



Florida Department of Transportation

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GOVERNOR

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Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

October 12, 2023

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: 105
Proposed Specification: **1050806 Contractor Quality Control General Requirements.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Thomas Frank to update concrete testing personnel qualifications and requirements. The PCI course name was also corrected.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E.
State Specifications Engineer

DS/dh

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

**CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS.
(REV 7-14-23)**

SUBARTICLE 105-8.6.1 is deleted and the following substituted:

105-8.6 Concrete QC Personnel:

105-8.6.1 Concrete Field Technician - Level 1: Ensure technicians performing plastic property testing on concrete for materials acceptance at the project jobsite are qualified possess a CTQP Concrete Field Technicians Level 1 qualification. Plastic property testing will include but not be limited to slump, temperature, air content, water-to-cementitious materials ratio calculation, and making and curing concrete cylinders. Duties ~~will~~ include initial sampling and testing to confirm specification compliance prior to beginning concrete placements, ensuring timely ~~placement commencement~~ of initial curing, and providing for the transport of compressive strength samples to the designated laboratories. ~~Ensure that personnel performing plastic property testing on self-consolidating concrete (SCC) possess an ACI Self-Consolidating Concrete Testing Technician Certification.~~

SUBARTICLE 105-8.6.2 is deleted and the following substituted:

105-8.6.2 Concrete Field Inspector – Level 2 Self-Consolidating Concrete (SCC) Field Technician - Level 1: ~~Ensure field inspectors responsible for the quality of concrete being placed on the following structure types are qualified CTQP Concrete Field Inspectors Level 2:~~

- ~~1. Moveable bridges~~
- ~~2. Bridges over a water opening of 1,000 feet or more~~
- ~~3. Bridges with a span of 190 feet or more~~
- ~~4. Cable supported or cable stayed bridges~~
- ~~5. Post tensioned bridges~~
- ~~6. Steel girder or steel truss bridges~~
- ~~7. Multi-level roadways~~

~~With the exception of concrete traffic railing and bridge approach slab placements, a Level 2 Inspector must be present on the jobsite during all concrete placements. Prior to the placement of concrete, the inspector will inspect the element to be cast to ensure compliance with Contract Documents. A Level 2 Inspector's duties may include ensuring that concrete testing, inspection, and curing in the field are performed in accordance with the Contract Documents. The QC Inspector will inform the Verification Inspector of anticipated concrete placements and LOT sizes.~~ Ensure technicians performing plastic property testing on self-consolidating concrete (SCC) for materials acceptance at the project jobsite possess a CTQP Self-Consolidating Concrete (SCC) Field Technician Level I qualification. Plastic property testing will include but not be limited to slump flow, rapid assessment of static segregation resistance, temperature, air content, water-to-cementitious materials ratio calculation, and making and curing SCC cylinders. Duties include initial sampling and testing to confirm specification compliance prior to beginning concrete placements, ensuring timely commencement of initial curing, and providing for the transport of compressive strength samples to the designated laboratories.

SUBARTICLE 105-8.6.3 is deleted and the following substituted:

105-8.6.32 Concrete Field Inspector - Level 2: Ensure field inspectors responsible for the quality of concrete being placed on the following structure types are qualified CTQP Concrete Field Inspectors Level 2:

1. Moveable bridges
2. Bridges over a water opening of 1,000 feet or more
3. Bridges with a span of 190 feet or more
4. Cable supported or cable stayed bridges
5. Post-tensioned bridges
6. Steel girder or steel truss bridges
7. Multi-level roadways

With the exception of concrete traffic railing and bridge approach slab placements, a Level 2 Inspector must be present on the jobsite during all concrete placements. Prior to the placement of concrete, the inspector will inspect the element to be cast to ensure compliance with Contract Documents. A Level 2 Inspector's duties may include ensuring that concrete testing, inspection, and curing in the field are performed in accordance with the Contract Documents. The QC Inspector will inform the Verification Inspector of anticipated concrete placements and LOT sizes.

SUBARTICLE 105-8.6 is expanded by the following new Subarticle:

105-8.6.43 Concrete Laboratory Technician – Level 1: Ensure technicians testing cylinders and recording concrete strength for material acceptance are qualified CTQP Concrete Laboratory Technicians Level 1. Duties include final curing, compressive strength testing, and the recording/reporting of all test data.

SUBARTICLE 105-8.7.1 is deleted and the following substituted:

105-8.7.1 Plant Manager of QC: Ensure that the plant manager of QC has at least three years of concrete related experience and the following training certifications:

1. CTQP Concrete Laboratory Technician - Level 1 certificate.
2. CTQP Concrete Field Technician - Level 1 certificate.
3. Concrete Batch Plant Operator certification in accordance with 105--

8.7.4.

As alternatives to these certifications, the Department will accept, one of the following:

- a. Prestressed Concrete Institute (PCI) Quality Control Personnel Certification Level III.
- b. Precast Concrete Pipe, Box Culverts, Drainage Structures or Incidental Precast Concrete Plants Level II QC Inspector Certifications.
- c. National Ready Mixed Concrete Association (NRMCA) Certified Concrete Technologist Level 2.

SUBARTICLE 105-8.7.2 is deleted and the following substituted:

105-8.7.2 Concrete Mix Designer: Ensure that the concrete mix designer has the CTQP Concrete Laboratory Technician Level 2 certification. As an alternative, the Department will accept any of the following qualifications:

1. PCI Quality Control Personnel Level III Certification, for concrete mix designs of prestressed concrete products.
2. National Ready Mix Concrete Association (NRMCA) Certified Concrete Technologist Level 3.
3. Any of the Level II QC certifications in accordance with 105-8.9.2.2.

SUBARTICLE 105-8.8.1 is deleted and the following substituted:

105-8.8.1 Plant QC Manager: Ensure the plant QC manager has at least five years of related experience and the following certifications:

1. ACI Concrete Field Testing Technician - Grade I ~~certification~~.
2. PCI Quality Control ~~Personnel Certification~~ Technician/Inspector Level III.
3. CTQP Prestressed Concrete Field Inspector ~~/Technician certificate~~.

SUBARTICLE 105-8.8.2 is deleted and the following substituted:

105-8.8.2 QC Inspector/Technician: Ensure that the QC inspector/technician has the following certifications:

1. ACI Concrete Field Testing Technician - Grade I ~~certification~~.
2. PCI Quality Control Technician/Inspector ~~Personnel Certification~~ Level II.
3. CTQP Prestressed Concrete Field Inspector ~~/Technician certificate~~.

SUBARTICLE 105-8.8.3 is deleted and the following substituted:

105-8.8.3 QC ~~Concrete-Central Mix~~ Testing Technicians: Ensure technicians performing QC program concrete testing at the plant possess the following qualifications, as appropriate. Ensure that QC testing personnel meet the requirement of 105-8.7.3.

1. CTQP Program Concrete Field Technician - Level I, for personnel performing concrete sampling and plastic property testing on concrete.
2. CTQP Program Self-Consolidating Concrete (SCC) Field Technician – Level I, for personnel performing concrete sampling and plastic property testing on SCC.
3. CTQP Concrete Laboratory Technician – Level I, for personnel performing compressive strength testing on concrete.

SUBARTICLE 105-8.9.2.1 is deleted and the following substituted:

105-8.9.2.1 Level I Quality Control Inspectors: Ensure that the Level I Inspectors have the following certifications:

105-8.9.2.1.1 Precast Concrete Drainage Technician Level I: PCI Quality Control Technician/Inspector Level I ~~certification~~. As an alternative, a ~~current~~ Precast Concrete ~~Quality Control Technician~~ Personnel Level I certification in the respective work area will be accepted.

105-8.9.2.1.2 Incidental Precast Concrete Technician Level I: PCI Quality Control Technician/Inspector Level I certification. As an alternative, a ~~current~~ Precast Concrete ~~Quality Control Technician~~ Personnel Level I certification in the respective work area will be accepted.

105-8.9.2.1.3 Precast Concrete Pipe Technician Level I: Precast Concrete Pipe ~~Technician~~ Personnel Level I certification. Personnel performing compressive strength testing must possess an ACI Concrete Strength Testing Technician certification.

SUBARTICLE 105-8.9.2.2 is deleted and the following substituted:

105-8.9.2.2 Level II Quality Control Inspectors: Ensure that Level II Inspectors have the following certifications:

105-8.9.2.2.1 Precast Concrete Drainage Technician Level II:

1. Precast Concrete Drainage Technician Level I, in accordance with 105-8.9.2.1.1.
2. PCI Quality Control Technician/Inspector Level II certification. As an alternative, a ~~current~~ Precast Concrete Quality Control ~~Technician~~ Personnel Level II certification in the respective work area will be accepted.

3. CTQP Concrete Field Technician Level 1, if the plant produces structural concrete in accordance with Section 346.

105-8.9.2.2.2 Incidental Precast Concrete Technician Level II:

1. Incidental Precast Concrete Technician Level I, in accordance with 105-8.9.2.1.2.

2. PCI Quality Control Technician/Inspector Level II ~~certification~~. As an alternative, a ~~current~~ Precast Concrete ~~Quality Control Technician~~ Personnel Level II certification in the respective work area will be accepted.

3. CTQP Concrete Field Technician Level 1.
4. Level II technicians who will perform quality control of incidental prestressed products must have possess a ~~current certificate of completion of Section 450 Specification examination~~ CTQP Prestressed Concrete Field Inspector certification.

105-8.9.2.2.3 Precast Concrete Pipe Technician Level II:

1. Precast Concrete Pipe Technician Level I, in accordance with 105-8.9.2.1.3.
2. Precast Concrete Pipe ~~Technician~~ Personnel Certification Level II.

SUBARTICLE 105-8.9.2.3.2 is deleted and the following substituted:

105-8.9.2.3.2 Incidental Precast Concrete Facilities:

1. Incidental Precast Concrete Technician Level II in accordance with 105-8.9.2.2.2.
2. CTQP Prestressed Concrete Field Inspector, Section 450 Specification Certification if the plant produces incidental prestressed products.

SUBARTICLE 105-8.9.2.4 is deleted and the following substituted:

105-8.9.2.4 Additional Requirements for Quality Control (QC)

~~Personnel of Precast Concrete Drainage Structures and Box Culverts, Precast Concrete Pipe, of and~~ Incidental Precast Concrete Manufacturing Facilities:

105-8.9.2.4.1 Testing Personnel: Ensure testing technicians meet the requirement of 105-8.87.3.

105-8.9.2.4.2 Batch Plant Operator: Ensure the batch plant operator meets the requirement of 105-8.7.43.

SUBARTICLE 105-8.9.2 is expanded by the following new Subarticle:

105-8.9.2.5 Additional Requirements for Quality Control (QC)

Personnel of Precast Concrete Drainage Structures and Box Culverts Manufacturing Facilities:

105-8.9.2.5.1 Testing Personnel: Ensure the testing technicians meet the requirements of 105-8.7.3.

105-8.9.2.5.2 Batch Plant Operator: Ensure the batch plant operator meets the requirement of 105-8.7.4.

CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS.
(REV 7-14-23)

SUBARTICLE 105-8.6.1 is deleted and the following substituted:

105-8.6 Concrete QC Personnel:

105-8.6.1 Concrete Field Technician - Level 1: Ensure technicians performing plastic property testing on concrete for materials acceptance at the project jobsite possess a CTQP Concrete Field Technician Level 1 qualification. Plastic property testing will include but not be limited to slump, temperature, air content, water-to-cementitious materials ratio calculation, and making and curing concrete cylinders. Duties include initial sampling and testing to confirm specification compliance prior to beginning concrete placements, ensuring timely commencement of initial curing, and providing for the transport of compressive strength samples to the designated laboratories.

SUBARTICLE 105-8.6.2 is deleted and the following substituted:

105-8.6.2 Self-Consolidating Concrete (SCC) Field Technician - Level 1: Ensure technicians performing plastic property testing on self-consolidating concrete (SCC) for materials acceptance at the project jobsite possess a CTQP Self-Consolidating Concrete (SCC) Field Technician Level I qualification. Plastic property testing will include but not be limited to slump flow, rapid assessment of static segregation resistance, temperature, air content, water-to-cementitious materials ratio calculation, and making and curing SCC cylinders. Duties include initial sampling and testing to confirm specification compliance prior to beginning concrete placements, ensuring timely commencement of initial curing, and providing for the transport of compressive strength samples to the designated laboratories.

SUBARTICLE 105-8.6.3 is deleted and the following substituted:

105-8.6.3 Concrete Field Inspector - Level 2: Ensure field inspectors responsible for the quality of concrete being placed on the following structure types are qualified CTQP Concrete Field Inspectors Level 2:

1. Moveable bridges
2. Bridges over a water opening of 1,000 feet or more
3. Bridges with a span of 190 feet or more
4. Cable supported or cable stayed bridges
5. Post-tensioned bridges
6. Steel girder or steel truss bridges
7. Multi-level roadways

With the exception of concrete traffic railing and bridge approach slab placements, a Level 2 Inspector must be present on the jobsite during all concrete placements. Prior to the placement of concrete, the inspector will inspect the element to be cast to ensure compliance with Contract Documents. A Level 2 Inspector's duties may include ensuring that concrete testing, inspection, and curing in the field are performed in accordance with the

Contract Documents. The QC Inspector will inform the Verification Inspector of anticipated concrete placements and LOT sizes.

SUBARTICLE 105-8.6 is expanded by the following new Subarticle:

105-8.6.4 Concrete Laboratory Technician – Level 1: Ensure technicians testing cylinders and recording concrete strength for material acceptance are qualified CTQP Concrete Laboratory Technicians Level 1. Duties include final curing, compressive strength testing, and the recording/reporting of all test data.

SUBARTICLE 105-8.7.1 is deleted and the following substituted:

105-8.7.1 Plant Manager of QC: Ensure that the plant manager of QC has at least three years of concrete related experience and the following training certifications.

1. CTQP Concrete Laboratory Technician - Level 1 certificate.
2. CTQP Concrete Field Technician - Level 1 certificate.
3. Concrete Batch Plant Operator certification in accordance with

105-8.7.4.

As alternatives to these certifications, the Department will accept, one of the following:

- a. Prestressed Concrete Institute (PCI) Quality Control Personnel Certification Level III.
- b. Precast Concrete Pipe, Box Culverts, Drainage Structures or Incidental Precast Concrete Plants Level II QC Inspector Certifications.
- c. National Ready Mixed Concrete Association (NRMCA) Certified Concrete Technologist Level 2.

SUBARTICLE 105-8.7.2 is deleted and the following substituted:

105-8.7.2 Concrete Mix Designer: Ensure that the concrete mix designer has the CTQP Concrete Laboratory Technician Level 2 certification. As an alternative, the Department will accept any of the following qualifications.

1. PCI Quality Control Personnel Level III Certification, for concrete mix designs of prestressed concrete products.
2. National Ready Mix Concrete Association (NRMCA) Certified Concrete Technologist Level 3.
3. Any of the Level II QC certifications in accordance with 105-8.9.2.2.

SUBARTICLE 105-8.8.1 is deleted and the following substituted:

105-8.8.1 Plant QC Manager: Ensure the plant QC manager has at least five years of related experience and the following certifications.

1. ACI Concrete Field Testing Technician - Grade I.

2. PCI Quality Control Technician/Inspector Level III.
3. CTQP Prestressed Concrete Field Inspector.

SUBARTICLE 105-8.8.2 is deleted and the following substituted:

105-8.8.2 QC Inspector/Technician: Ensure that the QC inspector/technician has the following certifications.

1. ACI Concrete Field Testing Technician - Grade I.
2. PCI Quality Control Technician/Inspector Level II.
3. CTQP Prestressed Concrete Field Inspector.

SUBARTICLE 105-8.8.3 is deleted and the following substituted:

105-8.8.3 QC Testing Technicians: Ensure technicians performing QC program concrete testing at the plant possess the following qualifications, as appropriate.

1. CTQP Program Concrete Field Technician - Level I, for personnel performing concrete sampling and plastic property testing on concrete.
2. CTQP Program Self-Consolidating Concrete (SCC) Field Technician – Level I, for personnel performing concrete sampling and plastic property testing on SCC.
3. CTQP Concrete Laboratory Technician – Level I, for personnel performing compressive strength testing on concrete.

SUBARTICLE 105-8.9.2.1 is deleted and the following substituted:

105-8.9.2.1 Level I Quality Control Inspectors: Ensure that the Level I Inspectors have the following certifications.

105-8.9.2.1.1 Precast Concrete Drainage Technician Level I: PCI Quality Control Technician/Inspector Level I. As an alternative, a Precast Concrete QC Personnel Level I certification in the respective work area will be accepted.

105-8.9.2.1.2 Incidental Precast Concrete Technician Level I: PCI Quality Control Technician/Inspector Level I certification. As an alternative, a Precast Concrete QC Personnel Level I certification in the respective work area will be accepted.

105-8.9.2.1.3 Precast Concrete Pipe Technician Level I: Precast Concrete Pipe Personnel Level I certification. Personnel performing compressive strength testing must possess an ACI Concrete Strength Testing Technician certification.

SUBARTICLE 105-8.9.2.2 is deleted and the following substituted:

105-8.9.2.2 Level II Quality Control Inspectors: Ensure that Level II Inspectors have the following certifications.

105-8.9.2.2.1 Precast Concrete Drainage Technician Level II:

1. Precast Concrete Drainage Technician Level I, in accordance with 105-8.9.2.1.1.

2. PCI Quality Control Technician/Inspector Level II certification. As an alternative, a Precast Concrete Quality Control Personnel Level II certification in the respective work area will be accepted.

3. CTQP Concrete Field Technician Level 1, if the plant produces structural concrete in accordance with Section 346.

105-8.9.2.2.2 Incidental Precast Concrete Technician Level II:

1. Incidental Precast Concrete Technician Level I, in accordance with 105-8.9.2.1.2.

2. PCI Quality Control Technician/Inspector Level II. As an alternative, a Precast Concrete QC Personnel Level II certification in the respective work area will be accepted.

3. CTQP Concrete Field Technician Level 1.

4. Level II technicians who will perform quality control of incidental prestressed products must possess a CTQP Prestressed Concrete Field Inspector certification.

105-8.9.2.2.3 Precast Concrete Pipe Technician Level II:

1. Precast Concrete Pipe Technician Level I, in accordance with 105-8.9.2.1.3.

2. Precast Concrete Pipe Personnel Certification Level II.

SUBARTICLE 105-8.9.2.3.2 is deleted and the following substituted:

105-8.9.2.3.2 Incidental Precast Concrete Facilities:

1. Incidental Precast Concrete Technician Level II in accordance with 105-8.9.2.2.2.

2. CTQP Prestressed Concrete Field Inspector, if the plant produces incidental prestressed products.

SUBARTICLE 105-8.9.2.4 is deleted and the following substituted:

105-8.9.2.4 Additional Requirements for Quality Control (QC) Personnel of Incidental Precast Concrete Manufacturing Facilities:

105-8.9.2.4.1 Testing Personnel: Ensure testing technicians meet the requirement of 105-8.8.3.

105-8.9.2.4.2 Batch Plant Operator: Ensure the batch plant operator meets the requirement of 105-8.7.4.

SUBARTICLE 105-8.9.2 is expanded by the following new Subarticle:

105-8.9.2.5 Additional Requirements for Quality Control (QC) Personnel of Precast Concrete Drainage Structures and Box Culverts Manufacturing Facilities:

105-8.9.2.5.1 Testing Personnel: Ensure the testing technicians meet the requirements of 105-8.7.3.

105-8.9.2.5.2 Batch Plant Operator: Ensure the batch plant operator meets the requirement of 105-8.7.4.