

Date of Authorization
BMEC Authorization
BMEC Application

July 29, 2004
BMEC # 04-07-299
#A2004-07

AUTHORIZATION REPORT: Hancor Envirochambers™

1. Applicant

Hancor Inc.
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2. Manufacturing Facilities

Vantage Product
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Carson Industries
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Ft. Wayne Plastics
510 Sumpter Drive
Ft. Wayne, IN, 46804

3. Description

Hancor Envirochambers™: Narrow, Standard, Hi-capacity (the “Hancor Chambers”) are intended for use in a sewage system in lieu of absorption trenches constructed of stone and distribution pipe.

The Narrow chamber has a bottom width of 380 mm and a height of 292 mm, the Standard chamber has a bottom width of 850 mm and a height of 300 mm and the Hi-capacity chamber has a bottom width of 850 mm and a height of 450 mm.

The Hancor Chambers are formed from injection moulded high density polyolefin and are connected end-to-end using overlapping dowels with pilot hole connections.

The sidewall louvers are set at a 30 degree angle to help prevent soil intrusion and the Hancor Chambers are closed at the ends of the trenches with snap-on end plates.

4. Authorization requested

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

- (a) gravity fed,
- (b) "dosed" (non-pressurized distribution system), and
- (c) pressurized.

Note: For the purposes of this authorization, "dosed" means a system in which effluent is pumped to the leaching bed, either through the use of a 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 Hancor Chambers are 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 Building Code for absorption trenches in soil, in leaching bed fill or in a filter bed, whether gravity fed, pressurized or "dosed".

Listed below are the reports that were submitted and reviewed, but are not limited to:

1. Hancor Envirochamber™ "Trench Length Reductions and Warranty Periods" by State.
2. Manufacturer Information "EnviroChamber™, On -Site Wastewater Management Systems."
3. Envirochamber™ Units Septic Leach Field System, Trench Design Installation Instruction.
4. Hancor Envirochamber™ Unit Specifications Data Sheet.
5. Envirochamber™ units and Accessories Sheet.
6. Table Comparison to Similar BMEC Approved Material (Narrow Chamber Comparison).

7. TTL Associates Inc. - Reports Verifying Dimension and Volume Capacity of Hancor Enviro- Chambers™.
8. Certificate of Listing, IAPMO Research and Testing Inc. - dated August 2003.
9. International Association of Plumbing and Mechanical Official, "Material and Property Standards for Plastic Leaching Chambers" IAPMO 63-99.
10. Quality Control Information.
11. Letters of Approvals:
 - a. Department of Environment and Natural Resources, South Dakota, US, April 25, 2002.
 - b. Department of Health, Ohio, US, May 30, 2002.
 - c. Department of Health, State of New York, US, June 26, 2002.
 - d. Department of Environment and Natural Resources, North Carolina, US, October 8, 1995
 - e. Department of Commerce, Wisconsin, US, April 4, 2002.
 - f. Texas Natural Resource Conservation Commission, October 2, 1997.
 - g. Cabinet for Human Resources, Kentucky, US, July 7, 1995.
 - h. Department of Environmental Protection, Massachusetts, US, April 24, 2002.

6. Authorization

The Hancor Chambers are authorized for use in sewage systems within the scope of Part 8 of the Building Code, 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 requirements pertaining to the installation and construction are subject to the requirements of the Building Code, and to the Specific Terms and Conditions of this Authorization:

A. Specific Terms & Conditions

1. This authorization is valid only for Hancor Chambers: Narrow, Standard, Hi-capacity.
2. The Hancor Chambers shall be manufactured to AASHTO Standard H-10 loading.
3. When the Hancor Chambers are installed in lieu of distribution piping and stone, the length of the chamber system must equal the required lengths of distribution pipe specified in Articles 8.7.3.1. and 8.7.5.3 of the Building Code.

4. When the Hancor Chambers are 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 of the Building Code.
5. The minimum clearance distances required by Article 8.2.1.6. of the Building Code for distribution piping shall be met by the Hancor Chambers.
6. When installed in lieu of distribution piping and stone in absorption trenches, the trenches for the Hancor Chambers 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,
 - (f) backfilled, after installation of the Hancor Chambers, 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, and
 - (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.
7. When installed in lieu of distribution piping and stone in filter beds, the lines of the Hancor Chambers 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 Building Code,
 - (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 the Building Code.

8. When used in gravity fed conditions, the Hancor Chambers 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.

9. Where the sewage effluent is “dosed” to the leaching bed by pumps or a siphon, the Hancor Chambers 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 Hancor Chambers, must be pumped within a time period not exceeding 15 minutes, to meet the requirements of Sentence 8.6.1.3.(4) of the Building Code.

10. Where the sewage effluent is distributed through a pressurized system, the Hancor Chambers 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 Hancor Chambers System 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 Building Code.
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 Building Code 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 29th day of July 2004.

BUILDING MATERIALS EVALUATION COMMISSION

Ed Link, Vice-Chair