

**105 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS.
(REV 12-22-09) (FA 1-4-10) (7-10)**

SUBARTICLE 105-3.2 (Pages 138 and 139) is deleted and the following substituted:

105-3.2 Compliance with the Materials Manual.

Producers of Flexible Pipe shall meet the requirements of Section 6.1, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section61.pdf .

Producers of Precast Concrete Pipe shall meet the requirements of Section 6.2, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section62.pdf .

Producers of Precast Concrete Drainage Structures shall meet the requirements of Section 6.3, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section63.pdf .

Producers of Precast/Prestressed Concrete Products shall meet the requirements of Sections 8.1 and 8.3 of the Department's Materials Manual, which may be viewed at the following URLs:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section81.pdf .

<http://www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section83.pdf>.

Producers of Precast Prestressed Concrete Products using Self Consolidating Concrete shall meet the requirements of Section 8.4, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section84.pdf

Producers of Incidental Precast/Prestressed Concrete Products shall meet the requirements of Section 8.2, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section82.pdf .

Producers of Portland Cement Concrete shall meet the requirements of Section 9.2, Volume II of the Department's Materials Manual, which may be viewed at the following URL:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section92.pdf .

Producers of Structural Steel and Miscellaneous Metal Components shall meet the requirements of Sections 11.1 and 11.2 of the Department's Materials Manual, which may be viewed at the following URLs:

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section111.pdf .

www.dot.state.fl.us/specificationsoffice/Implemented/URLinSpecs/Files/section112.pdf .

SUBARTICLE 105-5.2.1 (Page 140) is deleted and the following substituted:

105-5.2.1 Qualifications: Submit the Training Identification Numbers (TINs) or any other information which will be traceable to the certification agency's training location and dates for all technicians performing sampling, testing and inspection for both field and laboratory tests. Provide the names of the CTQP certifications and other pertinent certifications held and the

expiration dates for each certification for each technician. Include employed and subcontracted technicians.

ARTICLE 105-6 (Page 142) is deleted and the following substituted:

105-6 Lab Qualification Program.

Testing Laboratories participating in the Department's Acceptance Program must have current Department qualification when testing materials that are used on Department projects. In addition, they must have one of the following:

- a. Current AASHTO (AAP) accreditation.
- b. Inspected on a regular basis per ASTM D 3740 for earthwork, ASTM D 3666 for asphalt and ASTM C 1077 for concrete for test methods used in the Acceptance Program, with all deficiencies corrected, and under the supervision of a Specialty Engineer.
- c. Current Construction Materials Engineering Council (CMEC) program accreditation or other independent inspection program accreditation acceptable to the Engineer and equivalent to a. or b. above.

After meeting the criteria described above, submit a Laboratory Qualification Application to the Department. The application is available from the Department's website. Obtain the Department's qualification prior to beginning testing. The Department may inspect the laboratory for compliance with the accreditation requirements prior to issuing qualification.

Meet and maintain the qualification requirements at all times. Testing without Department's qualification may result in a rejection of the test results. Continued qualifications are subject to satisfactory results from Department evaluations, including Independent Assurance evaluations. In case of suspension or disqualification, prior to resumption of testing, resolve the issues to the Department's satisfaction and obtain reinstatement of qualification. The following conditions may result in suspension of a laboratory's qualified status:

- a. Failure to timely supply required information.
- b. Loss of accredited status.
- c. Failure to correct deficiencies in a timely manner.
- d. Unsatisfactory performance.
- e. Changing the laboratory's physical location without notification to the accrediting agency and the Engineer.
- f. Delays in reporting the test data in the Department's database.
- g. Incomplete or inaccurate reporting.
- h. Using unqualified technicians performing testing.

Should any qualified laboratory falsify records, the laboratory qualification will be subject to revocation by the Engineer. Falsification of project-related documentation will be subject to further investigation and penalty under state and federal laws.

It is prohibited for any contract laboratory or staff to perform Contractor Quality Control testing and any other Acceptance Program testing on the same contract.

Subarticle 105-8.7 (Pages 144-145) is deleted and the following substituted:

105-8.7 Concrete QC Personnel:

105-8.7.1 Concrete Field Technician - Level I: Ensure technicians performing plastic property testing on concrete for materials acceptance are qualified CTQP Concrete Field Technicians Level I. 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 of initial cure and providing for the transport of compressive strength samples to the designated laboratories.

105-8.7.2 Concrete Field Inspector - Level II: Ensure field inspectors responsible for the quality of concrete being placed on major bridge projects are qualified CTQP Concrete Field Inspectors Level II. A Level II 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 II 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.

105-8.7.3 Concrete Laboratory Technician:

105-8.7.3.1 Concrete Laboratory Technician - Level I: Ensure technicians testing cylinders and recording concrete strength for material acceptance are qualified CTQP Concrete Laboratory Technicians Level I. Duties include final curing, compressive strength testing, and the recording/reporting of all test data.

105-8.7.3.2 Concrete Laboratory Technician – Level II: Ensure that laboratories providing hardened property test results to the Department are under the supervision of a CTQP Concrete Laboratory Technician - Level II. This person is responsible to ensure that the tests are performed in accordance with Standard Test Methods, project specifications and other contract documents.

105-8.7.4 Concrete Production Facility Manager for Quality Control: Ensure each concrete production facility has a Facility Manager for QC with the following qualifications:

1. CTQP Concrete Laboratory Technician Level I, CTQP Concrete Field Technician-Level I, and CTQP Batch Plant Operator. As alternatives to these qualifications, the Department will accept the following qualifications:

- a. Prestressed Concrete Institute (PCI) Level III certification,
- b. National Ready Mixed Concrete Association (NRMCA)

Concrete Technologist Level II, or

c. Precast Concrete Pipe, Box Culverts, Drainage Structures or Incidental Precast Concrete Plants Level II Quality Control Inspector Certifications meeting the requirements of 105-8.11.

2. Three years of QC experience directly related to cement concrete production.

3. Demonstrated proficiency in implementing, supervising, and maintaining surveillance over a QC Program.

4. Experience and certification in performance of required QC tests and statistical evaluation of QC test results.

105-8.7.5 Concrete Mix Designer: Ensure all mix designs are developed by individuals who are qualified under one of the following:

1. CTQP Concrete Lab Technician Level II;
2. National Ready Mix Concrete Association Level 2 Production Control Technician Certification;
3. Precast Concrete Pipe, Box Culverts, Drainage Structures, and Incidental Precast Concrete Level II Quality Control Inspector meeting the requirements of 105-8.11; or
4. PCI Quality Control Level III certification.

SUBARTICLE 105-8.8 (Page 145). The heading is deleted and the following substituted:

105-8.8 Supervisory Personnel – Post-Tensioned and Movable Bridge Structures:

SUBARTICLE 105-8.8.1 (Page 145) is deleted and the following substituted:

105-8.8.1 General: Provide supervisory personnel meeting the qualification requirements only for the post-tensioned and movable bridge types detailed in this Article. Submit qualifications to the Engineer at the pre-construction conference. Do not begin construction until the qualifications of supervisory personnel have been approved by the Engineer.

SUBARTICLE 105-8.8.7 (Page 149) is deleted and the following substituted:

105-8.8.7 Post-Tensioning (PT) and Grouting Personnel Qualifications:

Perform all stressing and grouting operations in the presence of the Engineer and with personnel meeting the qualifications of this article. Coordinate and schedule all PT and grouting activities to facilitate inspection by the Engineer.

105-8.8.7.1 Post-Tensioning: Perform all PT field operations under the direct supervision of a Level II CTQP Qualified PT Technician who must be present at the site of the post-tensioning work during the entire duration of the operation. For the superstructures of bridges having concrete post-tensioned box or I girder construction, provide at least two CTQP qualified PT technicians, Level I or II, on the work crew. The supervisor of the work crew, who must be a Level II CTQP Qualified PT Technician, may also be a work crew member, in which case, the supervisor shall count as one of the two CTQP qualified work crew members. For PT operations other than the superstructures of post-tensioned box or I girder construction, perform all PT operations under the direct supervision of a Level II CTQP Qualified PT Technician who must be present at the site of the PT work during the entire duration of the operation. Work crew members are not required to be CTQP qualified.

105-8.8.7.2 Grouting: Perform all grouting field operations under the direct supervision of a Level II CTQP Qualified Grouting Technician who must be present at the site of the grouting work during the entire duration of the operation. For the superstructures of bridges having concrete post-tensioned box or I girder construction, provide at least two CTQP qualified grouting technicians, Level I or II, on the work crew. The supervisor of the work crew, who must be a Level II CTQP Qualified Grouting Technician, may also be a work crew member, in which case, the supervisor shall count as one of two CTQP qualified work crew members. For grouting operations other than the superstructures of post-tensioned box or I girder construction, perform

all grouting operations under the direct supervision of a Level II CTQP Qualified Grouting Technician who must be present at the site of the grouting work during the entire duration of the operation. Work crew members are not required to be CTQP qualified.

Perform all vacuum grouting operations under the direct supervision of a crew foreman who has been trained and has experience in the use of vacuum grouting equipment and procedures. Submit the crew foreman's training and experience records to the Engineer prior to performing any vacuum grouting operation.

SUBARTICLE 105-8.11 (Pages 150 – 151) is deleted and the following substituted:

105-8.11 Pipe and Precast Concrete Products Manufacturing Facilities Quality Control Personnel:

105-8.11.1 General: Obtain personnel certifications from Department accredited training providers. The list of Department approved courses and their accredited providers [is](#) available on the State Materials Office website.

105-8.11.2 Precast Concrete Drainage Structures, Precast Concrete Box Culvert, Precast Concrete Pipe, Incidental Precast Concrete, and Flexible Pipe Manufacturing Facilities Quality Control Personnel:

105-8.11.2.1 Level I Quality Control Inspectors: Ensure that the Level I Inspectors have completed a minimum of a 12-hour, Department approved, Level I QC Inspector training course in the respective work area. As an exception to this, ensure Flexible Pipe Level I QC Inspectors have completed a minimum of an 8-hour, Department approved, Level I QC Flexible Pipe Inspector training course. For Incidental Precast Concrete, as an alternative to the completion of the 12-hour training course, the Department will accept QC personnel meeting the requirements of 105-8.11.2.4.1 and CTQP Concrete Field Technician level I certification or Precast/Prestressed Concrete Institute (PCI) Quality Control Technician/Inspector Level II certification.

105-8.11.2.2 Level II Quality Control Inspectors: Ensure that Level II Inspectors have completed Department approved Level I QC Inspector training and a minimum of a 5-hour, Department approved, Level II QC Inspector training course in the respective work areas. For Incidental Precast Concrete, as an alternative to the completion of the 5-hour training course, the Department will accept CTQP Concrete Field Technician Level II or PCI Quality Control Level III certifications.

105-8.11.2.3 Plant Quality Control Manager: Ensure that QC Manager has completed Department approved Level II QC Inspector training and has a minimum of 2 years construction related experience in the specific work area.

105-8.11.2.4 Additional Requirements for Quality Control Personnel of Precast Concrete Drainage, Precast Concrete Box Culvert, and Incidental Precast Concrete Manufacturing Facilities:

105-8.11.2.4.1 Testing Personnel: Ensure the personnel performing plastic property tests have ACI Concrete Field Testing Technician-Grade I certification. Ensure the personnel performing laboratory compressive strength testing have ACI Concrete Laboratory Testing Technician-Grade 1 certification or ACI Concrete Strength Testing Technician certification.

SS1050302

Merged in text from SS1050807

and changed dates

105-8.11. 2.4.2: Batch Plant Operator: Ensure the concrete batch plant operator is qualified as a CTQP Concrete Batch Plant Operator. As an alternative to CTQP qualification, the Department will accept the completion of a minimum of a 6-hour, Department approved, Batch Plant Operator training course.