

**BUILDING MATERIALS EVALUATION COMMISSION  
(BMEC)  
AUTHORIZATION REPORT**

**DATE OF AUTHORIZATION**  
**BMEC REFERENCE**  
**BMEC APPLICATION #**

**OCTOBER 25, 2001**  
**BMEC # 01-18-270**  
**BMEC # A2001- 11**

**EZ Flow Drainage System**

**1. Applicant**

Ring Industrial Group  
65 Industrial Park Road  
  
Oakland, Tennessee  
USA, 38060  
  
Tel: (877) 368 - 8294  
Fax: (901) 465 - 1181

**2. Manufacturing Facilities**

EZ Flow  
2175 Old Hendersonville  
Highway  
Brevard, North Carolina  
USA, 28712  
  
EZ Flow  
5050 Duncanville Road  
Dallas, Texas  
USA, 75236  
  
EZ Flow  
5480 US 1 South  
St. Augustine, Florida  
USA, 32086

**3. Description**

The EZ Flow Drainage System is a subsurface drainage product which may replace crushed stone, with a geo-synthetic aggregate. The EZ Flow Drainage System consists of a 100 mm (4") diameter prefabricated flexible pipe surrounded by 100 mm (4") of an expanded polystyrene aggregate which is held together with a polyethylene netting. The total diameter of the EZ Flow Drainage System referred to within this Authorization is 300 mm (12"). The EZ Flow Drainage System is provided in prefabricated 3.0 m (10 foot) pipe and aggregate bundle lengths.

**4. Authorization Requested**

The applicant sought authorization for the use of EZ Flow Drainage System as an equivalent to the level of performance required by Part 9: Subsection 9.14.2., Subsection 9.14.3., and Subsection 9.16.3. of the 1997 Ontario Building Code (OBC) as amended.

## 5. Assessment

Reports, assessments and information provided by the applicant indicate that if the EZ Flow Drainage System is designed and installed in accordance with the manufacturer's instructions and limitations, and the specific terms and conditions stated in this authorization, it will provide a level of performance that would be achieved by the conformance with the OBC.

Reports, assessments and information reviewed included the following:

1. Technical Background Information (TBI) Memo relating to EZ Flow Drainage System, dated 27 June 2001.
2. Video Tape: "EZ Flow : Generic Drainage Systems."
3. Alternative to gravel approval letter from the Ministry of Health and Ministry Responsible for Seniors in the Province of British Columbia, dated 24 April 1998.
4. Alternative to gravel approval letter from the Department of Insurance in the State of North Carolina, dated 17 February 1988.
5. Compliance Report Listing, Southern Building Code Congress International, Inc., No. 8971, date issued 12 January 2001.
6. Limited Usage approval letter, State of North Carolina, Department of Transportation, dated 23 May 1990.
7. Approval Letter, United States Department of Agriculture, State of Georgia.
8. Alternative to gravel approval letter from the Department of Insurance in the State of North Carolina, dated 21 January 1994
9. "Building Codes Division Ruling on Acceptability of Material, Design or Method of Construction", Ruling No. 94-31, Oregon State Plumbing Speciality Code (OSPSC).
10. Instructions for the installation of EZ Flow Drainage System 1203H, 1006H, 1003H, 1006V, 1006T, 1003T, 1003V, and 1002V in the State of Alabama.
11. Instructions for Sizing EZ Flow Drainage Systems in the State of Alabama.
12. Technical Article "Comparison of EZ Flow Installations to a 3' Gravel Trench", dated 18 January 2001.

13. Instructions for the installation of EZ Flow Drainage Systems 1203H, and 1003H in the State of Florida.
14. Product specifications for geo-foam particles.
15. Product specifications for polystyrene aggregate.
16. Polyethylene drain pipe specifications.
17. Manufacturer's Information: Product Note 3.106, "Standard Pipe Perforations", dated January 2000.
18. Manufacturer's study "Report on Evaluation of Seven Year Old Eee Zzz Lay Effluent Drainfield Systems Installed in Two Feet Wide Trenches in Clay Soils (Class IV) in The State of Texas."
19. American Society of Agricultural Engineers, Paper No. 91-2578, "Sediment Retention Efficiencies of Sediment Basin Filtered Outlets.", dated 1991.
20. Retrospective Study "Survey and Study of Installed Expanded Polystyrene (Esp) Aggregate Onsite Sewage Treatment and Disposal Systems in Georgia: 1998 Thur 1998."
21. "Hydraulic Conductivity: an Evaluation of Drainage Media in Controlled Conditions" delivered 17 July 2001, prepared Donald Oderkirk, P.Eng, BPI, pllc, Memphis Tennessee.

## **6. Authorization**

The EZ Flow Drainage System may replace crushed stone and drainage tile around the foundation of a building as described in Part 9 of the OBC subject to the following terms and conditions:

### **A. SPECIFIC TERMS AND CONDITIONS:**

1. This authorization is valid only for the 300 mm (12") diameter EZ Flow Drainage System.
2. The drainage tile shall comply with ASTM F405.
3. The top most surface of the 100 mm (4") drainage tile portion of the EZ Flow Drainage System shall not be higher than the underside of the floor slab or crawl space.

4. The EZ Flow Drainage System shall be placed directly adjacent to the footings, and assembled in accordance with the manufacturer's recommendations.
5. The EZ Flow Drainage System shall be stored in BOMARK 100, Inc. UVI (Ultra Violet Inhibitor) treated bags prior to installation to protect the product from UV degradation.
6. The EZ Flow Drainage System shall be covered by a two (2) year manufacturer warranty.
7. A barrier cover shall be placed over the top of the EZ Flow Drainage System prior to backfilling, and the barrier cover shall be a permeable filtration fabric of the type recommended by the manufacturer.
8. The EZ Flow Drainage System shall be placed on well compacted or undisturbed soil.
9. The EZ Flow Drainage System shall be covered with a minimum of 150 mm (6") of well compacted backfill.
10. The perimeter of the footing shall be free of water at the time of the installation.
11. The EZ Flow Drainage System shall be installed to drain water away from the footings and foundations of the building.

**B. GENERAL CONDITIONS**

1. The use of the EZ Flow Drainage System must comply with the *Building Code Act, 1992* 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 Specific Terms and Conditions set out in 6. A. above; or

- (b) the occurrence of any of the events described in Specific Terms and 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 *Building Code Act, 1992* 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 Specific Terms and Conditions set out in this Authorization; or
  - (d) any Ontario Building Code provision relevant to this Authorization has been amended or remade.

Dated at Toronto this 25th day of October 2001.

**BUILDING MATERIALS EVALUATION COMMISSION**

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Rashmi Nathwani, Chair