July 5, 2012

TO: BUILDING CODE USERS

The enclosed Building Code Compendium replacement pages reflect recent amendments to the Building Code (O. Reg. 350/06) and Minister’s Rulings. In particular, the Building Code Compendium is amended by:

• O. Reg. 159/12 to help address the safety of glass used in balcony guards. The new amendment came into force on July 1, 2012 and makes reference to a new Supplementary Standard SB-13, "Glass in Guards”.

• Minister’s Ruling MR-12-S-19 to add new approved systems to Supplementary Standard SB-5 and which came into effect June 13, 2012.

• Minister’s Ruling MR-12-S-20 to update Supplementary Standard SA-1 for attribution of objectives and functional statements linked to the new requirements of O. Reg. 159/12 and which came into effect July 1, 2012.

• Minister’s Ruling MR-12-S-21 to update Supplementary Standard SB-13 to further clarify applicability of Standard and which came into effect July 1, 2012.

These amendments to the Building Code are identified on the enclosed pages by a unique symbol and a corresponding effective date. These pages should be inserted in your Code now.

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For further information on the amendments, please visit the Building Code website at www.ontario.ca/buildingcode or call 416-585-6666.

Brenda Lewis
Director

encl.
COMMENCEMENT

Ontario Regulation 350/06 comes into force on the 31st day of December, 2006.
Amending Ontario Regulation 423/06 comes into force on the 31st day of December, 2006.
Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-06-S-01 takes effect on the 31st day of December, 2006.

Amending Ontario Regulation 137/07 comes into force on the 2nd day of April, 2007.
Amending Ontario Regulation 205/08 comes into force on the 1st day of April, 2010.
Amending Ontario Regulation 365/09 comes into force on the 24th day of September, 2009.
Amending Ontario Regulation 503/09 comes into force on the 1st day of April, 2010.
Amending Ontario Regulation 503/09 comes into force on the 1st day of January, 2011.
Amending Ontario Regulation 315/10 comes into force on the 1st day of January, 2011.
Amending Ontario Regulation 315/10 comes into force on the 1st day of January, 2016.
Amending Ontario Regulation 315/11 comes into force on the 1st day of July, 2011.
Amending Ontario Regulation 159/12 comes into force on the 1st day of January, 2012.

ERRATA

Issued April 2nd, 2007.
Issued June 2nd, 2009.
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The first Ontario Building Code was issued in 1975. The 1975 and subsequent editions of the Building Code have been issued as follows:

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<tr>
<td>Assembly uses</td>
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<tr>
<td>space with fixed seats</td>
<td>See Clause (1)(a)</td>
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<tr>
<td>space with nonfixed seats</td>
<td>0.75</td>
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<td>space with nonfixed seats and tables</td>
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<tr>
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<tr>
<td>stadia and grandstands</td>
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<tr>
<td>bowling alleys, pool and billiard rooms</td>
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<tr>
<td>classrooms</td>
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<tr>
<td>school shops and vocational rooms</td>
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<tr>
<td>reading or writing rooms or lounges</td>
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<tr>
<td>dining, alcoholic beverage and cafeteria space</td>
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<tr>
<td>laboratories in schools</td>
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<tr>
<td>exhibition halls other than those classified in Group E</td>
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<td>B-1 : detention quarters</td>
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<td>B-2 : treatment and sleeping room areas</td>
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<td>B-3 : sleeping room areas</td>
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<td>Business and personal services uses</td>
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3.1.17.2. Dance Floor

(1) The occupant load of a room in which a dance floor is situated shall be calculated in respect of that portion of the room that is not occupied by the dance floor.
3.1.17.3. Public Pools

(1) The occupant load of a public pool, except a wave action pool, shall be determined by the following formula:

\[
\text{occupant load} = \frac{D}{2.5} + \frac{S}{1.4}
\]

where,

D = the water surface area in square metres of the part of the pool that is deeper than 1,350 mm; and
S = the water surface area in square metres of the part of the pool that is 1,350 mm in depth or less.

(2) The occupant load of a wave action pool shall be determined by the following formula:

\[
\text{occupant load} = \frac{D}{2.5} + \frac{S}{1.1}
\]

where,

D = the water surface area in square metres of the part of the pool where the still water depth is greater than 1,000 mm;
S = the water surface area in square metres of the part of the pool where the still water depth is 1,000 mm or less.

3.1.18. Drainage and Grades

3.1.18.1. Drainage

(1) The building shall be located and the building site graded so that water will not accumulate at or near the building and will not adversely affect any adjacent properties.

3.1.19. Above Ground Electrical Conductors

3.1.19.1. Clearance to Buildings

(1) Where a building is to be constructed in proximity to existing above ground electrical conductors of a voltage not less than 2.5 kV and not more than 46 kV,
(a) the building shall not be located beneath the conductors, and
(b) the horizontal clearance between the building and the maximum conductor swing shall be not less than 3 m.

(2) Where a building is to be constructed in proximity to existing above ground electrical conductors of a voltage more than 46 kV, the clearances between the building and the conductors shall conform to the requirements of CAN/CSA-C22.3 No.1, “Overhead Systems”.

3.1.19.2. Exception

(1) Article 3.1.19.1. does not apply to buildings containing electrical equipment and electrical installations used exclusively in the generation, transformation or transmission of electrical power or energy intended for sale or distribution to the public.

3.1.20. Glass in Guards

3.1.20.1. Glass

(1) Except as provided in Article 3.3.4.7., glass in guards shall conform to Supplementary Standard SB-13.
(3) A single exit is permitted from a dwelling unit provided the exit is an exterior doorway not more than 1 500 mm above adjacent ground level and,
   (a) it is not necessary to travel up or down more than one storey to reach the exit door, or
   (b) the uppermost floor level opens to a balcony not more than 6 m above adjacent ground level.

(4) An egress door from either the uppermost storey or the lowest storey in a dwelling unit, as required in Sentence (2), need not be provided,

   (a) except as required by Sentence (9) if that storey is served by a stairway that,
       (i) leads to a public access to exit,
       (ii) has no direct access to any other storey in the dwelling unit, and
       (iii) is separated from the other storeys in the dwelling unit by a fire separation having a fire-resistance rating of not less than 45 min,
   (b) if the dwelling unit has not more than 2 storeys above the first storey of the building, or
   (c) if it is not necessary to travel either more than 18 m, or more than 1 storey up or down to reach the egress door.

(5) An egress door from either the uppermost storey or the lowest storey in a dwelling unit, as required in Sentence (2), need not be provided,

   (a) on the uppermost storey of a dwelling unit having not more than 2 storeys above the first storey of the building,
   (b) on each storey from which it is not necessary to travel either more than 18 m or more than 1 storey up or down within the dwelling unit to reach an egress door, or
   (c) where that storey is,
       (i) provided with a balcony conforming to Sentence (8),
       (ii) not more than 2 storeys above or below the dwelling unit egress door, and
       (iii) in a building that is not more than 6 storeys in building height.

(6) In a building of residential occupancy not more than 3 storeys in building height, a doorway from a dwelling unit is permitted to open directly into an exit stairway provided the dwelling unit has a second and separate means of egress.

(7) If a dwelling unit has a second and separate means of egress, one means of egress from a dwelling unit is permitted to pass through,

   (a) an interior corridor served by a single exit,
   (b) an exterior balcony served by a single exit stairway, or
   (c) an exterior passageway served by a single exit stairway.

(8) Where a balcony is provided to meet the requirements of Sentence (3) or (5), the balcony shall have,

   (a) a solid floor having a fire-resistance rating not less than that required for a floor assembly between suites, and
   (b) an area providing not less than 1.5 m² per suite occupant, based on occupant load, and a minimum dimension of 1 200 mm.

(9) Each dwelling unit in a building conforming to Subclause 3.2.2.44.(1)(a)(ii) shall be served by,

   (a) a direct exit that is an exterior doorway located not more than 1 500 mm above adjacent ground level, or
   (b) a stairway that,
       (i) leads to an exterior doorway not more than 1 500 mm above adjacent ground level,
       (ii) has no access to another dwelling unit, and
       (iii) is separated from the remainder of the building with a fire separation having a fire-resistance rating not less than 1 h.

3.3.4.5. Automatic Locking Prohibition

(1) Except for hotels, a door opening onto a public corridor that provides access to exit from a suite shall be designed not to lock automatically. (See Appendix A.)

3.3.4.6. Sound Transmission

(1) Sound transmission class ratings of building assemblies shall conform to Section 5.9.
3.3.4.7. Stairs, Handrails and Guards for Dwelling Units

(1) Stairs, handrails and interior guards within a dwelling unit shall conform to the appropriate requirements in Section 9.8.

3.3.4.8. Stud Wall Reinforcement

(1) If wood wall studs or sheet steel wall studs enclose the main bathroom in a dwelling unit, reinforcement shall be installed to permit the future installation of a grab bar on a wall adjacent to,
   (a) a water closet in the location required by Clause 3.8.3.8.(1)(d), and
   (b) a shower or bathtub in the location required by Clause 3.8.3.13.(1)(f).

3.3.5. Industrial Occupancy

3.3.5.1. Scope

(1) This Subsection applies to industrial occupancies.

3.3.5.2. Fire Extinguishing Systems

(1) In addition to other requirements in this Division for the installation of automatic fire extinguishing systems, an appropriate fire extinguishing system shall be installed in every industrial occupancy floor area to provide protection if required by,
   (a) the Fire Code made under the Fire Protection and Prevention Act, 1997, or
   (b) the CCBFC, “National Fire Code of Canada”, in the absence of provisions referred to in Clause (a).

3.3.5.3. Basements

(1) A basement shall not be used for the storage, manufacture or handling of volatile solids, liquids or gases that generate explosive air-vapour mixtures or for processes that involve explosive dusts.

(2) Entrances and exits to a basement and to rooms containing building services shall be separate from the remainder of the building in a building in which,
   (a) the storage, manufacture or handling of volatile materials can generate explosive air-vapour mixtures, or
   (b) processes occur that produce explosive dusts.

(3) Basements and rooms referred to in Sentence (2) shall be separated from the remainder of the building with a vapour-tight separation.

3.3.5.4. Repair and Storage Garages

(1) If access is provided from a storage garage to a stair tower or elevator serving occupancies above the level of the storage garage, the access shall be through a vestibule conforming to Sentence 3.3.5.7.(3).

(2) Treads and landings in interior stairs that extend to the roof of a storage garage shall be designed to be free of accumulations of ice and snow.

(3) A mechanical storage garage not more than 4 storeys in building height, in which no persons other than parking attendants are permitted above the street floor level, need not have a fire separation between the exits and the remainder of the building.

(4) A garage shall be provided with natural or mechanical ventilation in conformance with the requirements of Subsection 6.2.2. to prevent excessive accumulation of carbon monoxide, exhaust fumes or flammable and toxic vapours.

(5) Except as required by Sentence 3.8.2.2.(2), the clear height in a storage garage shall be not less than 2000 mm.
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Transition, Revocation and Commencement

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Part 4

Transition, Revocation and Commencement

Section 4.1. Transition Rule

4.1.1. Transition, December 2006

4.1.1.1. Transition Rule

(1) Subject to Sentences (2) and (3), Ontario Regulation 403/97 (Building Code), as it read on December 30, 2006, is deemed to continue in force with respect to construction,
   (a) for which a permit has been issued before December 31, 2006, or
   (b) for which the working drawings, plans and specifications are substantially completed before December 31, 2006, and for which an application for a permit is made before March 31, 2007 under that Regulation, as it read on December 30, 2006.

(2) Sentence (1) does not apply unless the construction is commenced within six months after the permit is issued.

(3) Division C, except for Section 2.1. of that Division, applies to construction described in Sentence (1) and prevails over all provisions of Ontario Regulation 403/97 (Building Code), as it read on December 30, 2006.

(4) Despite the repeal of section 9 of the Act, the chief building official or a registered code agency continues to have the powers set out in that section, as it read immediately before subsection 2(4) of Schedule 21 to the Good Government Act, 2009 comes into force, with respect to construction to which Sentence (1) applies, and they may exercise those powers subject to the conditions referred to in subsection 9(3) of the Act.

4.1.2. Transition, July 2007

4.1.2.1. Transition Rule

(1) Subject to Sentence (2), this Regulation as it read on June 30, 2007 is deemed to continue in force with respect to construction,
   (a) for which a permit has been issued before July 1, 2007, or
   (b) for which the working drawings, plans and specifications are substantially completed before July 1, 2007 and for which an application for a permit is made before October 1, 2007 under this Code as it read on June 30, 2007.

(2) Sentence (1) does not apply unless the construction is commenced within six months after the permit is issued.
4.1.3. Transition, April 2010

4.1.3.1. Transition Rule

(1) Subject to Sentence (2), this Regulation as it read on March 31, 2010 is deemed to continue in force with respect to construction for which a permit has been applied for or issued before April 1, 2010.

(2) Sentence (1) does not apply unless the construction is commenced within six months after the permit is issued.

4.1.4. Transition, January 2012

4.1.4.1. Transition Rule

(1) Sentence 9.7.1.7.(1) and Subsection 9.25.3. of Division B and Sentence 1.3.5.1.(2) of Division C as they read on December 31, 2011 continue to apply with respect to construction for which a permit has been applied for before January 1, 2012.

4.1.5. Transition, July 2012

4.1.5.1. Transition Rule

(1) Subject to Sentence (2), the amendments to Section 3.1. and Article 3.3.4.7. of Division B, made by Ontario Regulation 159/12, do not apply with respect to construction for which a permit has been issued before July 1, 2012.

(2) Sentence (1) does not apply unless the construction is commenced within six months after the permit is issued.

(3) Despite Subsections 4.1.1. to 4.1.4., the requirements with respect to glass in guards set out in Articles 3.1.20.1. and 3.3.4.7. of Division B, as they read after June 30, 2012, apply with respect to construction for which a permit is issued after that date.

Section 4.2. Revocation

4.2.1. Revocation

4.2.1.1. Revocation

(1) Ontario Regulation 403/97 is revoked.

Section 4.3. Commencement

4.3.1. Commencement

4.3.1.1. Effective Date

(1) This Regulation comes into force on December 31, 2006.
COMMENCEMENT

Supplementary Standards SA-1, SB-1 to SB-11 and SC-1 come into force on the 31st day of December, 2006.
Supplementary Standard SB-12 comes into force on the 1st day of January, 2010.

See “Code Amendment History” page in the Preface of Volume 1 for information concerning amendments to Supplementary Standards issued through Minister’s Rulings.

\( a_1 \) Amendment made to Appendix A or B issued April 2nd, 2007.
\( a_2 \) Amendment made to Appendix A or B issued June 9th, 2009.
\( a_3 \) Amendment made to Appendix A or B issued January 1st, 2010.
\( a_4 \) Amendment made to Appendix A or B issued January 1st, 2011.

ERRATA

\( e_1 \) Issued April 2nd, 2007.
\( e_2 \) Issued June 18th, 2008.
\( e_3 \) Issued June 9th, 2009.
\( e_4 \) Issued January 1st, 2010.
\( e_5 \) Issued July 1st, 2012.
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Objectives and Functional Statements Attributed to the Acceptable Solutions

July 1, 2012 update
COMMENCEMENT

Supplementary Standard SA-1 comes into force on the 31st day of December, 2006.

- $m_1$ Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-08-S-04 takes effect on the 1st day of April, 2010.
- $m_9$ Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-09-S-09 takes effect on the 1st day of January, 2010.
- $m_{10}$ Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-09-S-10 takes effect on the 1st day of April, 2010.
- $m_{11}$ Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-09-S-11 takes effect on the 1st day of January, 2011.
- $m_{16}$ Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-12-S-20 takes effect on the 1st day of July, 2012.

ERRATA

- $e_1$ Issued April 2nd, 2007.
- $e_5$ Issued July 1st, 2012.

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<td>(1) [F02, F03, F04-OP1.2, OP1.3] [F02, F03, F04-OS1.2, OS1.3]</td>
</tr>
<tr>
<td><strong>3.2.2.3.</strong> Exceptions to Structural Fire Protection</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>3.2.2.4.</strong> Buildings with Multiple Major Occupancies</td>
<td>(1)</td>
</tr>
<tr>
<td>Acceptable Solutions</td>
<td>Objectives and Functional Statements</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>
| (2)  
3.2.2.5.          | Applicable Building Height and Area |
| (1)  
3.2.2.6.          | Multiple Major Occupancies          |
| (1)  
[F02, F03, F04-OP1.2, OP1.3]  
[F02, F03, F04-OS1.2, OS1.3]  |
| (2)  
3.2.2.7.          | Superimposed Major Occupancies      |
| (1)  
3.2.2.8.          | Exceptions for Major Occupancies   |
| (1)  
(2)  |
| (1)  
(2)  |
| (1)  
3.2.2.11.         | Exterior Balconies                  |
| (1)  
3.2.2.12.         | Exterior Passageways                |
| (1)  
3.2.2.13.         | Occupancy on Roof                   |
| (1)  
3.2.2.14.         | Roof-Top Enclosures                 |
| (1)  
(2)  |
| (1)  
(2)  |
| (1)  
3.2.2.15.         | Storeys below Ground                |
| (1)  
(2)  
(a) [F02, F04-OP1.2, OP1.3]  
(a) [F02, F04-OS1.2, OS1.3]  
(b), (c) [F03, F04-OP1.2] [F04-OP1.3]  
(b), (c) [F03, F04-OS1.2] [F04-OS1.3]  |
| (3)  
3.2.2.16.         | Heavy Timber Roof Permitted         |
| (1)  
(2)  |
| (1)  
3.2.2.17.         | Sprinklers in Lieu of Roof Rating   |
| (1)  
3.2.2.18.         | Automatic Sprinkler System Required |
| (1)  
3.2.2.19.         | Buildings Containing Impeded Egress Zones |
| (1)  
3.2.2.20.         | Group A, Division 1, Any Height, Any Area, Sprinklered |
| (1)  |
Supplementary Standard SB-5

Approved Sewage Treatment Units

July 1, 2012 update
COMMENCEMENT

Supplementary Standard SB-5 comes into force on the 31st day of December, 2006.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-07-S-02 takes effect on the 9th day of March, 2007.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-08-S-05 takes effect on the 18th day of June, 2008.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-09-S-09 takes effect on the 1st day of January, 2010.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-10-S-12 takes effect on the 1st day of October, 2010.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-11-S-14 takes effect on the 11th day of March, 2011.

Ruling of the Minister of Municipal Affairs and Housing (Minister's Ruling) MR-11-S-15 takes effect on the 22nd day of June, 2011.

Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-11-S-18 takes effect on the 7th day of December, 2011.

Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-12-S-19 takes effect on the 13th day of June, 2012.

ERRATA

Issued June 18th, 2008.

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<table>
<thead>
<tr>
<th>Manufacturer/Distributor</th>
<th>Models</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Southern Ontario Biocycle Ltd.</strong>&lt;br&gt;280 South Blair St.&lt;br&gt;Whitby, Ontario L1N 9N2&lt;br&gt;Phone: 905-665-0537&lt;br&gt;Fax: 905-665-7552&lt;br&gt;Contact: Jake Rempel</td>
<td>Biocycle Aerated Wastewater System&lt;br&gt;Model: 5800-10</td>
<td>See attached system description.</td>
</tr>
<tr>
<td><strong>Seprotech Systems Inc.</strong>&lt;br&gt;(formerly CMS Rotodisk Inc.)&lt;br&gt;2378 Holly Lane&lt;br&gt;Ottawa, Ontario K1V 7P1&lt;br&gt;Phone: 613-523-1641&lt;br&gt;Fax: 613-731-0851&lt;br&gt;Contact: Cliff Johnson</td>
<td>Rotordisk Wastewater Systems&lt;br&gt;Model: S12</td>
<td>See attached system description.</td>
</tr>
<tr>
<td><strong>Bio-Microbics, Inc.</strong>&lt;br&gt;8450 Cole Pkwy.&lt;br&gt;Shawnee, KS USA 66227&lt;br&gt;Phone: 913-422-0707 or 800-753-3278&lt;br&gt;Fax: 913-422-0808&lt;br&gt;Contact: R. Peat</td>
<td>FAST® Wastewater Treatment Systems&lt;br&gt;Models: MicroFAST® 0.5 MicroFAST® 0.9 MicroFAST® 0.625 MicroFAST® 1.5 MicroFAST® 0.75 MicroFAST® 3.0</td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td><strong>Aquarobic Canada</strong>&lt;br&gt;P.O. Box 149&lt;br&gt;Uterson, Ontario&lt;br&gt;POB 1M0&lt;br&gt;Phone: 705-644-1877 or 800-452-0144&lt;br&gt;Fax: 705-788-9204&lt;br&gt;Contact: John Reid</td>
<td>Model MicroMini-28 Model MicroMini-45 Model MiniPlant-70 Model MiniPlant-85</td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td><strong>Nayadic Wastewater Treatment Systems</strong>&lt;br&gt;c/o EZFlow Canada&lt;br&gt;7024 Smith Industrial Drive&lt;br&gt;McGregor, Ontario NOR 1J0&lt;br&gt;Phone: 519-726-6444&lt;br&gt;Fax: 519-726-6211&lt;br&gt;Contact: Janis Bortolotti or John Winkup</td>
<td>Model M6A Model M8A Model M1050A Model M1200A Model M2000A</td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td><strong>Bionest Technologies Inc.</strong>&lt;br&gt;55, 12e Rue, CP 697&lt;br&gt;Grand-Mère, Québec G9T 5L4&lt;br&gt;Phone: 819-538-5662 or 866-538-5662&lt;br&gt;Fax: 819-538-5707&lt;br&gt;Contact: Marlène Bonneville</td>
<td>Bionest Treatment Systems&lt;br&gt;Models: BN-400 BN-1000 BN-500 BN-1500 BN-600 BN-2000 BN-750 BN-2650</td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td><strong>Premier Tech Aqua</strong>&lt;br&gt;1 Ave. Premier&lt;br&gt;Rivière-du-Loup, Québec GSR 6C1&lt;br&gt;Phone: 418-867-8883&lt;br&gt;Fax: 418-862-6642&lt;br&gt;Contact: Marie-Christine Bélanger</td>
<td>Ecoflo Biofilter Treatment Systems&lt;br&gt;Models: ST-500 ST-570P ST-650 STB-500 / STB-500B / STB-500BR STB-570P / STB-570PR STB-650 / STB-650B / STB-650BR</td>
<td>See attached system descriptions.</td>
</tr>
</tbody>
</table>
### Table 2 (Cont’d)

List of Approved Treatment Units Meeting Tertiary Effluent Quality Criteria in Table 8.6.2.2.A. of Division B in the 2006 Building Code

(Approved for Shallow Buried Trenches)

<table>
<thead>
<tr>
<th>Manufacturer/Distributor</th>
<th>Models</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orenco Systems, Inc.</strong></td>
<td><strong>AdvanTex® Wastewater Treatment System</strong></td>
<td></td>
</tr>
<tr>
<td>814 Airway Avenue</td>
<td><strong>Models:</strong> AX20</td>
<td></td>
</tr>
<tr>
<td>Sutherlin, OR 97470</td>
<td><strong>AX20-Multiple Units</strong></td>
<td></td>
</tr>
<tr>
<td>Phone: 1-800-348-9843</td>
<td><strong>AX20-RT</strong></td>
<td></td>
</tr>
<tr>
<td>Contact: Sam Carter</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ecological Tanks, Inc.</strong></td>
<td><strong>Aqua Safe Treatment Systems</strong></td>
<td></td>
</tr>
<tr>
<td>2247 Hwy 151 North</td>
<td><strong>Models:</strong> AS500, AS600, AS750, AS1000, AS1500</td>
<td></td>
</tr>
<tr>
<td>Downsville, Louisiana 71234</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone: (318) 644-0397</td>
<td><strong>Aqua Air Treatment Systems</strong></td>
<td></td>
</tr>
<tr>
<td>Fax: (318) 644-7257</td>
<td><strong>Models:</strong> AA500, AA600, AA750, AA1000, AA1200, AA1500, AA500-35, AA600-50, AA800-65</td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td>Contact: Calvin Locker</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bord na Móna Environmental Products U.S. Inc.</strong></td>
<td><strong>Puraflo® Peat Fiber Biofilter Treatment Systems</strong></td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td>PO Box 77457</td>
<td><strong>Models:</strong> Puraflo® P150N*1B</td>
<td></td>
</tr>
<tr>
<td>Greensboro, NC 27417</td>
<td><strong>Puraflo® P150N*1B Multiple Units</strong></td>
<td></td>
</tr>
<tr>
<td>Phone: (336) 547-9338 or (409) 466-4644</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax: (336) 547-8559</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact: Colin Bishop</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RH2O North America Inc.</strong></td>
<td><strong>WSB® clean Treatment Systems</strong></td>
<td>See attached system descriptions.</td>
</tr>
<tr>
<td>268 Woolwich St. South</td>
<td><strong>Models:</strong> WSB clean 400, WSB clean 1000</td>
<td></td>
</tr>
<tr>
<td>Breslau, Ontario NOB 1M0</td>
<td><strong>WSB clean 500, WSB clean 1250</strong></td>
<td></td>
</tr>
<tr>
<td>Phone: (519) 648-3475</td>
<td><strong>WSB clean 600, WSB clean 1500</strong></td>
<td></td>
</tr>
<tr>
<td>Fax: (519) 648-3585</td>
<td><strong>WSB clean 750</strong></td>
<td></td>
</tr>
<tr>
<td>Contact: Scott Robinson</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Model: MicroFAST® 3.0

The FAST® wastewater treatment system is designed for a daily design sanitary flow up to 10,000 L. The FAST® treatment system consists of a two-chamber tank or two separate tanks with the first chamber/tank being a settling chamber and having a working volume not less than 5,000 L, but not more than 10,000 L. The second chamber/tank will have a working volume of not less than 8,520 litres. A single, two-chamber tank has the first chamber consisting of a service access hatch, baffled inlet and a 150 mm diameter crossover connection to the second chamber. A two-tank arrangement has the first tank with a service access hatch and a 100 mm diameter baffled sanitary tee connection. The second tank consists of a service access, vent and inspection ports and the FAST® insert module as supplied by Bio-Microbics, Inc.

The second chamber/tank contains the FAST® insert module by either the lid suspension or leg support method with at least 330 mm clearance from the tank bottom to the FAST® insert module. The FAST® insert module consists of an airlift arrangement and is equipped with a plastic surge control bio-filter media sized and designed for this model with an outlet clarifier baffle. The airlift is operated with a 1 to 1½ HP, 220 volt single phase external blower. The effluent from the second chamber is discharged by gravity to a single pass free access sand filter or to a dosing chamber.

Where the percolation time of the native soil is between 50 min/cm and 125 min/cm, the treatment unit shall include a single pass free access sand filter consisting of a tank equipped with openings accessible from grade, 100 mm distribution piping, sand filter with an area of 13.6 m² and a depth of 450 mm (sand media with 0.4 mm to 1.5 mm dia. effective size with a uniformity coefficient of 3), 150 mm pea gravel and 100 mm dia. slotted piping discharging the effluent by gravity to an effluent dosing chamber. A GAG Sim/Tech 100 micron, pressure filter model number STF-100 and STF-100AZ, or a 100 micron vortex filter may be used in lieu of the sand filter.

The dosing chamber consists of a pump chamber with 9,000 L volumetric capacity, a minimum of a 0.3 HP submersible pump, level switches, alarms and control panel and a forcemain discharging the effluent.

This approval is only for the treatment unit component of the sewage and the sewage system must comply with the Ontario Building Code, as amended from time to time.

It is the responsibility of Bio-Microbics Inc. and/or its licensed agents to ensure that units meet all other applicable standards. Other Standards may include those of the Canadian Standards Association, Ontario Ministry of Labour, Electric Safety Authority, and others.
Model: MicroFAST® 0.625

The FAST® wastewater treatment system is designed for a daily design sanitary flow up to 2366 L. The FAST® treatment system consists of a two-chamber concrete or fiberglass tank or two separate concrete or fiberglass tanks with the first chamber/tank being a settling chamber and having a working volume not less than 1700 L, but not more than 3549 L. The second chamber/tank will have a working volume of not less than 2040 L. A single, two-chamber tank has the first chamber consisting of a service access hatch, baffled inlet and a 150 mm diameter crossover connection to the second chamber. A two-tank arrangement has the first tank with a service access hatch and a 100 mm diameter baffled sanitary tee connection. The second tank consists of a service access, vent and inspection ports and the FAST® insert module as supplied by Bio-Microbics, Inc.

The second chamber/tank contains the FAST® insert module by either the lid suspension or leg support method with at least 254 mm clearance from the tank bottom to the FAST® insert module. The FAST® insert module consists of an airlift arrangement and is equipped with a plastic surge control bio-filter media sized and designed for this model with an outlet clarifier baffle. The airlift is operated with a 1/3 HP, 115 or 220 volt single phase external blower. The effluent from the second chamber is discharged by gravity to a single pass free access sand filter or to a dosing chamber.

Where the percolation time of the native soil is between 50 min/cm and 125 min/cm, the treatment unit shall include a single pass free access sand filter consisting of a tank equipped with openings accessible from grade, 100 mm distribution piping, sand filter with an area of 4.2 m² and a depth of 450 mm (sand media with 0.4 mm to 1.5 mm dia. effective size with a uniformity coefficient of 3), 150 mm pea gravel and 100 mm dia. slotted piping discharging the effluent by gravity to an effluent dosing chamber. A GAG Sim/Tech 100 micron, pressure filter model number STF-100 and STF-100AZ, or a 100 micron vortex filter may be used in lieu of the sand filter.

The dosing chamber consists of a pump chamber with 4500 L volumetric capacity, a minimum of a 0.3 HP submersible pump, level switches, alarms and control panel and a forcemain discharging the effluent.

This approval is only for the treatment unit component of the sewage and the sewage system must comply with the Ontario Building Code, as amended from time to time.

It is the responsibility of Bio-Microbics Inc. and/or its licensed agents to ensure that units meet all other applicable standards. Other Standards may include those of the Canadian Standards Association, Ontario Ministry of Labour, Electric Safety Authority, and others.
Supplementary Standard SB-13

Glass in Guards

July 1, 2012 update
COMMENCEMENT


Ruling of the Minister of Municipal Affairs and Housing (Minister’s Ruling) MR-12-S-21 takes effect on the 1st day of July 2012.
SB-13 Glass in Guards

Section 1.1. General
1.1.1. Application of Supplementary Standard SB-13

Section 1.2. Terms and Abbreviations
1.2.1. Definitions of Words and Phrases
1.2.2. Symbols and Other Abbreviations

Section 1.3. Referenced Documents and Organizations
1.3.1. Referenced Documents

Section 2.1. Glass
2.1.1. Selection of Glass in a Guard

Section 3.1. Structural Design
3.1.1. Design Requirements
Introduction

The prescriptive requirements for the design and construction of glass in guards in this Supplementary Standard are intended to reduce the probability of:
(a) breakage of glass panels; and
(b) injury to persons in the vicinity of a building as a result of falling broken glass.

Ontario’s Building Code is written in an objective-based format to facilitate and encourage the use of alternative solutions to the prescriptive solutions contained in Division B of the Building Code and the standards referenced by the Code. Therefore, it is expected that the prescriptive-based solutions in this Supplementary Standard will form the benchmark for evaluating alternative solutions, including matrix-based risk assessment solutions. This approach will continue to allow for some flexibility and design choice for architects, engineers, developers, and the construction industry.

This Supplementary Standard is referenced by Sentence 3.1.20.1.(1) of Division B of the Building Code.
Section 1.1. General

1.1.1. Application of Supplementary Standard SB-13

1.1.1.1. Application

(1) Except as provided in Sentence (2), this Supplementary Standard applies to glass used in interior and exterior guards in buildings described in Sentence 1.1.2.2.(1) of Division A of the Building Code.

(2) This Supplementary Standard does not apply to glass used in
(a) guards at locations referred to in Sentence 3.3.4.7.(1) of Division B of the Building Code, or
(b) walls that act as guards.

Section 1.2. Terms and Abbreviations

1.2.1. Definitions of Words and Phrases

1.2.1.1. Non-defined Terms

(1) Definitions of words and phrases used in this Supplementary Standard that are not included in the list of definitions in Articles 1.4.1.2. and 1.4.1.3. of Division A of the Building Code and are not defined in another provision of the Code shall have the meanings that are commonly assigned to them in the context in which they are used, taking into account the specialized use of terms by the various trades and professions to which the terminology applies.

1.2.1.2. Defined Terms

(1) Each of the words and terms in italics in this Supplementary Standard has the same meaning as in Subsection 1(1) of the Building Code Act, 1992 or Clause 1.4.1.2.(1)(b) of Division A of the Building Code.

1.2.2. Symbols and Other Abbreviations

1.2.2.1. Symbols and Other Abbreviations

(1) Where used in this Supplementary Standard, a symbol or abbreviation listed in Column 1 of Table 1.4.2.1. of Division A of the Building Code shall have the meaning listed opposite it in Column 2.

Section 1.3. Referenced Documents and Organizations

1.3.1. Referenced Documents

1.3.1.1. Effective Date

(1) Unless otherwise specified in this Supplementary Standard, the documents referenced in this Supplementary Standard shall include all amendments, revisions and supplements effective to April 30, 2012.
1.3.1.2. Applicable Editions

(1) Where documents are referenced in this Supplementary Standard, they shall be the editions designated in Column 2 of Table 1.3.1.2.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Document Number</th>
<th>Title of Document</th>
<th>Supplementary Standard Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN</td>
<td>DIN EN 14179-1</td>
<td>Heat Soaked Thermally Toughened Soda Lime Silicate Safety Glass</td>
<td>2.1.1.3.(1)</td>
</tr>
<tr>
<td>Column 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Notes to Table 1.3.1.2.:  
(1) DIN refers to the “Deutsches Institut für Normung e. V.”. In English, DIN means the German Institute for Standardization. (See Appendix A.)

Section 2.1. Glass

2.1.1. Selection of Glass in a Guard

2.1.1.1. Safety Glass

(1) Glass other than safety glass shall not be used in a guard.

(2) Glass in a guard shall conform to Table 2.1.1.1.

<table>
<thead>
<tr>
<th>Location of Glass in a Guard</th>
<th>Type of Glass Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass located beyond the edge of a floor or within 50 mm of the edge of a floor</td>
<td>Heat strengthened laminated glass</td>
</tr>
<tr>
<td>Glass located more than 50 mm inward from the edge of a floor</td>
<td>Heat strengthened laminated glass</td>
</tr>
<tr>
<td>Glass located more than 150 mm inward from the edge of a floor</td>
<td>Heat soaked tempered glass</td>
</tr>
<tr>
<td>Glass located more than 150 mm inward from the edge of a floor</td>
<td>Heat soaked tempered glass</td>
</tr>
<tr>
<td>Glass located more than 150 mm inward from the edge of a floor</td>
<td>Tempered glass not more than 6 mm thick</td>
</tr>
<tr>
<td>Column 1</td>
<td>2</td>
</tr>
</tbody>
</table>
2.1.1.2. Laminated Glass

(1) Laminated glass shall be designed, fabricated, and installed so that, in the event of failure of the glass, the glass does not dislodge from the support framing.

2.1.1.3. Heat Soaked Tempered Glass

(1) Heat soaked tempered glass shall conform to DIN EN 14179-1, “Heat Soaked Thermally Toughened Soda Lime Silicate Safety Glass”. (See Appendix A.)

Section 3.1. Structural Design

3.1.1. Design Requirements

3.1.1.1. Structural Design

(1) Glass in a guard shall conform to the requirements of Part 4 of Division B of the Building Code. (See Appendix A.)

(2) Glass in a guard shall not be in direct contact with any metal or similar hard elements forming part of the guard or supporting structure.

(3) Sufficient allowances shall be incorporated for glass in a guard to permit,
(a) deflection and movement under loads, and
(b) expansion and contraction due to temperature changes.
Appendix A

Explanatory Material for SB-13

Appendix A to this Supplementary Standard is included for explanatory purposes only and does not form part of the requirements. The bold-faced reference numbers that introduce each item apply to the requirements in this Supplementary Standard.

A-Table 1.3.1.2. DIN - Deutsches Institut für Normung e. V. (German Institute for Standardization).

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN</td>
<td>DIN Deutsches Institut für Normung e. V.</td>
<td>Phone: +49 30 2601-0</td>
</tr>
<tr>
<td></td>
<td>Am DIN-Platz</td>
<td>Fax: +49 30 2601-1231</td>
</tr>
<tr>
<td></td>
<td>Burggrafenstraße 6</td>
<td>web site: <a href="http://www.din.de">http://www.din.de</a></td>
</tr>
<tr>
<td></td>
<td>10787 Berlin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Germany</td>
<td></td>
</tr>
</tbody>
</table>

A-2.1.1.3.(1) Heat Soaked Tempered Glass.
Heat soaked tempered glass is glass within which a permanent surface compressive stress has been induced in order to give it greatly increased resistance to mechanical and thermal stress and prescribed fragmentation characteristics and which has a known level of residual risk of spontaneous breakage due to the presence of critical nickel sulphide (NiS) inclusions. DIN EN 14179-1 is a European standard that specifies the heat soak process system together with tolerances, flatness, edgework, fragmentation and physical and mechanical characteristics of monolithic flat heat soaked thermally toughened soda lime silicate safety glass for use in buildings.

A-3.1.1.1.(1) Structural Design.
Part 4 of Division B of the Building Code applies to buildings described in Sentence 1.1.2.2.(1) of Division A of the Building Code. When considering the load combinations on exterior balcony guards, Part 4 requires that the live load should be considered in combination with the wind load. Refer to Table 4.1.3.2. of Division B of the Building Code for the relevant load combinations. Case 2, with the full live load coupled with a reduced wind load (via the 0.4 factor) is a plausible scenario. It is also plausible that some fraction of the live load may be present during the design wind event as per the load combination in case 4. Therefore, the live load needs to be considered in combination with the wind load via the load combinations in cases 2 and 4. The wind load, when combined with the live load, should be the outward wind load (i.e.: acting as a suction load on the guard) that is applied in combination with the outward guard load, and, as a separate case, the inward wind load (i.e.: acting as a pressure load on the guard) that is applied in combination with the inward guard load.