

Date of Authorization  
BMEC Authorization  
BMEC Application

September 29, 2005  
# 05-10-314  
# A2004-12

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**AUTHORIZATION REPORT- Cayuga (washed) High Performance Bedding™****1. Applicant**

Dufferin Aggregates.  
2300 Steeles Avenue West, Suite 400  
Concord, Ontario  
L4K 5X6

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**2. Manufacturing Facilities**

Cayuga Quarry  
511 Hwy#3 RR#4  
Cayuga, Ontario, N0A 1E0

**3. Description**

The Dufferin Aggregates Cayuga (washed) High Performance Bedding™ (the “Cayuga (washed) HPB™”) is a limestone aggregate non-uniformly graded gravel offering a 9.5 mm top size. The Cayuga (washed) HPB™ is a crushed, washed, and graded aggregate; and is manufactured at the Cayuga Quarry.

**4. Authorization requested**

The applicant sought an Authorization for the use of the Cayuga (washed) HPB™ as an acceptable alternative that satisfies the granular material requirements for applications beneath floors, and on the top and sides of drain pipes and tile as it is required by the provisions of the Building Code, as amended (the “Building Code”).

The applicant requested an equivalent to the requirements of Sentences 9.14.2.1.(2), 9.14.3.3.(4), and 9.16.2.1.(1) of the Building Code.

## 5. Assessment

Reports and assessments provided by the applicant demonstrate that if the Cayuga (washed) HPB™ is manufactured, stored, installed, maintained and monitored in accordance with the limitations of the manufacturer's specifications and the conditions stated in this Authorization, a level of performance equivalent to that required by Sentences 9.14.2.1.(2), 9.14.3.3.(4), and 9.16.2.1.(1) of the Building Code will be provided.

The reports submitted and reviewed, but were not limited to:

1. Manufacturer's literature "HPB - High Performance Bedding"
2. Peto MacCallum Ltd. Consulting Engineers, re: Original Report: Comparative Evaluation of Pipe Bedding Stones for Acceptance by the City of Mississauga , Revised Report: Comparative Evaluation of Granular Materials for acceptance by the Ontario Building Code, Ref #:8TE088(R), issued April 10, 1988, and revised on October 28, 2004.
3. Portable Demonstration Model Images.
4. Application to the Building Materials Evaluation Commission, submitted by Dufferin Aggregates, March 11, 2002.
5. Dufferin Aggregates Power Point Presentation, March 27, 2002.
6. Application to the Building Materials Evaluation Commission, submitted by Dufferin Aggregates, June 23, 2003.
7. Peto MacCallum Ltd. Re: Flow Rate/Permeability Testing of High Performance Bedding (H.P.B) , ref# 03TE061A, materials from Acton Quarry, dated September 11, 2003.
8. Decision of the Building Materials Evaluation Commission, submitted by Dufferin Aggregates, November 5, 2003.
9. Application for "OACETT Honours Awards 2002 - 2003"
10. Building Materials Evaluation Commission Authorization #02-08-279.
11. Dufferin Aggregates Quality Control Manual: Aberfoyle Pit.
12. Dufferin Aggregates Quality Control Manual: Acton Quarry.
13. Dufferin Aggregates Quality Control Manual: Cayuga Quarry.
14. Dufferin Aggregates Quality Control Manual: Mill Creek Pit.

15. Dufferin Aggregates Quality Control Manual: Milton Quarry.
16. ASTM Standard D 75 - 97 "Standard Practice for Sampling Aggregates.
17. Peto MacCallum Ltd. Consulting Engineers, re: Partial Report - Comparative Evaluation of Granular Material, revised February 14, 2005,ref # 03TE61B.
18. Peto MacCallum Ltd. Consulting Engineers, "Comparative Evaluation of Granular Materials", revised October 28, 2004, ref # 0TE088(R).
19. Letter of recommendation, Unilock, dated May 16, 2002.
20. Letter of recommendation, Mid-North Excavating, dated June 11, 2002.
21. Letter of recommendation, Maxwell Excavating Limited, dated July 23, 2001.
22. Letter of Approval, Regional Municipality of Peel, Public Works, dated August 24, 1994.
23. Letter of Approval, City of Mississauga, Department of Transportation and Works, dated August 17, 1994.
24. Dufferin Aggregates submission, June 24, 2005.
25. Dufferin Aggregates submission, July 28, 2005.
26. Peto MacCallum Ltd. Consulting Engineers letter re: BMEC Application A2004-12: Dufferin Aggregates" dated January 3, 2005, ref # 03TE061B.
27. Dufferin Aggregates Quality Control Lab Manual from all Dufferin Aggregate Sites and Cayuga Materials.

## **6. Authorization**

The Dufferin Aggregates Cayuga (washed) HPB™ is authorized for use as a granular material as referenced in Sentences 9.14.2.1.(2), 9.14.3.3.(4) and 9.16.2.1.(1) of the Building Code, when the Cayuga (washed) HPB™ is manufactured, stored, installed, maintained and monitored in accordance with the limitations of the manufacturer's specifications and recommendations; and the following terms and conditions:

### **A. Specific Terms and Conditions**

1. This authorization is valid only for Dufferin Aggregates Cayuga (washed) HPB™ manufactured at the facilities referenced in Section 2. of this Authorization.
2. The Cayuga (washed) HPB™ shall be manufactured and stored as per Dufferin Aggregates Quality Control Manuals.

3. The Cayuga (washed) HPB™ shall be a well graded material that does has not more than 15% passing a #4 sieve, and not more than 10% passing a #8 sieve.
4. The Cayuga (washed) HPB™ is authorized for use as a granular material as referenced in Sentences 9.14.2.1.(2) and 9.14.3.3.(4) of the Building Code.
5. The Cayuga (washed) HPB™ is authorized for use as a granular material as referenced in Sentence 9.16.2.1.(1) of the Building Code.
6. When the Cayuga (washed) HPB™ is used on the top and sides of a drain tile or pipe, the drain tile or pipe shall be wrapped in a geo-textile material.
7. A signed copy of the quarry ticket, for each shipment received shall be kept with the on-site construction documents, and upon request produced to the authority having jurisdiction.
8. The Dufferin Aggregates quarry ticket, as required by 6.A.7. of this authorization, must indicate the following minimum information:
  - (a) Name of the Quarry
  - (b) Date,
  - (c) Ticket number,
  - (d) Gross and net amount of the HPB™ product,
  - (e) Name of the product "Cayuga (washed) HPB™", and
  - (f) BMEC Authorization #.
9. The Cayuga (washed) HPB™ is not authorized for applications pertaining to Part 8 "Sewage Systems" of the Building Code.
10. The Cayuga (washed) HPB™ is not authorized for use when designed, or installed in combination with other aggregates.

**B. General Conditions**

1. The use of the Dufferin Aggregates Cayuga (washed) HPB™ as described in 6. A. Specific Terms and Conditions No. 1. must comply with the *Building Code Act, 1992* (the "BCA") as amended or re-enacted from time to time and except as specifically authorized herein, with the Building Code 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 BCA 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 29 day of September 2005.

## **BUILDING MATERIALS EVALUATION COMMISSION**

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Edward Link, Vice-Chair