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Ontario

**Building Materials
Evaluation Commission**

**Commission d'évaluation
des matériaux
de construction**

Date of Authorization
BMEC Authorization Number
BMEC Application

June 29, 2006
06-06-326
BMEC A2006-07

AUTHORIZATION REPORT – PHIX Cartridge System

1. Applicant

Green Turtle Technologies Inc.
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2. Manufacturing

Information supplied to the BMEC, but withheld at the request of the Applicant.

3. Description

The PHIX Cartridge System (the “PHIX Cartridge”) is designed for acid neutralization.

The PHIX Cartridge has four main components, the Manifold, Internal Skelton, the Treatment Chamber, and the Solid Collection Chamber, and is constructed out of 100% polypropylene.

The Manifold houses the PHIX Cartridge's three main connections: threads to the sink drainage outlet, and threads into the Treatment Chamber. The Internal Skelton directs the flow of the wastewater from the sink drainage outlet through the centre pipe into the Solid Collection Chamber for solids removal. The PHIX Media contained within the Treatment Chamber will neutralize the acidic wastewater based on the retention time required to complete the neutralization reaction. The neutralized wastewater will be channelled through a woven filter and exits the Manifold into the regular plumbing drainage system.

4. Authorization Requested

The Applicant sought a Building Materials Evaluation Commission (“BMEC”) authorization for the use of the PHIX Cartridge as an engineered acidic wastewater neutralizing system that connects directly to an under the sink plumbing drainage system.

5. Assessment

Reports and assessment provided by the applicant demonstrate that if the PHIX Cartridge System is constructed, installed, operated, maintained and monitored in accordance with the limitations of the manufacturer specifications and conditions stated in this authorization, a level of performance equivalent to that required by the Building Code will be provided.

The following reports were submitted, and reviewed:

1. PHIX™ Neutralization Systems: Cartridge System “Technical Manual 2005, Version 1”
 2. Material Safety Data Sheet – PHIX Media 3000, dated June 12, 2002.
 3. Material Safety Data Sheet – PHIX Media 2000, dated January 12, 2005.
 4. PHIX™ Neutralization Systems: Cartridge System “Owner’s Manual, Green Turtle, Version 1”.
 5. Test Data and Test Analysis “Neutralization Testing with the PHIX Cartridge Unit”.
 6. Test Data and Test Analysis “Flow test of the PHIX Cartridge Unit”
 7. Letter Approval: City of Chicago “PHIX Cartridge Systems and PHIX gravity System”, dated February 23, 2005.
6. The PHIX Cartridge is authorized for use as an alternative means of acid neutralization in a plumbing system, as required by Articles 7.4.4.4. “Neutralization and Dilution Tanks”, 7.5.4.4. “Venting of Corrosive Drain Piping”, and Sentence 7.5.4.2.(6) of the Building Code; all other requirements pertaining to the installation and construction are subject to the requirements of the Building Code and are subject to the following terms and conditions

Note: If a conflict arises between this document and the provisions of the documents listed below, the most restrictive provision shall apply.

A. Specific Terms and Conditions

1. This authorization is valid only for Green Turtle Technologies.
2. This authorization is valid for the use of the PHIX Cartridge, for use with media 2000, and 3000.
3. The design of that portion of the plumbing system, pertaining to where the PHIX Cartridge is installed shall be performed by a professional engineer, as defined in the Building Code, and who is trained and experienced in the area of acid neutralization.
4. The documents associated with the PHIX Cartridge shall be stored in a safe and accessible location on-site, in the same room, and contain a minimum of the following information:
 - a) The Green Turtle's contact information,
 - b) Maintenance Schedule
 - c) Material Safety Data Sheet,
 - d) Warranty,
 - e) Owners Manual,
 - f) Emergency Contact Information, and
 - g) A list of the chemicals, for the specific location, that the PHIX Cartridge was designed to neutralize.
5. The PHIX Cartridge shall be installed as per the manufacturer's installation instructions.
6. The PHIX Cartridge shall only be installed if a maintenance schedule, specific to the location and use, has been developed.
7. Copies of the PHIX Cartridge maintenance schedule and the on-site documents as listed in 6.A.4., shall be submitted to the chief building official, to form a part of the permit application package.
8. Documentation shall be submitted to the chief building official confirming that the wastewater from the PHIX Cartridge will comply with the local sewage by-law, and/or related applicable law listed in Article 1.1.3.3. "Applicable Law" of the Building Code.
9. The PHIX Cartridge shall be supported by a metal bracket that is fixed to the floor and raised up to the bottom of the unit, removing any loading that may be applied to the pipe, PHIX Cartridge, or the sink.
10. A trap is not permitted between the sink and the PHIX Cartridge.
11. The PHIX Cartridge shall only be used for under the sink laboratory applications.

12. The PHIX Cartridge shall only be installed where polypropylene pipes and fittings are permitted for use.
13. A vent is not permitted between the sink and the PHIX Cartridge.
14. A sticker containing the following information, posted in a conspicuous location, on a contrasting background, directly above the sinks(s) where PHIX Cartridge(s) has been installed shall include:
 - a) Green Turtle's contact information,
 - b) The following statement: "Warning: do not dispose of grease, organic waste, fats, oils, or any material for which the acid neutralization media was not designed in this sink", and
 - c) PHIX Cartridge installed under the sink.
15. The aggregate design discharge through any PHIX Cartridge shall not exceed 21 litres per minute.
16. The PHIX Cartridge shall not be installed in connection with other appliances (e.g. dishwasher).

B. General Conditions

1. The use of the PHIX Cartridge and as described in the specific terms and conditions set out in 6.A. 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 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 29 day of June 2006.

BUILDING MATERIALS EVALUATION COMMISSION

Edward Link, P. Eng.
Vice-Chair, BMEC