

Polymeric subsurface stormwater management structures



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management structures***



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Technical Committee on Stormwater Structures

V. Williams	Halifax Water, Halifax, Nova Scotia	<i>Chair</i>
M. Heralall	Toronto and Region Conservation Authority, Toronto, Ontario	<i>Vice-Chair</i>
A.P.S. Selvadurai	McGill University, Montréal, Québec	<i>Vice-Chair</i>
T. Burger	CSA International, Cleveland, Ohio, USA	<i>Associate</i>
D. Chan	Aplin & Martin Consultants Ltd., Surrey, British Columbia	
P. Cheung	City of Toronto, Toronto, Ontario	
J. DiTullio	Cultec Inc., Brookfield, Connecticut, USA	<i>Associate</i>
S.C. Finlay	Contech Construction Products Inc., Bedford, Nova Scotia	
K. Frame	GeoStorm, Gormley, Ontario	<i>Associate</i>
R. Herlache	Penda Durakon, Lapeer, Michigan, USA	<i>Associate</i>
K.S. Hui	Ontario Ministry of Municipal Affairs and Housing, Toronto, Ontario	<i>Associate</i>
B. Lee	AECON, Mississauga, Ontario	<i>Associate</i>
S. Leroux	PEX Inc., Verdun, Québec	
D.J. Mailhot	StormTech, Wethersfield, Connecticut, USA	<i>Associate</i>
K.A. McCartney	StormTech, Wethersfield, Connecticut, USA	
T. McGrath	Simpson Gumpertz & Heger Inc., Waltham, Massachusetts, USA	
I.D. Moore	Queen's University, Kingston, Ontario	

D. Morin	Alberta Municipal Affairs, Edmonton, Alberta	<i>Associate</i>
A. Navarro	Advanced Drainage Systems, Inc., Mississauga, Ontario	<i>Associate</i>
G. Orloff	OnSpex, Cleveland, Ohio, USA	<i>Associate</i>
A. Potter	IPEX Inc., Mississauga, Ontario	<i>Associate</i>
M.P. Stone	Contech Construction Products Inc., Scarborough, Maine, USA	<i>Associate</i>
M.R. Zwick	Cultec Inc., Brookfield, Connecticut, USA	
A.I. Murra	Canadian Standards Association, Mississauga, Ontario	<i>Project Manager</i>

Preface

This is the first edition of the CSA B184 Series of Standards, *Polymeric subsurface stormwater management structures*.

This Series consists of the following Standards:

- (a) B184.0, *General requirements and methods of testing for polymeric subsurface stormwater management structures*;
- (b) B184.1, *Polyethylene (PE) chambers*; and
- (c) B184.2, *Polypropylene (PP) chambers*.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

CSA acknowledges that the development of these Standards was made possible, in part, by the financial support of Cultec Inc., IPEX Inc., and StormTech LLC.

These Standards were prepared by the Technical Committee on Stormwater Structures, under the jurisdiction of the Strategic Steering Committee on Water Management Products, Materials, and Systems, and have been formally approved by the Technical Committee. These Standards will be submitted to the Standards Council of Canada for approval as National Standards of Canada.

February 2011

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
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CSA Standard

B184.0-11

***General requirements and methods of
testing for polymeric subsurface stormwater
management structures***



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B184.0-11

General requirements and methods of testing for polymeric subsurface stormwater management structures

0 Introduction

0.1

In undeveloped areas, rainwater is intercepted by vegetation and held in natural depressions and can be absorbed directly into the ground on which it falls. When an area is developed, buildings and parking areas cover the natural absorption areas where the rain would normally be infiltrated back into the ground. These impervious structures alter the typical absorption pattern. As a result, when the rain is not allowed to penetrate the ground it begins to accumulate and can cause ponding or flooding or flow to another location. Some consequences of flooding are as follows:

- (a) on roads: collisions, washouts, and traffic delays;
- (b) with buildings: structural and property damage, sewer backups, foundation settlement, and devaluation of property values;
- (c) environmental damage;
- (d) utility service interruptions;
- (e) creation of health hazards;
- (f) clean-up costs and increased insurance costs; and
- (g) personal inconvenience.

0.2

Subsurface stormwater structures are used in the collection, detention, retention, and infiltration of stormwater runoff. Structures can have configurations that include, but are not limited to, beds or trenches of various sizes or shapes designed to fit on most sites and offset the impact of impervious structures that cover natural absorption areas.

1 Scope

1.1

This Standard covers polymeric subsurface stormwater management structures and accessories used in the collection, detention, retention, and infiltration of stormwater runoff. Applications include, but are not limited to, commercial, municipal, residential, agricultural, industrial, recreational, and highway drainage.

Note: In the CSA B184 Series of Standards, polymeric subsurface stormwater management structures are also referred to as stormwater structures.

1.2

This Standard specifies requirements for

- (a) materials and manufacture;
- (b) design and structural integrity;
- (c) durability and longevity; and
- (d) storage capacities and tolerances.

Notes:

- (1) *Annex B* specifies requirements pertaining to the roles and responsibilities of the parties involved in the design and construction of stormwater management systems.
- (2) The following Annexes provide additional guidance:
 - (a) *Annex C* (installation of chambers);
 - (b) *Annex D* (commissioning of stormwater management systems);
 - (c) *Annex E* (operation and maintenance of stormwater management systems); and
 - (d) *Annex F* (performance qualification and in-plant quality control).

1.3

This Standard is intended to be used with CSA B184.1 or CSA B184.2 to form a complete set of requirements for a particular product.

1.4

The current edition of the CSA B184 Series covers chambers only (i.e., arch-shaped stormwater management structures).

Note: Other types of structures (e.g., box-like structures and crates) will be considered for future editions.

1.5

This Standard does not cover

- (a) structures for applications such as
 - (i) septic sewage and sanitary waste systems;
 - (ii) above-ground stormwater management systems;
 - (iii) chemical spill containment;
 - (iv) wastewater containment;
 - (v) water harvesting;
 - (vi) irrigation systems; or
 - (vii) management of liquids other than stormwater; and
- (b) piping systems.

1.6

In CSA standards, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (nonmandatory) to define their application.

1.7

The values given in SI units are the units of record for the purposes of the CSA B184 Series of Standards. The values given in parentheses are for information and comparison only.

2 Reference publications

The CSA B184 Series of Standards refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.