

PRECAST CONCRETE CERTIFICATION PROGRAM



CPCI Precast Concrete Certification Program for Structural, Architectural and Specialty Precast Concrete Products and Production Processes

The purpose of this audit based program is to provide owners and designers with the confidence that certified precast concrete manufacturers are qualified and competent to manufacture quality products they supply to the marketplace.

The CPCI Certification program will certify only those precast manufacturers who demonstrate strict conformance to current standards, and are committed to continually improving the quality of their products and process.



IMPORTANT BENEFITS FOR OWNERS, ARCHITECTS ENGINEERS AND CONTRACTORS

1. Easy identification of plants committed to fulfill the highest level of certification available in North America.
2. Assurance that bidders have demonstrated their ability to manufacture quality products and have an ongoing quality system in place.
3. Certified manufacturers have a confirmed capability to produce superior products and systems.
4. The job will be done right the first time - saving time, money and headaches.
5. Quality products help speed erection and reduce construction time.
6. Deal with established producers who have earned a reputation for superior, reliable workmanship.
7. No additional cost to you - CPCI Certified plants pay all certification fees.
8. Increased assurance to owners and designers that CPCI Certified manufacturers will furnish products ideally suited for each project.
9. CPCI is the Body of Knowledge for precast/prestressed concrete in Canada and brings a vast history of technical and research resources to the program, that no other precast certification body can match.

CPCI CERTIFICATION

The CPCI Certification program has reintroduced common, measurable, nationwide standards for precast certification with no increased cost to our customers. In accordance with the requirements of the National Building Code of Canada, CPCI Certification is aimed to make certification designation a recognized requirement for all project specifications and for all precast operations.

The CPCI certification program is designed to qualify manufacturers who fabricate structural, architectural and specialty precast concrete. Manufacturers must meet the requirements of CSA Standard A23.4, including Annexes A and B, together with PCI MNL-116 and 117 and CPCI certification requirements.

Manufacturers are evaluated on their quality system, documentation, production, management, engineering, personnel, equipment, finished products and assemblies. Independent professional engineers conduct audits twice

annually. Each audit is either one or two days in duration depending on the size of the plant. Certification confirms a manufacturer's capability to produce quality products and systems.

Precast Certification Has an Extensive History (1967 to Present) The Precast Concrete Bureau, established in 1967, was created to answer customer's concerns about precast quality and consistency. Certification was based on a plant process audit system that mirrored the PCI program being developed in the US at the same time.

Canada's first precast standard was issued in 1971 (CSA-A251 - Qualification Code for the Manufacture of Architectural & Structural Precast Concrete).

CSA Standard A23.4 - Precast concrete - Materials and construction was first issued in 1978.

CSA-A251 remained as the standard for precast plant certification until it was withdrawn in 2007.

In 2007, the precast concrete industry introduced an updated audit based process certification program that is based on conformance to CSA A23.4 and related standards. This program has introduced common, measurable nationwide standards for precast certification. CPCI Certification is aimed to make certification designation a recognized requirement for all project specifications and for all precast operations.

WHAT ARE THE PROGRAM REQUIREMENTS?

The manufacturing of precast concrete products must conform to all the requirements of:

- CSA Standard A23.4 (latest edition) Precast Concrete - Materials and Construction
- PCI Quality Control Manual, MNL-116 - Manual for Quality Control for Plants and Production of Structural Precast Concrete Products
- PCI Quality Control Manual, MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products

The more stringent requirements of these specifications become the governing criteria.



WHO IS ELIGIBLE?

Any qualified manufacturer located in Canada or the United States that produces precast concrete structural and architectural precast concrete products and complies with the requirements of the CPCI Certification Program is eligible for participation.

CPCI CERTIFICATION:

- Is based conformance on CSA A23.4 and related standards
- Is aimed to make certification designation a recognized requirement for all project specifications and for all precast operations
- Has reintroduced common, measurable nationwide standards for precast certification
- Is focused on plant, processes and people
- Is focused on product requirements and documentation
- Is available to all qualified manufacturers
- Is committed to continual improvement of products and systems for the entire Canadian precast industry
- Certifies plants to Canadian (A23.4) and US (MNL 116 & 117) requirements, whichever is more stringent
- Requires a comprehensive Quality System Manual for all plants
- Is recognized by the National Building Code of Canada
- Has a mandated number of audits annually
- Evaluates plants using a uniformly applied detailed checklist of compliance for the entire design and manufacturing process
- Has a defined uniform pass/fail criteria with an 80% passing grade required
- Has been designed to be harmonized with PCI Certification (US) requirements
- Is governed by an independent multidisciplinary body that oversees the program

WHAT IS AUDITED?

Quality Audits are the heart of the precast certification program. Audits ensure manufacturers have a quality system in place that is consistently adhered to. Audits ensure conformance to standards, A23.4, MNL116 and MNL117. Audits evaluate and identify areas requiring upgrading or corrective action (continual improvement).

There are a minimum of two regular audits in each full calendar year. The audits determine the conformity of the manufacturer's

quality system and compare the finished products with the specified requirements. The audits determine the effectiveness of the implemented quality system and confirm that the manufacturer meets the regulatory requirements. The audits provide manufacturers with the opportunity to improve their quality system. A detailed audit determines the grade for each division of the audit manual together with a grade for each product group to determine the overall plant performance.

HOW IS PRECAST CERTIFICATION A REQUIREMENT OF CANADIAN BUILDING CODES?

National Building Code of Canada (2010) – Division B:
Clause 4.3.3.1.(1) – Buildings and their structural members made of plain, reinforced and prestressed concrete shall conform to CSA A23.3, Design of Concrete Structures. (See Appendix A)

Appendix A

Clause A-4.3.3.1(1) – Precast Concrete- CSA A23.3, Design of Concrete Structures, requires precast concrete members to conform to CAN/CSA-A23.4, Precast Concrete – Materials and Construction

CSA A23.3-04 (R2010) – Design of Concrete Structures:
CSA-A23.3-04 – Clause 16.2.1 – All precast concrete elements covered by this standard shall be manufactured and erected in accordance with CSA A23.4.

CSA A23.4-09 (R2014) – Precast concrete – Materials and Construction: CSA-A23.4-09 – Clause 4.2 – Precast concrete elements produced and installed in accordance with this Standard shall be produced by certified manufacturers, with certification demonstrating the capability of the manufacturer to fabricate precast concrete elements to the requirements of this Standard.





WHO DOES THE AUDITS?

Adherence to the certification program is monitored by an independent certification organization responsible to conduct quality audits in a fair and objective manner with equal treatment of all manufacturers. The auditors are professional engineers, trained and knowledgeable in the evaluation of precast concrete manufacturing plants and procedures.

WHO RUNS THE PROGRAM?

A multidisciplinary body, the Quality Assurance Council, oversees the certification program with representation by an independent architect, municipal engineers or building officials, ministry officials, and precast manufacturers to oversee the certification program.

HOW TO SPECIFY CPCI CERTIFICATION?

03 45 00 Architectural Precast Concrete and 03 41 00 Structural Precast/Prestressed Concrete shall contain the following Clause Quality Assurance:

- .2 Manufacturer: certified to the Canadian Precast/Prestressed Concrete Institute (CPCI) Certification Program in the appropriate products category(s) at the start of production and for the entire duration of the precast manufacturing process.
- .1 Manufacturer must meet requirements of CSA A23.4, including Appendices A and B, together with PCI MNL-116 and 117 and CPCI certification requirements.

For current information: <https://secure.spex.ca/index.php?page=packages/view/index.php&indid=291>

See www.precastcertification.ca for a listing of certified plants.



Precast Concrete Certification... Your Quality Assurance!

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