BUILDING MATERIALS EVALUATION COMMISSION
(BMEC)
AUTHORIZATION REPORT

DATE OF AUTHORIZATION	**MARCH 25, 2004**
BMEC AUTHORIZATION	**BMEC # 04-04-296**
BMEC APPLICATION	**#A2003-19**
DATE OF AMENDMENT	**FEBRUARY 28, 2013**

BEAVER PLASTIC LTD.
The Terminator™

1. Applicant

Beaver Plastic Ltd.
#7 – 26318 TWP RD 531A
Acheson, Alberta
T7X 5A3

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2. Manufacturing Facilities

Beaver Plastic Ltd.
#7 – 26318 TWP RD 531A
Acheson, Alberta
T7X 5A3

3. Description

The Terminator™ Insulated Chamber System (the Terminator™) is intended for use in a sewage system in lieu of absorption trenches constructed of stone and distribution pipe. The Terminator™ is made of gas permeable structural expanded polystyrene (EPS) insulation.

The Terminator™: Type A has an actual bottom width of 530 mm (20.8") and an actual height of 230 mm (9.0"). The thickness of the EPS insulation varies, ranging from 41 mm to 76 mm (1.6" to 3.0"). The Terminator™ does not have openings in the top or the sides.

4. Authorization Requested

The Applicant sought authorization for use of the Terminator™ as an alternative to the construction of stone and distribution pipe in as required by Section 8.7 of the 1997 Ontario Building Code, as amended (the "OBC"). The Applicant requested that the Terminator™ be used to replace stone and distribution pipe in absorption trenches and filter beds that are:

i. gravity fed,
ii. "dosed" (non-pressurized distribution system) and,
iii. pressurized.

Note: For the purposes of this authorization, "dosed" means a system in which effluent is pumped to the leaching bed either by pump or siphon, but the effluent is not pressurized within the leaching bed.

5. Assessment

Reports and assessments provided by the applicant show that if the Terminator™ is designed, performance tested, installed and maintained in accordance with the limitations in the manufacturer's instructions and the conditions stated in this authorization, a level of performance will be provided as required by the OBC, for absorption trenches in soil, in leaching bed fill or in a filter bed, whether gravity fed, pressurized or "dosed".

Reports that were submitted and reviewed but not limited to:

1. Geothermal Analysis of the Terminator™ and Conventional Sewage Effluent Chambers, dated February 8, 2002.

2. AASHTO H-10 Testing Certification from EBA Engineering Constants Ltd

3. Manufacturer's Literature

4. Installation Instruction dated March 3, 2003

5. Terminator™: Beaver Plastic Quality Control Manual

6. Product Approval Letters:
   - Province of Alberta
   - Province of Saskatchewan
   - Province of Manitoba
   - Yukon Territory

6. Authorization

The use of the Terminator™ is authorized in sewage systems within the scope of Part 8 of the OBC, as an alternative to stone and distribution pipes in absorption trenches and in filter beds, when installed in accordance with the manufacturer's recommendations, all other requirement pertaining to the installation of the Terminator™shall conform to the requirements of the OBC and is subject to the following Specific Terms and Conditions of this Authorization:

A. Specific Terms and Conditions

1. This Authorization is valid only for the Terminator™: Type A.

2. The Terminator™ shall be manufactured to AASHTO Standard H-10 for loading.

3. The length of the Terminator™ chamber shall be calculated such that every metre of distribution piping and stone, as specified in Articles 8.7.3.1. and 8.7.5.3., is equivalent to 1.2 m of Terminator™ chamber.

4. When the Terminator™ is installed in lieu of distribution piping and stone, the leaching beds must satisfy the general construction requirements specified in Articles 8.7.2.1., 8.7.4.2. and 8.7.5.3.

5. The minimum clearance distances required by Article 8.2.1.6. for distribution piping shall be met by the Terminator™.

6. When installed in lieu of distribution piping and stone in absorption trenches, the trenches for the Terminator™ shall be:

    (a) approximately the same length and not more than 30 m in length,

    (b) a minimum width of 500 mm,

    (c) at least 600 mm and not more than 900 mm in depth,

    (d) centred at least 1600 mm,

    (e) at least 900 mm at all points on the bottom of the trench, above the high ground water table, rock or soil with a percolation time greater than 50 minutes, and

    (f) backfilled, after installation of the Terminator™, with leaching bed fill, so as to ensure that after the leaching bed fill settles, the surface of the leaching bed will not form any depressions.

(g) backfilled with a soil that does not contain heavy clay, silt or debris, and is manually compacted along the sides of the chamber to provide lateral support.

8. When installed in lieu of distribution piping and stone in filter beds, the lines of Terminator™ shall be evenly spaced over the surface of the filter medium to which the sewage effluent is applied, and the filter bed shall meet the following requirements:

   (a) the filter medium shall meet the requirements of Subsection 8.7.5. of the OBC,

   (b) the surface of the filter bed shall be at least 900 mm above the high ground water table, rock or soil with a percolation time greater than 50 minutes per centimetre as per Clause 8.7.3.2.(1)(e) of OBC.

9. When used in gravity fed conditions, the Terminator™ shall be installed in compliance with all the above-stated Specific Terms and Conditions and be:

   (a) installed level over the length of the trench,

   (b) securely connected, chamber to chamber, using the built-in latch,

   (c) free of structural damage and used full length (not cut),

   (d) equipped with end caps installed on both ends, and

   (e) equipped with a built-in splash plate at the inlet end of each chamber line, to prevent soil scouring.

10. Where the sewage effluent is “dosed” to the leaching bed by pumps or a siphon, the Terminator™ shall be installed to comply with all the above-stated Specific Terms and Conditions and:

    (a) the effluent is pumped to a header line or distribution box prior to entering the chambers, and,

    (b) a volume of effluent within the range of 3.5 - 8.0 litres per metre of Terminator™ , must be pumped within a time period not exceeding 15 minutes, to meet the requirements of Sentence 8.6.1.3.(4).

11. Where the sewage effluent is distributed through a pressurized system, the Terminator™ shall be installed:

    (a) to comply with Specific Terms and Conditions numbers 1. through 9. above, and,

    (b) with a minimum 1½ (38 mm) diameter pipe extending over the entire length of each trench, and such pipe:

        i. being specified by the manufacturer as acceptable for pressurized installations,

        ii. having minimum 6 mm diameter orifices, spaced over its length to ensure even distribution of effluent,

        iii. being supported in a manner as to ensure self-draining and prevent freezing of its contents,

        iv. having clean-outs installed at the downstream end of each chamber line, to allow the system to be serviced, and,

        v. receiving effluent from a treatment unit equipped with an effluent filter on the outlet, such effluent filter to be installed and sized in accordance with the manufacturer's recommendations.

B. General Conditions

1. The use of the Terminator™ must comply with the *Building Code Act, 1992 (the "Act")* as amended or re-enacted from time to time and except as specifically authorized herein, with the OBC as amended or remade from time to time.

2. A copy of this Authorization shall accompany each application for a building permit and shall be maintained on the site of the construction with the building permit.

3. The Applicant named in Part 1 hereof shall promptly notify the BMEC of:

    (a) the failure of the Applicant, or of the material, system or building design that is the subject matter of this Authorization, to comply with any of the terms and conditions set out in 6. A. above; or

    (b) the occurrence of any of the events described in Conditions 6. B. 4. (a) and (b) (ii) below.

4. The BMEC may amend or revoke this Authorization where it determines that:

   (a) any change has been made to:

      i. the material, system or building design that is the subject matter of this Authorization;

      ii. the address of the applicant specified in Part 1 of this Authorization; or,

      iii. the ownership of the applicant specified in Part 1 of this Authorization.

   (b) the use of the material, system or building design authorized herein;

      i. does not comply with the *Act* or any relevant legislation as they may be amended or re-enacted from time to time; or

      ii. provides an unsatisfactory level of performance, in situ.

   (c) the Applicant, or the material, system or building design that is the subject matter of this Authorization, has failed to comply with any of the terms and conditions set out in this Authorization; or

   (d) any OBC provision relevant to this Authorization has been amended or remade.

5. Where the BMEC receives additional information concerning the material, system or building design authorized herein, the BMEC may review this Authorization and the BMEC may after the review amend or revoke this Authorization as in the opinion of the BMEC may be necessary.

Dated at Toronto this 25th day of March 2004.

BUILDING MATERIALS EVALUATION COMMISSION

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Rashmi Nathwani, Chair