

Concrete Precasters Association of Ontario
Registration Program for
Water & Wastewater Products

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Concrete Precasters Association of Ontario
Product Registration Program
for
Water & Wastewater Products

Foreword

This document pertains to the program of registration for precast concrete products including sewage containment tanks and related vessels for all classes and types of sewage treatment installations in the Province of Ontario. Its purpose is to assure the public and approving agencies that tanks or chambers achieving registration have been subjected to a rigorous testing and evaluation process, all for the benefit and protection of the Public and the Environment. Manufacturers of precast concrete products wishing to be included in the program must comply with the requirements of this document.

Established in 1991 as a non-profit corporation, the Concrete Precasters Association of Ontario was formed to provide a forum for manufacturers of precast concrete products to pool their knowledge and experience in an effort to bring advancement and proactive change to their industry. Many members have been producing precast concrete tanks for more than 50 years and with the input from installers, pumpers, approving and regulating agencies and the public, they have been continually improving the basic design and manufacture of precast concrete tanks.

The content of these pages reflects the commitment and dedication of the membership to ensuring public safety and protecting the environment while providing an economical yet high quality product.

This document has been prepared by the Concrete Precasters Association of Ontario, with input from the Ministry of Municipal Affairs and the Ministry of the Environment.

Comments and queries should be forwarded to:

Concrete Precasters Association of Ontario

5001 Dufferin Avenue

Wallaceburg, Ontario

N8A 4M9

Tel: 866-853-0310

Fax: 866-853-0311

Email: info@cpaontario.com

Additional bound copies of this document may be acquired for \$15.00 per copy by contacting the Concrete Precasters Association of Ontario at the above address.
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This document is also available on the CPA website

Concrete Precasters Association of Ontario
Product Registration Program
for
Water & Wastewater Products
Revised November 2005

Major Program Changes

- 1) The name of the program has been changed from 'Certification Program' to '**Registration Program**' to more accurately reflect its function and purpose.
- 2) CSA-B66-00 was superseded by B66-05 in April 2005. All references in this revised document are to the newer version of the standard.
- 3) All tanks must now be tested. Registration is no longer automatically awarded to short versions of vessels having similar lengths and widths.
- 4) The deadline for receipt of annual compliance reports has been changed to June 30th. Test reports must be dated within the 12-month period prior to the annual compliance deadline.

Changes to the CSA-B66 Standard

- 1) Minimum concrete compressive strength requirements have been increased from 25 to 32 mPa.
- 2) The requirements for a water/cementitious material ratio has been added to the (B66) Standard.
- 3) One of the changes to B66-05 is the requirement that all concrete tanks must now be tested with vacuum. The top loading test is no longer acceptable.

Concrete Precasters Association of Ontario
Product Registration Program

BACKGROUND

In 2002 the Ontario Building Code was amended to recognize The Canadian Standards Association Standard B-66, and require that tank manufacturers conform with all of its requirements except for the clause referring to ‘the certifying agency’ and the inferred requirement that such an agent must be recognized by the Standards Council of Canada. This exception allows manufacturers to pursue, and building officials to consider, alternative means of achieving certification.

Much effort went into the creation of the CPA Registration Program for Water and Wastewater Products. The credibility of this program has resulted in its recognition by the Building and Development Branch of the Ministry of Municipal Affairs and Housing.

The following page “Branch Opinion” clarifies that the Concrete Precasters Association of Ontario Product Registration Program may be accepted as verification of compliance with the requirements of the Ontario Building Code.

PART 1

Concrete Precasters Association of Ontario Product Registration Program for Water & Wastewater Products

Introduction

The Concrete Precasters Association of Ontario Concrete Product Registration Program has been put together to assure the quality of precast concrete products. For the present, the program is limited to precast concrete tankage intended for the treatment or containment of wastewater. The program involves the publication of, and keeping current, a central registry of precast concrete manufacturers including a comprehensive list of each company's certified products. The registry is a public document available to all concerned parties.

The Registration Committee

The Concrete Precasters Association Product Registration Program is overseen and directed by the "Registration Committee":

Doug Robinson
Unit Precast Ltd.
CPA Designate

Jim Aitkin
Aitkins Environmental Service
Ontario Association of Sewage Industry Services

Jim Wilkinson
Wilkinson Heavy Precast Limited
CPA Standards Committee

Ministry Liaison to the Registration Committee

Ahmed Sharaf, P.Eng
Sewage Systems Specialist
Ministry of Municipal Affairs – Ontario

Dr. R. (Mano) Manoharan, P.Eng
Wastewater Treatment Specialist
Ministry of the Environment – Ontario

Powers of the Registration Committee

To be effective, the Association has given the Registration Committee the following Powers:

- 1) Negotiate and liaise with regulators and stake holders
- 2) Amend the registration program at its discretion.
- 3) Direct the administrator in matters of policy.
- 4) The registration committee may request that a manufacturer perform any part of a product test on a registered product at any time. The administrator may be called upon to witness the re-test and prepare a report.
- 5) Add manufacturers and/or their products to the central registry upon confirmation from the administrator that all registration requirements have been satisfied.
- 6) Delete manufacturers and/or their products from the central registry when such action is deemed to be warranted.
- 7) Amend matrix of committee as required.
- 8) Respond to any concerned party submitting written comments or questions.
- 9) The decision of the registration committee would be final in the resolution of a dispute.

Central Registry

A central registry has been established for access by regulators, inspectors, users and designers. Public information regarding individual producers will include:

- 1) Name of the manufacturer.
- 2) Address of the head office.
- 3) Location of all production facilities.
- 4) The model number, volume and/or working capacity and external dimensions of all products listed with this program.

Product Registration

To be registered with this program, individual products must be ‘certified’ by a professional engineer as being in conformance with the requirements of CSA-B66-05. Proof of conformance must be demonstrated to the satisfaction of the **program administrator** before a recommendation to list a product can be made to the **registration committee**. Once a product has been listed within the CPA program, retention of such status shall be achieved through inspection and testing of product selected at random from a manufacturer’s inventory.

The Administrator

An Administrator retained by the Association shall coordinate and manage the Registration Program. This Administrator will report to the Registration Committee and his/her duties include:

- 1) Receive from manufacturers, **product registration applications, engineering reports, annual compliance reports, product drawings, product test reports**, etc. and check them for accuracy, professionalism and conformance with the requirements of the registration program.
- 2) Recommend product for registration to the registration committee, only after being satisfied with the evaluation submitted by the certifying engineer.
- 3) Maintain and keep current the central registry.
- 4) Maintain ongoing dialogue with the committee and keep them informed of program activity.
- 5) Document and maintain comments about product quality or performance and report to the registration committee.

The current administrator of CPA's product registration program is:

Mr. Reg Searles
42 Broadview Avenue
Mississauga, Ontario
L5H 2S9
Tel: 905-274-2804
Fax: 905-278-6690
Email: peggy.searles@sympatico.ca

Major Elements of The Concrete Precasters Association Registration Program:

Product Testing

Product Test Reports

Product Marking

Product Drawings

Product Tag System

Product Testing:

1. All models and sizes of tank intended for use with all classes of on-site sewage treatment systems shall be subjected to the appropriate test(s) described in CSA-B66-05.
2. The tests shall be witnessed by the certifying engineer.
3. Random testing and product inspection shall be performed annually and a **product test report for annual compliance** submitted for each product tested.

Product Test Reports:

There are two versions of product test report found at the back of this document.

The first is entitled **product test report for original registration**. A copy of this form must be completed in full and submitted to the program administrator for each tank that you wish to register.

The engineer shall inspect the set-up of the reinforcing within the mould and witness the casting of the test tank. The engineer shall mark the tank at the time of casting, or otherwise assure himself that the test tank is actually the one observed in production. The tank shall be subjected to the appropriate strength and water tightness tests described in CSA-B66-05. The engineer shall witness the testing and complete a **product test report for original registration** for each tank tested. This form would also be used when applying to change the design of a registered tank. See page 18 for design changes that would affect registration.

The second version is entitled **product test report for annual compliance**. This version is to be used when performing random testing of stock tanks. This random testing is to be done on tanks that have a CPA listing. This version of test report is only valid for the purpose of annual compliance and cannot be used when applying for a products original registration.

Note to the Certifying Engineer

The **Product Test Report** contains only basic information and serves as minimal substantiation of conformance with B66. The certifying engineer is encouraged to generate a comprehensive file on the testing done on individual products and keep this information available should it be called for by regulating agencies.

Product Marking:

All tanks shall be marked in accordance with CSA-B66-05 Section 10, except for 10.2 (j) where ‘certifying engineer’ shall be substituted for ‘certifying agency’. A reproduction of the actual tank marking must be submitted with each test report.

Product Drawings:

The manufacturer may generate the product drawing. The certifying engineer must satisfy him/herself that the drawing accurately depicts the product and displays sufficient detail to prove conformance with CSA-B66-05

Each **Product Drawing** shall:

a) indicate the name of the product, its volume and/or working capacity in litres and the manufacturer’s model number

- *see definitions section of the CPA registration document for ‘working capacity’.*
- *the manufacturer must designate a model number to each tank to be listed.*

b) be dated

- *the date will be used to identify the drawing and must be referenced by the certifying engineer in all matters related to certification of the product.*

c) be fully dimensioned in millimeters and contain all detail and information necessary to prove conformance with all pertinent clauses in CSA-B66-05

- *overall external dimensions.*
- *concrete thickness of the walls, roof, floor, chamber divider, etc. Tapered walls and chamber dividers must be dimensioned to indicate their minimum and maximum thickness.*
- *the drawing must state whether a chamber divider is monolithic or separately cast.*
- *septic tanks must show the liquid depth from the floor to the working capacity liquid level.*
- *the difference between inlet and outlet inverts of a septic tank must be calculable.*
- *internal chambers or compartments must be dimensioned.*
- *air space volume of a septic tank must be calculable.*
- *all dimensions required to prove conformance with CSA-B66-05 must be shown. Some examples would be – access opening dimensions, chamber divider opening sizes and locations, diameter of hatch handles, inlet and outlet device extensions.*

d) state the assembled weight of the tank

- *the assembled weight of the tank in kilograms exclusive of any risers that are not an integral part of the tank.*

e) detail the material and process used to ensure the water tightness of all joints between precast sections

- *describe the material used ie: mastic sealant, rubber gasket, hydraulic grout, etc.*
- *indicate where the tank is normally assembled ie: at the factory or on the job site. If tank assembly is done at the jobsite attach a copy of the assembly instructions as per B66-05 4.1.3.*

f) state the manufacturer's recommended maximum burial depth

- *recommended maximum burial must not be greater than that stated on the test report.*

g) state the concrete mix design

- *design compressive strength at 28 days (in MPa)*
- *percent air entrainment*
- *the water/cementations material ratio*
- *state whether the concrete mix is 'sulphate' resistant or 'non-sulphate' resistant*

h) give the specifics of any reinforcing design

- *indicate the type of reinforcing ie: welded wire mesh and/or deformed bars.*
- *state the spacing between bars.*
- *state the minimum concrete cover over the reinforcing.*

i) give the specifics of all pipe/wall connections

- *any connection point provided by the manufacturer shall have a flexible watertight seal.*

j) give the specifics of all roof openings and their covers

- *please attach separate sketches for the more intricate designs.*
- *tapered roof opening with tapered hatch, special openings that will accept a hatch and/or a riser, any type of frame and cover that is cast in or fastened to the tank.*

Annual Compliance Report

1. The **certifying engineer** shall select product at random from the manufacturer's inventory of certified product and inspect it to confirm its conformance with: 1) the manufacturer's **product drawing** 2) CSA-B66-05, if the product is a septic or sewage holding tank. Product selected at random shall be subjected to the testing set out in the version of CSA-B66 referenced in the current Ontario Building Code. The engineer's comments regarding this inspection and testing shall be part of the **annual compliance report**.
2. Specimens of at least 10% of a producers certified products are to be tested annually. Example: a producer with 18 certified products must test a minimum of two products.
3. Concrete quality test reports in conformance with CSA-B66-05 for the previous year shall be included in the **annual compliance report**.

CPA Product Registration Tag System

- 1) An approved CPA product registration tag must be attached by the producer, in a prominent location, to all tankage listed within the CPA program and sold for use in Ontario as part of a sewage system.
- 2) The CPA product registration tag shall not be displayed in connection with any product that is not listed within the CPA registration program.
- 3) The CPA product registration tag must not be displayed on a flawed or damaged product.

The consequences for contravening any of the above could involve the offending producers disqualification and removal from the CPA product registration program.

- 4) Once a manufacturer has one or more product(s) listed with the CPA program, that manufacturer may purchase CPA product registration tags directly from the CPA.

For information please contact:

Concrete Precasters Association of Ontario
5001 Dufferin Avenue
Wallaceburg, Ontario
N8A 4M9
Tel (866) 853-0310 / Fax (866) 853-0311
Email: info@cpaontario.com

Concrete Precasters Association of Ontario Product Registration Program

GENERAL INFORMATION FOR PRODUCERS

Enclosed you will find information on the Concrete Precasters Product Registration Program. This information is formatted to help the producer understand the program and provide step-by-step instruction on how to acquire and maintain product registration.

Registration Program Costs and Funding

Manufacturers contract with the Engineer of their choice to act as their ‘Certifying Engineer’.

The Certifying Engineer generates the **original registration** and **annual compliance product test reports**.

The manufacturer must submit a **product drawing** that displays all required information (see pages 9 - 10). The product drawing must be stamped by the certifying engineer. The inclusion of the certifying engineers seal is not evidence of his or her endorsement of the design but rather that he or she confirms that the drawing is an accurate compilation of manufacturing details.

Costs involved in the above are borne by the individual producer.

The cost to a producer for registration and product test report evaluations can be found on page 20, remittance calculation.

The Concrete Precasters Association contracts with the Administrator to perform the duties prescribed. This cost is borne by the CPA and recouped through a division of expenses equitably divided between producers using the program.

The administrator logs the amount of time he spends on each registration. Individual manufacturers whose applications and submissions, due to inadequate or missing information, require an inordinate amount of time to process will be invoiced the extra work involved.

A Note to the Certifying Engineer

The program administrator will not recommend a product for registration unless its test report and evaluating materials demonstrate professionalism and an understanding of the programs requirements. The information required by the administrator is of a very basic and rudimentary nature and not to be considered a complete dossier on the testing and evaluation of a product.

The CPA registration program is not the repository for the detailed account of the testing and evaluation that a product must undergo to receive registration. This type of documentation should be kept on file by the producer or his certifying engineer.

A Note to the User of this Document and Other Interested Parties

The merits of all precast concrete products identified or listed in the Concrete Precasters Association of Ontario Concrete Product Registration Program have been put forward and attested to by others. Verification of a products conformance with CSA-B66 or any other standard is the responsibility of the **certifying engineer**. The CPA list of registered products is compiled from third party information and serves as a public posting of products that have been successfully tested and shown to have met standards of quality in their manufacture.

For more information on the CPA Registration Program please visit our website at www.cpaontario.com.

or contact the Program Administrator:

Mr. Reg Searles
Tel: 905-274-2804
Fax: 905-278-6690

DEFINITIONS

Administrator – the individual charged with the supervision and maintenance of the Registration Program.

Burial Depth – the maximum earth cover for which the tank has been designed and warranted by the manufacturer; it refers to the depth of earth over the top of the tank.

Certifying Engineer - a Professional Engineer registered in the Province of Ontario contracted by, and whose relationship is at arms length from, the manufacturer.

Certified Product – a precast concrete tank that has been certified by a professional engineer as having met the design, manufacturing and testing criteria as laid out in the Canadian Standards Association publication B66-05.

Registered Product – a manufactured product that has met the pertinent requirements of the CPA registration program, and that is listed in the central registry.

CSA-B66 – the latest edition of the document “design material and manufacturing requirements for pre-fabricated septic tanks and sewage holding tanks” published by the Canadian Standards Association (currently B66-05).

Joint – any point of contact between separately cast elements.

Product Test Report (for original registration)– the document displaying this title and that is part of this booklet. *Before completing and submitting a Product Test Report please confirm with the program administrator that you are using the most recently amended version.*

Product Test Report (for annual compliance)– the document displaying this title and that is part of this booklet. *Before completing and submitting a Product Test Report please confirm with the program administrator that you are using the most recently amended version.*

Production Facility – any permanent location at which precast concrete products are produced. Manufacturers having more than one production facility must provide an **annual registration report** for each location at which listed products are produced.

Program Annual Compliance Deadline – 30th of June.

Registration – also referred to as ‘listing’ a product.

Working Capacity – the liquid volume of sewage that will remain in the septic chamber(s) when the tank is properly installed and in normal use.

PART 2

A PRODUCER'S GUIDE

to the Concrete Precasters Association of Ontario Registration Program

The Standards Committee of CPA has put this information package together as a guide for precasters seeking to have their products included in the CPA Registration Program.

The CPA Registration Program, while being more technically specific and transparent to the public, is modeled on the previous MOE system of listing products (tanks) that have been certified by a professional engineer.

The Concrete Precasters Association is not a certifying agency and does not certify product. The **Program Administrator**, paid by the CPA but working at arms lengths from the association or any of its members simply receives information from the **certifying engineer**, tabulates it and posts it in the public forum, open to inspection by all interested parties. For the present, the program will be limited to precast concrete septic tanks, sewage holding tanks and effluent dosing chambers.

Please be advised that the registration committee may, at its discretion, change or amend the CPA registration document and/or this producer's guide.

APPLICATION INSTRUCTIONS

HOW TO GET A PRODUCT LISTED

For each individual product that you intend to register:

- 1) **Prepare a “Product Drawing”.**
- 2) **Produce a test tank.** The certifying engineer should mark the test tank at the time of casting so as to be able to positively identify it later. The **product test report for original registration** requires the certifying engineer to confirm that the test tank was the actual specimen that he witnessed in production
- 3) **Test the concrete that was used** in the casting of the test tank and provide documentation showing:
 - compressive strength @ 28 days
 - percent air entrainment
 - water cement ratio
- 4) **Perform test procedures** as outlined in CSA Standard B66-05 9.1, 9.2.2, 9.3, and 9.4
- 5) **Have your certifying engineer:**
 - a) **submit your “Product Drawing”** bearing his engineers stamp attesting that the drawing is representative of the product that was tested.
 - b) **submit a completed copy of the “Product Test Report – For Original Registration”** found at the back of this booklet
 - c) **submit an exact rendition of the marking as per CSA-B66-05 10.2**, that will be displayed on the tank
- 6) **Complete and attach the following documents to your submission**
 - application for registration
 - a remittance calculation
 - release of documents form

Note: A manufacturer with more than one production site must register and certify production at each site separately.

Please send all of the above along with your Product Registration Application and Engineers Report to:

Mr. Reg Searles
42 Broadview Avenue
Mississauga, Ontario
L5H 2S9
Tel: 905-274-2804
Fax: 905-278-6690

At the same time please send:

- a copy of your remittance calculations and
- your cheque for payment in full for your registration fee and all test report evaluation charges to:

Concrete Precasters Association of Ontario
5001 Dufferin Avenue
Wallaceburg, Ontario
N8A 4M9

HOW TO KEEP YOUR CPA PRODUCT REGISTRATION CURRENT

- 1) Your certifying engineer must select product at random from your inventory of certified product, inspect the product to confirm its design, material and manufacturing requirements are in conformance with CSA B66-05, and test the product for strength and water tightness.
- 2) Submit a **product test report – for annual compliance** for each of the products selected and tested. Test reports must be dated within the 12-month period prior to the **annual compliance** deadline.
- 3) Submit a **product drawing** for each of the products selected and tested.
- 4) Submit concrete quality/strength test reports in accordance with CSA-B66-05 6.2.1 for the previous year.
- 5) Submit an exact rendition of the marking as per CSA-B66-05 10.2, that will be displayed on each product.
- 6) Send all of the above to the program administrator.
- 7) Complete the remittance calculation form and send payment to the CPA office.

Note: A) The number of tanks a manufacturer must test for an annual compliance report is dependent on the number of different models that producer has listed with CPA.

The number of different tank models you have listed with the CPA <u>Registration Program</u>	The minimum number of tanks you must test for your annual <u>Compliance Report</u>
1 – 9	One
10 – 19	Two
20 – 29	Three
30 – 39	Four
40 – 49	Five

Note: B) The **annual compliance report** must be received by the administrator each year within the six month period prior to the annual 30 June deadline. Failure to provide an acceptable **annual compliance report** each year by June 30 will result in the producer and his or her products being de-listed.

To get re-listed the producer must, within one year submit:

- an acceptable **annual compliance report**
- standard fees as per the **remittance calculation** form
- an additional \$500 late compliance fee

Producer's de-listed from the CPA Registration Program for more than one year that wish to reapply for CPA Registration must submit an original registration and have all products re-evaluated.

Design Changes Affecting Registration

A products listing under this program is valid only if its design is consistent with the **product drawing** and **product test report** submitted by the manufacturer at the time of registration.

The following are examples of design changes that would void the listing of a product:

- 1) Any change to a partition or chamber divider that would affect the tanks ability to resist internal or external stresses.
- 2) Any increase in the cross-sectional area of an access opening.
- 3) The addition of any opening that penetrates the envelope of the structure that would affect water tightness or the tanks ability to resist internal or external stresses.

APPLICATION FOR REGISTRATION

Concrete Precasters Association of Ontario Product Registration Program for Water and Wastewater Products

Company Name _____

Address of
Production Site _____

Contact Person _____ **Tel#** ____ - ____

Fax# ____ - ____

Email _____

Certifying Engineer _____ **Tel#** ____ - ____

Fax# ____ - ____

Email _____

By registering your company with the CPA Product Registration Program you are agreeing to accept and abide by all of the terms and requirements of the program as they are found in the document entitled "Concrete Precasters Association of Ontario Registration Program for Water and Wastewater Products".

Signature: _____

I have the authority to bind the corporation

Date: _____

Note: Manufacturers that produce listed products at more than one location must register each site separately.

- please attach a signed copy of the **Release of Documents** form when applying for registration.
- please remit your registration fee and all test report evaluation charges at the time of registration.
- make cheques payable to Concrete Precasters Association of Ontario.

- 1) **Submit payment directly to the CPA office.**
- 2) **Submit application to Mr. Reg Searles – Program Administrator.**

CPA Registration Program Costs

	<u>CPA Members</u>	<u>Non-Members</u>
Annual Registration Fee (Per Producing Site)	\$106.00	\$318.00
Processing charge per product evaluation	\$53.00 (\$3.00 gst incl.)	\$106.00 (\$6.00 gst incl.)

REMITTANCE CALCULATION

For Annual Registration

ف \$106.00 for CPA Members
or
 ف \$318.00 for Non-Members

Remittance \$ _____

For Test Report Evaluation

Processing Charges to Evaluate Product Test Reports

The number of products that I am seeking to have evaluated at this time and for which I have attached a **product drawing** and a **test report**..... _____

ف _____ products x \$53.00 per test report for CPA Member
or
 ف _____ products x \$106.00 per test report for Non-Members

Remittance \$ _____

TOTAL REMITTED \$ _____

Payment must be received before test report evaluations will be processed

Make your cheque payable to and mail to: **Concrete Precasters Association of Ontario**
G.S.T. No. R139696967
5001 Dufferin Avenue
Wallaceburg, Ontario N8A 4M9

RELEASE OF DOCUMENTS

The policy of the Concrete Precasters Association of Ontario Product Registration Program will be to direct inquiries about specific product designs to the manufacturer. In the normal course of events details of this nature will be released only with the manufacturer's permission. However, the CPA reserves the right to release documents, drawings or any other material on file should it be necessary to protect the interest of the CPA or the integrity of the Registration Program.

In the circumstance where CPA is compelled to release information and/or documents as aforementioned, the undersigned shall hold CPA, the Program Administrator and the Registration Committee, harmless of whatever propriety interest we may have in any part of our registration documentation.

Company _____

Signed _____
I have the authority to bind the corporation

Date _____