

MATERIALS DIVISION

 Virginia Department of Transportation
MEMORANDUM

GENERAL SUBJECT: Precast Concrete and Concrete Pipe Quality Control/Quality Assurance Programs		NUMBER: MD328 - 10
SPECIFIC SUBJECT: Sections 204.22(c), 204.26(d) and Minimum Acceptance Sampling Requirements		DATE: January 4, 2010
DIRECTED TO: District Administrators	SIGNATURE: Charles A. Babish, PE State Materials Engineer <i>Signature on original copy of memorandum</i>	

This memorandum updates the Precast Concrete and Concrete Pipe Quality Assurance Programs to reflect operational changes resulting from restructuring of the VDOT Materials Division and District Materials Sections.

Replace 204.22(c) Miscellaneous Precast Units, paragraph 3 with:

In order to supply miscellaneous precast concrete products to a VDOT project, the precast concrete producer must be on the Materials Division Approved List No. 34. ~~To qualify for placement on this list,~~ *the precast concrete producer may qualify for placement on this list in either of the following ways:*

1. *The precast concrete producer shall submit a Quality Control (QC) Plan defining its routine business quality control practices. The QC plan is submitted to ~~the responsible Materials Section as coordinated by~~ the Materials Division Central Office ~~Physical Laboratory~~ Quality Assurance Section. After review for completeness and conformance of the producer's QC plan to the Quality Control Plan Checklist as found in Appendix H of this chapter, a plant visit will be made to evaluate the producer's conformance to its QC Plan. If during the inspection deficiencies are noted, this will be documented in a report with a follow-up visit scheduled. If no deficiencies are found, the precast concrete producer is probationarily approved.*
2. *Alternatively, a plant can be probationarily approved if they have a current National Precast Concrete Association, Architectural Precast Association or other plant certification approved by the Quality Assurance Engineer and submit an abbreviated QC plan. The QC plan shall include at a minimum proof of certification, plant contact*

information and address, raw materials used, patching materials used, type of precast units made, testing frequencies and an example shipping ticket. This document is submitted to the Materials Division Central Office Quality Assurance Section.

The miscellaneous precast concrete producer will be added to the Approved List No. 34 with a “p” to denote that the facility is probationarily approved.

Each approved facility must have at least one Precast Concrete technician on staff responsible for ensuring that the Quality Control Plan is being followed. To qualify as a Precast Concrete Technician one has either a) current VDOT Concrete Plant and Field Certifications or b) a National Precast Concrete Association Production and Quality School Level I Technician certification and an American Concrete Institute’s Concrete Field Testing Technician Grade I certification. VDOT specifications and policies over-ride other plant certifications or specifications denoted in the third-party plant certification.

~~When~~ *until one or more successful projects have been completed demonstrating conformance to the QC plan and that a quality product has been consistently supplied, the probationary status will be removed. If problems are encountered during the production and supply within this probationary period, then additional projects may be necessary for the producer to work out QC Plan conformance issues. The miscellaneous precast concrete producer will be added to the Approved List No. 34 with a “p” to denote that the facility is probationarily approved. Once the probationary period has been successfully completed, the “p” will be removed. The Department will continue to monitor the producer’s facility to ensure conformance to the QC plan and project specifications. Annually, the Department will review the updated QC plan submitted by the producer and update the Approved List with the latest review date. The approving/revoking authority is the District Materials Engineer—Central Office Quality Assurance Materials Engineer. for plants located in their respective district or Concrete Programs Engineer in Central Office for plants located outside of the state, and not covered by a district. Appeals may be submitted to the State Materials Engineer for final disposition.*

Replace Section 204.22(c)(1) Testing, paragraph 1 with:

(1) Testing

The producer shall perform the following minimum quality control procedures, and the statement "We certify that these items have been tested and conform to the VDOT Precast Concrete Products Quality Assurance Program" shall be on each shipping document and signed by a responsible company representative. The shipping document should also contain the following information: The plant name, location, telephone number, document number, contractor’s name, and project number. One additional copy of the shipping document shall be provided to the ~~monitoring~~ *Central Office Materials Quality Assurance Section for distribution to the District receiving District the product.*

Replace Section 204.22(c)(2) Test facilities, paragraph one with:

Producer facilities, equipment and testing personnel shall be adequate to conduct the applicable tests outlined in AASHTO T280, and shall require Department approval. Quality Control procedures shall be performed by or under the direction of a *Precast Hydraulic Cement Concrete Plant and Field Technician*. *To qualify as a Precast Concrete Technician one has either a) current VDOT Concrete Plant and Field certifications or b) a National Precast Concrete Association Production and Quality School Level I Technician certification and an American Concrete Institute's Concrete Field Testing Technician Grade I certification.*

Replace Section 204.22(c)(4) Records, paragraph four with:

In addition to date and other required markings, the plant identification and letters “QC” or “NPCA Certified Plant” shall be affixed to each piece of products. Such markings shall be evidence that the required QC procedures have been performed.

Replace Section 204.22(c)(5) Monitoring with:

The producer’s production and testing facilities, processes, records, and product will be monitored ~~weekly, or~~ as deemed necessary depending on project-related work by the Department. A checklist of items to be inspected is provided in Appendix E. (Precast Concrete Plant Monitor Report) The checklist must be completed in its entirety each quarter. ~~The weekly monitoring effort should emphasize inspection of one or two of the items on the list.~~ Shipment of samples to the ~~District or~~ Central Office laboratory for testing shall be in accordance with Sec. 203, using Form TL-10 or Form TL-13, as outlined in Sec. 800.

Replace Section 204.22(6) Annual Quality Testing with:

~~Annual~~ Quality testing will be performed *as deemed necessary* by the Department for establishing quality of raw materials. The tests may be performed on the aggregates, cement, mineral admixtures, and all types and sizes of reinforcing materials.

Replace Section 204.26(d) paragraph 3 with:

In order to supply concrete pipe products to a VDOT project, the concrete pipe producer must be on the Materials Division Approved List No. 26. ~~To qualify for placement on this list, t~~The concrete pipe producer *may qualify for placement on this list in either of the following ways:*

1. *The concrete pipe producer shall submit a Quality Control (QC) Plan defining its routine business quality control practices. The QC plan is submitted to ~~the responsible Materials Section as coordinated by the Materials Division Central Office Physical Laboratory~~ Quality Assurance Section. After review for completeness and conformance of the producer’s QC plan to the Quality Control Plan Checklist as found in Appendix H of this chapter, a plant visit will be made to evaluate the producer’s conformance to its QC Plan. If during the inspection deficiencies are noted, this will be documented in a report with a follow-up visit scheduled. If no deficiencies are found, the precast concrete producer is probationarily approved.*
2. *Alternatively, a plant can be probationarily approved if they have a current American Concrete Pipe Association or other plant certification approved by the QA Engineer and submit an abbreviated QC plan. The QC plan shall include at a minimum proof of certification, plant contact information and address, raw materials used, patching materials used, testing frequencies and an example shipping ticket. This*

document is submitted to the Materials Division Central Office Quality Assurance Section.

The concrete pipe producer will be added to the Approved List No. 26 with a “p” to denote that the facility is probationarily approved.

Each approved facility shall have at least one VDOT certified Precast Concrete technician on staff responsible for ensuring that the Quality Control Plan is being followed. VDOT specifications and policies over-ride other plant certifications or specifications denoted in the third-party plant certification.

~~When~~*until one or more successful projects have been completed demonstrating conformance to the QC plan and that a quality product has been consistently supplied, the probationary status will be removed. If problems are encountered during the production and supply within this probationary period, then additional projects may be necessary for the producer to work out QC Plan conformance issues. The concrete pipe producer will be added to the Approved List No. 26 with a “p” to denote that the facility is probationarily approved. Once the probationary period has been successfully completed, the “p” will be removed. The Department will continue to monitor the producer’s facility to ensure conformance to the QC plan and project specifications. Annually, the Department will review the updated QC plan submitted by the producer and update the Approved List with the latest review date. The approving/revoking authority is the District Materials Engineer—Central Office Quality Assurance Materials Engineer. for plants located in their respective district or Concrete Programs Engineer in Central Office for plants located outside of the state, and not covered by a district. Appeals may be submitted to the State Materials Engineer for final disposition.*

Replace Section 204.26(d)(2) Test Facilities paragraph 1 with:

Producer facilities, equipment and testing personnel shall be adequate to conduct the tests outlined in AASHTO T280, and shall require Department approval. Quality Control Procedures shall be performed under the direction of a VDOT certified *Precast Hydraulic Cement Concrete Plant and Field Technician.*

Replace Section 204.26(d)(4) Records paragraph 1 with:

All testing and inspection documentation shall be maintained at the producing plant for at least ~~two~~*five* years, and shall be made available to Department personnel at their request.

Replace Section 204.26(d)(4) Records paragraph 4 with:

In addition to date and other required markings, the plant identification and letters “Q-C-” or “QCast” shall be affixed to each piece pipe and end section. Such markings shall be evidence that the required Q-C- procedures have been performed.

Replace Section 204.26(d)(5) Monitoring with:

The producers' production and testing facilities, processes, records and product will be monitored ~~weekly~~, by the Department. Checklist of items to be inspected is included as ~~Appendix HA~~. The checklist must be completed in its entirety each quarter. ~~The weekly monitoring effort should be confined to inspection of one or two of the items on the list.~~ One size and class of pipe should be selected for three-edged bearing test per month, the sample should be taken at random, the test witnessed for load test compliance, and noted on the monitoring checklist, size, load, crack width, etc. The load shall not be taken to ultimate strength, if the sample pipe passes D-Crack Load criteria.

Under the table entitled "Minimum Acceptance Sampling Requirements", replace Item 22.(c) Miscellaneous Precast Units.. "RATE OF SAMPLING"

Three (3) cylinders from one casting selected on random basis, or two (2) cores per lot size, to Regional or Central Office Laboratory. On temporary barriers shipped from project, Contractor provides certification that units *have been* inspected and *QC* approved when ~~initially~~ shipped.

CY:

Commissioner
Chief Engineer
Division Administrators
Residency Administrators
District Materials Engineers
District Construction Engineers
District Maintenance Engineers

Area Construction Engineers
Virginia Asphalt Association

Virginia Transportation Research Council
Virginia Ready-Mixed Concrete Association
Precast Concrete Association of Virginia
Virginia Transportation Construction Alliance
Virginia Dept. of Minority Business Enterprise
Federal Highway Administration
American Concrete Paving Association
NE Chapter, Southern Region
Old Dominion Highway Contractors Association