These results clearly showed the condition of the BITUTHENE[®] membrane has changed very little over the 15 and 16 years of service. With limited samples from job sites, it is unrealistic to try to predict the expected functional life of BITUTHENE[®] membrane, but it is reasonable to assume that many more years of excellent performance can be expected.

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