

Precast Concrete Structures Quality Management Plan

1.1 Introduction

1.1.1 The purpose of the Precast Concrete Structures Quality Management Plan is to establish the procedures for becoming prequalified and maintaining qualification as a producer of precast concrete products. The Management Plan is to assure the Kansas City, MO Public Works Department that precast concrete producers are capable of constructing quality concrete products. Only products produced by a prequalified producer will be accepted and certified for Kansas City Missouri Public Works Department use.

1.2 Prequalification for Precast Concrete Producer

1.2.1 Applicants shall submit to the Materials Engineer a letter requesting that it be designated as a prequalified producer. The letter shall include the following:

1.2.1.1 Proof the fabrication plant producing precast concrete products is currently meeting the requirements of a prequalified producer as outlined in section 1.3 of this document.

1.2.1.2 Name and phone number of the Quality Control (QC) Manager at each production location who may be contacted for scheduling of inspections and general information.

1.2.1.3 Signature of a representative having legal authority to bind the company.

1.2.2 The Precast Concrete Producer agrees to:

1.2.2.1 Meet or exceed all applicable Kansas City Missouri Public Works Department's (KCMO PW) Standards and Specifications, Missouri Department of Transportation (MODOT) specifications, and project specifications, including ASTM, AASHTO, and MCIB specifications.

1.2.2.2 Make available to the Materials Engineer or representative all records required by section 1.3 of this document when requested.

1.2.2.3 Submit to a minimum of one Materials Section plant inspection per year in order to maintain certification as a prequalified producer.

1.2.2.4 Submit mill test reports and all applicable material certifications to the Materials Section and project engineer at time of material shipment, upon request.

1.2.2.5 Submit to unannounced, random plant inspections by Materials Section upon notification.

1.2.3 Provide KCMO PW Testing Laboratory with a fabrication schedule in advance of the production of any product to be used on Kansas City Missouri Public Works specification controlled projects. If advanced notification is not possible due to an emergency situation, notification shall be given immediately after the producer receives the order. Emergency situations should be the exception and not the norm.

KCMO PW Testing Laboratory
4721 Coal Mine Rd
Kansas City, MO 64130
Phone Number: (816) 513-8762
Fax: (816) 513-8822
Email: Contact Laboratory Manager for current email address

1.2.4 Notification of acceptance as a Prequalified Precast Concrete Producer will be made in writing by the Materials Engineer.

1.3 Precast Concrete Producer Inspection Program

1.3.1 Acceptance as a prequalified producer:

1.3.1.1 Description: A prequalified producer will adhere to the guidelines set forth in section 1.3 of this document. Producers will pass a KCMO PW Testing Laboratory inspection prior to acceptance as a prequalified producer. Each prequalified producer will be subject to a minimum of one KCMO PW Testing Laboratory plant inspection per year. Failure in one or more of the requirements listed in this document shall result in an accelerated inspection program. Any additional failures to meet these minimum requirements will result in the disqualification as a prequalified producer for a period of time not to exceed one year. The producer may apply for reinstatement as a prequalified producer no sooner than three months after the initial suspension. At this time the producer will be allowed to start the prequalification process and work towards becoming a prequalified producer of precast concrete products.

1.3.2 Precast Producer Quality Control (QC) Policies and Procedures:

1.3.2.1 Description: Provide adequate training to familiarize all pertinent employees with the company's QC procedures. Have a written company QC policy statement, copies of all applicable standards, specification and approved drawings, and a QC manual which includes, at a minimum, the plant certification technical criteria set forth in this document. Each pertinent employee shall receive a copy of each. Have a designated Quality Inspector (QI) (see section 1.3.3.1.b) present on every work shift. These individuals must be properly trained and thoroughly familiar with all required QC procedures. In addition the QI shall have the authority to fully enforce the procedures.

1.3.3 Precast Producer Requirements:

1.3.3.1 QC Procedures:

a) Develop, periodically review and update as necessary, a company QC policy statement and manual. The QC Manual must be approved by the Materials Engineer prior to acceptance as a prequalified producer. The QC Manual must require the following tests: concrete cylinders for compressive strength, concrete temperature, concrete air content (when applicable), concrete slump (when applicable), and three edge bearing testing (when applicable). The person performing these tests must be ACI Concrete Field Technician - Grade I certified. All of these tests, except the three edge bearing test, must be conducted at a minimum of once every five days, or part thereof, for each mix used. Three edge bearing tests shall be conducted at the following minimum frequencies:

Pipe Size	Class	Minimum Frequency
12" – 15"	Class V and below	1/1000 pieces
18" – 36"	Class IV and below	1/800 pieces
18" – 36"	Class V	1/400 pieces
42" – 60"	Class III and below	1/400 pieces
42" – 60"	Class IV and V	1/200 pieces
66" and larger	All classes	As required by project specs.

Minimum testing frequency shall be as listed above or 1 piece of pipe per year, for each size and class of pipe manufactured during that year for KCMO projects, whichever is more frequent.

b) Designate a QI for every work shift. Precast producer QI must be NPCA Production and Quality School I certified. The QI must be present during final rebar inspection, all concrete placements, and final inspection prior to shipment.

c) Precast producers QC Manager must be ACI Concrete Field Technician - Grade I certified and NPCA Production and Quality School I certified.

d) Producers batch plant or off-site ready-mix batch plants must be pre-qualified under KCMO PW "Quality Management Plan: Ready Mix Concrete"

e) Provide necessary training to designated QI and line personnel. QI shall have ready access to the latest company QC Manual.

f) Conduct meetings with the plant manager or designated representative and QC personnel, a minimum of once every six months to review the

plant's QC procedures, discuss possible changes and implement any procedural changes.

g) Submit to a minimum of one plant inspection, each year, by a KCMO PW Testing Laboratory Inspector.

h) Formally consider and address each deficiency noted in the KCMO PW Testing Laboratory inspection reports, correct confirmed deficiencies prior to the fabrication of subsequent KCMO designated products and conduct related follow-up meetings and all coordination necessary to assure compliance.

1.3.3.2 Required QC Records:

a) Employee's current ACI certification documents and NPCA certification documents and QC training records.

b) Maintain a written "new employee" training and/or orientation policy in the company files.

c) Keep copies of the plant's QC policy statement, QC manual and applicable standards, specifications, and approved drawings on file.

d) QC test results for all units produced for KCMO PW projects.

e) Memorandum signed by the plant manager, which details the plants response and follow-up to each specified deficiency documented during a Materials Section inspection.

1.3.3.3 Calibration and Certification of Test Equipment: All testing equipment or devices used for measuring material quantities shall be in good repair, calibrated and certified as specified in AASHTO, ASTM, and other applicable standards and specifications.

1.3.3.3.1 Producer Requirements:

a) Maintain certification and calibration of air meters, unit weight buckets, thermometers, scales, and compression machines.

b) Batch plant certification records for beams, scales, water meters and moisture probes.

c) Any broken or malfunctioning equipment must be removed from service immediately and replaced with new or repaired/recalibrated equipment.

1.3.3.3.2 Required Records:

a) Notation on inspection checklist documenting which employee performed the tests.

b) Documentation proving the testing laboratory, if used, is KCMO PW approved.

1.3.4 KCMO Testing Laboratory Inspector Guidelines:

1.3.4.1 Prequalification Inspection: The KCMO PW Testing Laboratory inspector will make a plant inspection visit at the request of the producer. At that time the inspector will check the plant in accordance with the requirements of this document. Upon completion of the inspection the Materials Engineer will recommend one of the following:

- a) Certification as a prequalified precast producer.
- b) Disqualification as a prequalified precast producer. The KCMO PW Testing Laboratory inspector will submit a written report to the producer outlining all deficiencies observed during the plant inspection process. The producer is required to address all deficiencies noted in the KCMO PW Testing Laboratory inspector's report before the producer may request another prequalification inspection.

1.3.4.2 Maintenance of Prequalified Status: The KCMO PW Testing Laboratory inspector will make a minimum of one plant inspection visit per year. However, plant operators can expect numerous inspections throughout each construction season. At that time the inspector will check the plant in accordance with the requirements of this document. In addition, the KCMO PW Testing Laboratory inspector will review material certifications as well as sampling and testing records for compliance with applicable standards and specifications. Upon completion of the inspection and records review the KCMO PW Testing Laboratory inspector will recommend one of the following:

- a) Continued certification as a prequalified precast producer.
- b) Placement on the Accelerated Producer Inspection Program. Failure to consistently meet applicable standards and specifications may constitute placement on the Accelerated Plant Inspection Program. Also, any violations found during a routine inspection must be addressed within 30 days of notification. The supplier must submit a letter to the Materials Engineer outlining the corrective action taken for each violation within the aforementioned 30 days. Failure to do so may constitute placement on the Accelerated Plant Inspection Program.
- c) Disqualification as a prequalified producer. Violations documented during the accelerated plant inspection program would constitute disqualification as a prequalified producer.

1.3.4.3 Accelerated inspection Program: The accelerated inspection program will be carried out for one year at a minimum frequency of one inspection visit per month during production for KCMO PW projects. If a producer continues to violate the requirements of this document, the producer will be disqualified as a

prequalified producer. The producer may apply for reinstatement no sooner than three months after the initial suspension. At that time the producer will be allowed to start the prequalification process and work towards becoming a prequalified producer of precast concrete products.

1.3.4.4 KCMO PW Testing Laboratory Inspector Tests and Check List:

- a) Examine the plants QC policy statement and manual.
- b) Verify that the plant has a copy of all applicable standards, specifications, and approved drawings on file.
- c) Review the distribution of QC policy statement and manual and its availability to employees.
- d) Review QC training records.
- e) Confirm that a QI has been assigned to each work shift.
- f) Interview the person(s) responsible for QC policies and procedures.
- g) Examine the equipment certification records.
- h) Review QC test results for compliance.
- i) Inspect testing equipment for damage and ensure all equipment is in good repair.
- j) Verify KCMO PW qualification of testing laboratory, if used.
- k) Verify concrete batch plant is prequalified under KCMO PW “Quality Management Plan: Ready-Mix Concrete”.