



**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS**

**CERTIFIED PRECAST
CONCRETE PRODUCER PROGRAM
ITM No. 813-20**

1.0 SCOPE.

- 1.1** This procedure covers the requirements for a precast concrete plant to become a Department Certified Precast Concrete Producer for precast concrete products. The precast concrete plant shall have an ACPA, NPCA, PCI: Group B1 or B1A; and Group C1 or C1A certification to fabricate precast concrete products.
- 1.2** This procedure may involve hazardous materials, operations, and equipment and may not address all of the safety problems associated with the use of the test method. The user of this ITM is responsible for establishing the appropriate safety and health practices and determining the applicability of regulatory limitations prior to use.

2.0 REFERENCES. Copies of the most recent following AASHTO test methods shall be retained on file.

2.1 AASHTO Standards.

M 86	Concrete Sewer, Storm Drain, and Culvert Pipe
M 170	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
M 199	Precast Reinforced Concrete Manhole Sections
M 207	Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
M 259	Precast Reinforced Concrete box Sections for Culverts, Storm Drains, and Sewers
M 273	Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers with Less Than Two Feet of Cover Subjected to Highway Loadings
T 22	Compressive Strength of Cylindrical Concrete Specimens
T 23	Making and Curing Concrete Test Specimens in the Field
T 24	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
T 119	Slump of Hydraulic Cement Concrete
T 121	Mass per Cubic Meter (Cubic Foot), Yield, and Air Content (Gravimetric) of Concrete
R 60	Sampling Freshly Mix Concrete
T 152	Air Content of Freshly Mixed Concrete by the Pressure Method
T 196	Air Content of Freshly Mixed Concrete by the Volumetric Method
T 280	Concrete Pipe, Manhole Sections, or Tile

2.2 ASTM Standards.

C 39	Compressive Strength of Cylindrical Concrete Specimens
C 31	Making and Curing Concrete Test Specimens in the Field
C 42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 143	Slump of Hydraulic Cement Concrete
C 138	Mass per Cubic Meter (Cubic Foot), Yield, and Air Content (Gravimetric) of Concrete
C 172	Sampling Freshly Mix Concrete
C 231	Air Content of Freshly Mixed Concrete by the Pressure Method
C 173	Air Content of Freshly Mixed Concrete by the Volumetric Method
C 497	Concrete Pipe, Manhole Sections, or Tile

3.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications Section 101 and the following:

3.1 ACI. American Concrete Institute

3.2 ACPA. American Concrete Pipe Association

3.3 Addenda. Any addition or deletion to the QCP

3.4 Approved Lists. A compilation of lists identified in the Department Standard Specifications that require products, sources, equipment or other specified items to be approved and on a list prior to consideration for use on a Department contract

3.5 Audit. An inspection conducted by an independent party selected by the ACPA, NPCA or PCI that verifies compliance with the Department Certified Precast Producer Program

3.6 Certified Precast Concrete Plant. A precast concrete plant certified by the ACPA, NPCA, or the PCI and in accordance with the Program

3.7 NPCA. National Precast Concrete Association

3.8 PCI. Precast/Prestressed Concrete Institute

3.9 Program. ITM 813

3.10 QCP. The Quality Control Plan for the plant that is site-specific and specifies the production, policies and procedures used by the plant

4.0 SIGNIFICANCE AND USE. The Certified Precast Concrete Producer Program is a

program whereby the Producer takes responsibility for the production of quality precast concrete products in accordance with contract requirements, and the Department monitors the Producer's quality control procedures.

5.0 PRODUCER PERSONNEL

5.1 Management Representative. The Management Representative shall be responsible for all aspects of production and quality control required by the Program at a Precast Concrete Plant and shall be the liaison with the Department.

5.2 Quality Control Technician. The Quality Control Technician shall be an ACI Concrete Field Testing Technician, Grade I.

6.0 MATERIALS. Materials incorporated into the precast concrete products shall be in accordance with the following:

6.1 Admixtures. Chemical admixtures shall be included in the Department List of PCC Admixtures and Admixture Systems.

6.2 Aggregates. Aggregates shall be in accordance with ITM 203.

6.3 Cement. Cement shall be included in the Department List of Cement Sources.

6.4 Manhole Steps. Manhole steps shall be included in the Department List of Manhole Steps.

6.5 Pozzolans. Pozzolans shall be included in the Department List of Pozzolans Sources.

6.6 Reinforcing Steel. Reinforcing steel shall be included in the Department List of Certified Uncoated Reinforcing Bar Manufacturers.

6.7 Epoxy Coated Reinforcing Steel. The bar coater and reinforcing steel manufacturer shall be included together in the Department list of Certified Reinforcing Bar Epoxy Coaters.

6.8 Welded Wire Reinforcement. Welded wire reinforcement shall be included in the Department List of Certified Uncoated Reinforcing Bar Manufacturers.

6.9 Repair Materials. Repair materials shall be accordance with the QCP.

7.0 MATERIALS TESTING.

The Producer shall test the aggregate products in accordance with the following test procedures:

Test	Indiana Test Method	AASHTO Test Method	ASTM Test Method
Fine Aggregate			
Acid Insoluble Content	ITM 202		
Freeze/Thaw Soundness in Brine	ITM 209		
Material finer than #200 sieve by washing		T 11	C117
Organic Impurities		T 21	C40
Sieve Analysis of Aggregate		T 27	C136
Specific Gravity of Fine Aggregate		T 84	C128
Coarse Aggregate			
Structurally Weak Material	Visual		
Soundness of Aggregate by Freeze and Thaw		T 103	
Clay Lumps and Friable Particles		T 112	C142
Lightweight Pieces in Aggregate (Chert)		T 113	C132
Material finer than #200 sieve by washing		T 11	C117
Sieve Analysis of Aggregate		T 27	C136
Specific Gravity of Coarse Aggregate		T 85	C127
Los Angeles Abrasion		T 96	C131

The Producer shall test the precast products in accordance with the following test procedures:

Test	AASHTO Test Method	ASTM Test Method
Absorption	T 280	C497
Air Content (Pressure Method)	T 152	C231
Air Content (Volumetric Method)	T 196	C173
Compressive Strength	T 22	C39
Concrete Cores	T 24	C42
Making and Curing Concrete Specimens	T 23	C31
Sampling Concrete	R 60	C172
Slump	T 119	C143
Three-Edge Bearing	T 280	C497
Unit Weight	T 121	C138

- 8.0 PRODUCT MARKING.** Precast concrete products shall be marked with the date of manufacturing, Department identification number, ACPA, NPCA, or PCI certification identification marking, and the applicable Standard Specification required marking.
- 8.1** The ACPA product marking shall be the "QCast" emblem or the words "ACPA Certified Product".
- 8.2** The NPCA marking shall be the words "NPCA Certified Product".
- 8.3** The PCI marking shall be the "PCI certification" emblem or the words "PCI Certified Product".
- 9.0 QUALITY CONTROL PLAN.** Each Producer providing precast concrete products under the Program shall have a written QCP that shall be plant specific and be the basis of control. The QCP shall contain, but not be limited to, the methods of production and quality control policies and procedures used by the plant. The QCP shall be in accordance with ACPA, NPCA, or PCI Plant Certification requirements and the Program
- 10.0 CERTIFICATION.**
- 10.1** Each plant requesting to become a Certified Precast Concrete Producer shall do so in writing to the State Materials Engineer, Division of Materials and Tests. The request shall include a copy of the compliance certificate issued by the ACPA, NPCA, or PCI, a copy of the most recent audit conducted in accordance with the ACPA, NPCA, or PCI certification programs, a copy of the response to deficiencies of the audit, if applicable, a copy of the QCP, and the designated Management Representative for the plant.
- 10.2** Each plant meeting the requirements of the Program will be certified upon verification of the required documents of 10.1.
- 10.3** Each certified Precast Concrete Plant is required to submit to the Division of Materials and Tests a copy of the annual audit and the response to deficiencies of the audit, if applicable, to verify compliance with the ACPA, NPCA, or PCI certification programs.
- 10.4 Maintaining Approval.** New audit documents shall be submitted within 16 months of the last audit date shown on the approved list of Certified Precast Concrete Producers. Audit documents shall be submitted within 60 days of the date an audit is performed.
- 10.5 Removal from Approved List.** A source will be removed from the approved list for the following, but not limited to, reasons:
- 10.5.1** If audit documents are not submitted within 16 months of the last audit date shown on the list of Certified Precast Concrete Producers or within

60 days from the date an audit is performed, the plant will be removed from the approved list for a minimum of 12 months.

10.5.2 If the plant fails to successfully pass an audit or the plant demonstrates poor audit performance as determined by the Department, the plant will be removed from the list for a minimum of 24 months.

10.5.3 After the minimum removal period, the producer can apply to have the plant reinstated into the program. Reinstatement is subject to review and compliance with section 10.1.

10.6 Notification of Changes. In the event of a change in ownership of the Certified Precast Concrete Producer, the certification shall expire on the date of such change. The new ownership may avoid expiration by submitting a statement to the Division of Materials and Tests indicating recognition of the details of the Program and verification that the plant is in accordance with the ACPA, NPCA or PCI certification program requirements.

11.0 DEPARTMENT RESPONSIBILITIES.

11.1 The Department may conduct annual audits on a random basis of each Certified Precast Plant.

11.2 The Department will maintain the list of Certified Precast Concrete Producers.

11.3 The removal of a plant from the Department's list of Certified Precast Concrete Producers will be the responsibility of the Director, Division of Materials and Tests. The Producer shall have the right to appeal the removal from the Department's list of Certified Precast Concrete Producers to the Chief Engineer of Construction.