

MATERIALS & RESEARCH

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November 24, 2004

RESEARCH UPDATE

U 2004-1

**INTERIM REPORT ON THE ULTRALINER PVC ALLOY PIPE LINER
BARTON, VERMONT**

REFERENCES: Work Plan No. 2001-R-8, U 2003-1

OVERVIEW:

The Ultraliner PVC Alloy Pipe Liner was installed under US Route 5 within Project No. STP 0113(58) S in Barton, Vermont on May, 2003. The liner was installed in two culverts, one inside a 450mm and another one inside a 600 mm diameter drain pipe at mile markers 3.58 and 3.63 respectively. The pipes run under US Route 5, under the southern approach of Bridge 00161, and under the adjacent access road and discharge eastward into Crystal Lake. The installation process is described in report U 2003-6.

PRODUCT DESCRIPTION:

The Product is a folded continuously extruded polyvinyl chloride pipe liner designed to return to its pre-folded round "memory" shape upon the application of heat and to be formed tightly against the host pipe by "blow molding" with steam.

SITE VISIT:

On November 23, 2004 personnel of the Materials and Research Section performed a visual inspection and took photographs for the records.

The 450mm diameter drain pipe Catch Basin had water collecting below the invert of the pipe as expected. The catch basin is in good structural and functional condition. The pipe's interior was dry and appeared to be in good condition with no signs of cracking or distress.



450mm Pipe Catch Basin (West End)
Top View with Grate removed



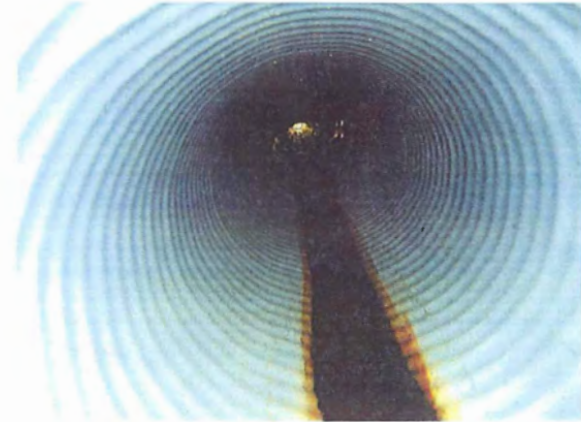
450mm Pipe Outlet - Stone Headwall (East End)
Front View

450mm Drain pipe

The 600mm diameter drain pipe appeared to be in good condition with no signs of cracking or distress. At the time of the inspection; water was running into the pipe freely and without obstructions.



600mm Pipe Inlet (West End)
Front View



600mm Pipe Outlet - (East End). No Headwall present
Front View

600mm Drain pipe

Both pipes showed water collected outside their respective outlet and inside a section of the pipe forming a pond at the foot of the embankment. This situation does not imply a hydraulic failure since the pipes are performing satisfactorily; however, water collecting at the outlets could be a concern to the future stability of the embankment. This situation will be monitored to assess the impact of the retained water on the embankment stability.

FOLLOW-UP:

The liner will be monitored on a semiannual basis and observations, including the condition of the liner and the roadway, will be documented in a report completed after the second year of performance. A final report documenting these items as well as the product's life cycle cost will also be published.

DISCLAIMER

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