

 <p>Manitoba Infrastructure and Transportation MATERIALS ENGINEERING BRANCH</p>	Specification No: APL152-2
	<u>Effective Date</u> Current: June 2010 Previous: n/a
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Materials Specification For: Ditch Check	

1. All materials to be used in the construction of synthetic permeable ditch barriers shall meet the following specifications:

- a) Polymer: UV resistant high density polyethylene (HDPE)
- b) Minimum density of 0.94 g/cm³ in accordance with ASTM D792 or ASTM D1505.
- c) Opening porosity size: 35-40% open area

Note: There is not standard panel length for the barrier control panels. Each supplier has its panel length standard.

Anchors

The supplier shall include sufficient anchors to secure panels in accordance with the product specifications. An installation tool for the anchors shall also be included with the order. Cost of anchors and tool to be included in the unit price for soil erosion control items.

The unit price for soil erosion control items shall include delivery and unloading costs.

2. Approvals

This item must be approved as identified on the Department's Products Standards List or be approved for use by the Department to qualify for purchase.

3. Construction Notes

Each permeable ditch barrier shall comprise a central portion forming a horizontal porous weir and two inclined portions, which extends from the weir up the embankment and the backslope. The barriers shall have the capability to shape to the contour of the channel bottom and side slopes to ensure firm contact between the entire bottoms of the Permeable Ditch Barriers and the soil. An anchoring system shall be provided to secure the permeable ditch barriers.

The permeable ditch barriers shall be placed on top of the erosion control blanket previously installed. The barriers shall be placed in a single row, oriented perpendicular to flow, with the ends of adjacent barriers overlapped a minimum of 50 mm. The ditch barriers shall also be extended such that the bottoms of the end barriers are higher in elevation than the top of the middle barrier spillway to ensure that sediment laden runoff will flow over the barrier, and not around it.

The barriers shall be installed starting at either the toe of the backslope or sideslope, place the panel strips on the bottom of the ditch along the centre of the erosion control blanket. Secure the barrier with specified pins. From the installed barrier, extend up the backslope, the second barrier overlapping the first barrier at the toe. The third barrier is then installed across the ditch



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from the first two panels. This sequence is continued until the permeable ditch barrier is completely installed. The barriers shall be secured in accordance with the manufacture's recommendations.

Suggested ditch barrier spacing

Example: 5% slope = = 4.6 meter spacing

4. Inspection and Maintenance

The permeable ditch barriers shall be inspected for damage after each significant storm (25 mm in 24 hours). Prompt repairs shall be made to ensure that the barriers are functioning properly. Any erosion caused by flows around the edges of the barrier or under the structure shall be corrected immediately. Remove sediment from behind the barriers when they become 60 percent full, or as needed. The removed sediment shall be deposited in an area that will not contribute sediment off-site and can be

Approved:

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