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**Ontario**

**Building Materials  
Evaluation Commission**

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

Date of Authorization  
BMEC Authorization Number  
BMEC Application

September 27, 2007  
07-04-334  
A2006-22

## **AUTHORIZATION REPORT – The Durisol Wall Form System**

### **1. Applicant**

Durisol Building Systems Inc.  
67 Frid Street  
Hamilton, Ontario  
L8P 4M3

Tel: 905 521-0999  
Fax: 905 521-8658  
Web: [www.durisolbuild.com](http://www.durisolbuild.com)

### **2. Manufacturer's Address**

51 Arthur Street  
Mitchell, Ontario  
N0K 1N0

### **3. Description**

The "Durisol Wall Form System" is a stay in place formwork made from a proprietary material consisting of low-density cement bonded wood fibre composite made from recycled waste wood (100% lumber) and Portland Cement.

The Durisol Wall Form System is used to form a structural grid of cured in place concrete and reinforcing steel. The Durisol Wall Form System is an interconnected grid of concrete, which provides structural capacity. The concrete strength and steel requirements are designed by an engineer licensed to practice in Ontario.

The Durisol Wall Form System blocks are nominally 300 mm x 900 mm (12" x 36") and come in widths that vary from 150 mm to 450 mm (from 6" to 18").

The Durisol Wall Form System is stacked and staggered in dry-bond, and the cavities are filled with concrete and reinforcing steel. When set the concrete creates a series of vertical columns that becomes the structural element of the wall.

#### **4. Authorization Requested**

The applicant sought authorization for use of the Durisol Wall Form System for use in the construction of Division B, Part 9 buildings regulated by Ontario's 2006 Building Code.

#### **5. Assessment**

Reports, assessments and information provided by the applicant indicate that if the Durisol Wall Form 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 Ontario's 2006 Building Code.

Reports, assessments and information reviewed included the following:

1. Durisol Wall Form System "Installation and Technical Guide", updated March 2006.
2. Durisol Wall Form System "Design and Specification Guide", updated August 2002.
3. Test Report, University of Toronto – Systems Building Centre "Strength of 8" Durisol Wall Subjected to Short Term Axial Load."
4. Test Report, University of Toronto – Systems Building Centre "Strength of 8" Durisol Wall Acting as a Deep Beam."
5. Test Report, University of Toronto – Systems Building Centre "Behaviour of 8" Durisol Wall in High-Rise Building (Acrylic Model Test of Six Storey Structure)."
6. Test Report, University of Toronto – Systems Building Centre "Load Distribution Properties of Durisol Walls."
7. Test Report, Ortech "ASTM E 84-94: Surface Burning Characteristics of Durisol Sound Barrier" report number 95-J52-95-92-563(A).
8. Test Report, Underwriters' Laboratory of Canada "ULC-263 Structural Cement-Fibre Units For Wall and Partition Assemblies" File Number CR773.
9. Test Report, Underwriters' Laboratory of Canada "ULC-S101 Structural Cement-Fibre Units For Wall and Partition Assemblies" File Number CR773.
10. Report, Building Engineering Group "Indoor Air Quality and Hygroscopically Active Materials" Straube and deGraauw.
11. Test Report, National Research Council "ASTM C177-71: Thermal Insulating Characteristics" report number 1803S.

12. Building Engineering Group "In-Service Performance of Enclosed Walls" Straube and deGraauw, dated December 1997.
13. Durisol Wall Form System "Installation and Technical Guide", revised June 19, 2007.
14. Durisol Wall Form System "Design and Specification Guide", revised June 19, 2007.
15. Durisol Wall Form System sample calculations dated June 19, 2007.

## **6. Authorization**

The Durisol Wall Form System is authorized for use in the construction of Division B, Part 9 buildings; all other requirements pertaining to the design, installation, and construction are subject to the requirements of Ontario's 2006 Building Code, and are subject to the following terms and condition:

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

- 1.0. This authorization is valid only for the Durisol Building System Inc.'s Durisol Wall Form System.
- 2.0. The Durisol Wall Form System shall be installed in accordance with Durisol Wall Systems Inc.'s "Installation and Technical Guide" updated June 19, 2007.
- 3.0. Except as permitted in 4.0 below, when the Durisol Wall Form System is used in the construction of a building classified under Division B, Part 9, of Ontario's 2006 Building Code, then the Durisol Wall Form System shall:
  - 3.1. have the structural design and general review carried out by a Professional Engineer as defined in the *Professional Engineers Act*, (Ontario); the Professional Engineer shall provide the principal authority with documentation certifying that the design and installation conforms with this authorization, and Division B, Part 4 of the 2006 Building Code,
  - 3.2. not be used where an exposing building face is required to be constructed of non-combustible construction, and
  - 3.3. not be required to have a vapour barrier installed, when the air barrier is a fully sealed, and comprised of taped and painted gypsum board on the inboard surface of the wall assembly.
- 4.0. If the Durisol Wall Form System is used in the construction of a building classified under Division B, Part 9, of Ontario's 2006 Building Code, and does not exceed 2 storeys in building height, then, the Durisol Wall Form System shall:

- 4.1. be designed and constructed in strict compliance with the pre-engineered tables and drawings prepared by Durisol Wall Systems Inc.'s "Design and Specification Guide", revised on June 19, 2007,
- 4.2. not be used where an exposing building face is required to be constructed of non-combustible construction, and
- 4.3. not be required to have a vapour barrier installed, when the air barrier is a fully sealed, and comprised of taped and painted gypsum board on the inboard surface of the wall assembly.

## **B. General Conditions**

- 1.0 The use of the Durisol Wall Forming 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.
- 2.0 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.
- 3.0 The Applicant named in Part 1 hereof shall promptly notify the BMEC of:
  - 3.1. 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
  - 3.2. the occurrence of any of the events described in Specific Terms and Conditions 6. B. 4. (a) and (b) (ii) below.
- 4.0 The BMEC may amend or revoke this Authorization where it determines that:
  - 4.1. any change has been made to:
    - 4.1.1. the material, system or building design that is the subject matter of this authorization;
    - 4.1.2. the address of the applicant specified in Part 1 of this authorization; or
    - 4.1.3. the ownership of the applicant specified in Part 1 of this authorization.
  - 4.2. the use of the material, system or building design authorized herein;
    - 4.2.1. 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

- 4.2.2. provides an unsatisfactory level of performance, in situ.
  - 4.3. 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
  - 4.4. any Ontario's 2007 Building Code provision relevant to this Authorization has been amended or remade.
- 5.0 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.

Gerald Genge, P.Eng., BDS, C.Arb.  
Vice Chair, Building Materials Evaluation Commission