

OKLAHOMA DEPARTMENT OF TRANSPORTATION
APPROVAL PROCEDURE
FOR
REINFORCED CONCRETE PIPE PLANTS
(SPECIFICATION REFERENCE: 726.01)

GENERAL: Reinforced concrete pipe (RCP) and reinforced concrete end sections (RCES) will be accepted from a manufacturing facility with an unexpired listing on the Oklahoma Department of Transportation (ODOT) Approved Products List (APL). The manufacturer must produce reinforced concrete pipe meeting the requirements of AASHTO M170 (M170M), M206 (M206M), and/or M207 (M207M). Product acceptance consists of two components; Product Approval, and Field Acceptance. The Product Approval process is described in this document. Field acceptance will be in accordance with the Field Acceptance Method, indicated by the code adjacent to the product listing on the APL.

If there is any change in Company name, ownership, operation, or major processes, the ODOT Materials Division Engineer must be immediately informed in writing in order to evaluate the continued listing of the manufacturing facility.

All products are subject to sampling and testing at the manufacturing facility and/or at the project site. Products that do not perform adequately or are otherwise found to be non-compliant with requirements will be removed from the project site and replaced at the manufacturer's expense. A manufacturer that provides non-compliant pipe may be removed from the APL at any time. Once removed, the manufacturing facility will not be re-listed or approved for use until such time that adherence to the requirements can be verified and the products produced at that facility have undergone a satisfactory performance evaluation.

PLANT APPROVAL: Request for approval of a reinforced concrete pipe manufacturing facility shall be the responsibility of the manufacturer or supplier (hereinafter called "the Supplier"). The Department may conduct an on-site inspection of the Supplier's facility and laboratory during the approval process or accept the Supplier's documentation of Quality Control (QC) without an on-site visit for acceptance at the sole discretion of the Materials Division Engineer. A request for approval of the Supplier's manufacturing facility by the ODOT Materials Division Engineer shall include but is not limited to the following:

- I. Approval will require a written request, written on the Supplier's Letterhead, from the Supplier to the ODOT Materials Division Engineer, requesting placement of the reinforced concrete pipe manufacturing facility on the Oklahoma Department of Transportation's Approved Products List. The letter of request should include the following:
 - A. Facility mailing address, physical address, telephone number, fax number, and email address.
 - B. Detailed directions to the supplier's facility.
 - C. Names of the Plant Manager, QC Manager and the plants point of contact if not already given.

- II. An on-site inspection of the Supplier's facility may be conducted by ODOT personnel or its representative. The Supplier is required to provide facility access in accordance with ODOT Standard Specification 106.05. The Supplier shall provide the ODOT inspector with the following:
 - A. Documentation of the roles and responsibilities of the QC manager and QC technicians.
 - B. A copy of the facility's QC manual and supporting documents.
 - C. QC laboratory qualifications (include calibration of D-load machine and concrete compression machine) and QC personnel qualifications. Personnel performing concrete cylinder or core strength sampling and testing must hold a current certification by the Oklahoma Highway Construction Materials Technician Certification Board (OHCMTCB) for Concrete or American Concrete Institute (ACI) Concrete Field Testing Technician - Grade I and ACI Concrete Strength Testing Technician.

- D. Documentation of QC sampling and testing, sample storage and retention, and test result reporting.
- E. Source of materials information (including cement, fly ash, admixtures, coarse and fine aggregates, steel reinforcement and joint material).
- F. The Facility should be prepared to D-load a 30" diameter RCP to demonstrate equipment, testing skill and pipe quality.

Upon satisfactory completion of the plant approval process the Oklahoma Department of Transportation will list the Supplier's facility on the APL.

PRODUCT APPROVAL: Request for approval of reinforced concrete pipe and related products shall be the responsibility of a Supplier. The Department will conduct an on-site inspection of the pipe at the manufacturing facility for product approval. ODOT requires the Supplier's request for product approval be received at least a two working days before on-site inspection for facilities within a one hundred fifty mile radius of Oklahoma City, OK. ODOT requires the Supplier's request for product approval be received at least two weeks before on-site inspection for facilities within a radius of from one hundred fifty to three hundred miles of Oklahoma City, OK. ODOT requires the Supplier's request for product approval be received at least two weeks before on-site inspection for facilities over three hundred miles of Oklahoma City, OK and travel expenses are the responsibility of the Contractor purchasing the pipe or pipe end sections. ODOT may require a written request for inspection from the Supplier to the Materials Division Engineer when such an action is deemed necessary by the Materials Division Engineer. Reinforced concrete pipe and related products will be approved for use on projects based on the following:

- I. The Supplier must certify that RCP and RCES were manufactured in accordance with AASHTO M170 (M170M), M198, M206 (M206M), M207 (M207M), M242 (M242M), M262, and/or T280 and all ODOT standards and specifications.
- II. RCP manufactured at the supplier's facility will be tested for acceptance by ODOT personnel or its representative at the supplier's facility prior to shipment to the project site. Testing will be conducted in accordance with the applicable standards, specifications and the following policy:
 - A. RCP with a diameter (or equivalent diameter) less than 42" will be accepted by the AASHTO T280 (External Load Crushing Strength Test by the Three-edge-bearing Test Method) and visual inspection for defects. Each test shall represent a maximum of 7 consecutive days of RCP manufacture not to exceed 100 sections of pipe for each pipe diameter, class, and wall size produced during that time period.
 - 1. RCP of these sizes will be tested to the 0.01" D-load crack and must meet the minimum load requirement of the applicable specification for that pipe diameter and class.
 - 2. A visual inspection will be conducted on all RCP by the inspector for defects in the finished pipe. Pipe found to have defects will be replaced or repaired by the manufacturer at the request of the inspector.
 - 3. At an interval not to exceed 3 months, one test per pipe size and class will be tested to determine the 0.01" D-load crack and ultimate strength load results. The pipe tested shall meet the minimum load requirements of the applicable specification for that pipe diameter and class. The Materials Division Engineer may require that ultimate strength load testing be performed for all tests when warranted by repeated failures of the Supplier's pipe to meet the required 0.01" D-load crack or ultimate load strength.
 - B. RCP with a diameter (or equivalent diameter) of 42" or greater will be accepted by either the AASHTO T280 (External Load Crushing Strength Test by the Three-edge-bearing Test Method) and visual inspection for defects or by the AASHTO T280 (Cylinder Strength Test Method) and visual inspection for defects. Choice of acceptance method is at the discretion of the manufacturer except when ultimate load strength testing is required by the Materials Division Engineer or this policy. Each test shall represent a maximum of 7 consecutive days of RCP

manufacture not to exceed 100 sections of pipe for each pipe diameter, class, and wall size produced during that time period.

1. RCP of these sizes will be tested to the 0.01" D-load crack and must meet the minimum load requirement of the applicable specification for that pipe diameter and class or test cylinders must meet the minimum concrete cylinder strength required in the applicable pipe specification.
2. A visual inspection will be conducted on all RCP by the inspector for defects in the finished pipe. Pipe found to have defects will be replaced or repaired by the manufacturer at the request of the inspector.
3. At an interval not to exceed 12 months, one test per pipe size and class will be tested to determine the 0.01" D-load crack and ultimate strength load results. The pipe tested shall meet the minimum load requirements of the applicable specification for that pipe diameter and class. RCP with a diameter of 72" or larger will not be subject to this requirement. The Materials Division Engineer may require that ultimate strength load testing be performed for all tests when warranted by repeated failures of the Supplier's pipe to meet the required 0.01" D-load crack or ultimate load strength.

III. RCES manufactured at the supplier's facility will be tested for acceptance by ODOT personnel or its representative at the supplier's facility prior to shipment to the project site. Testing will be conducted in accordance with the applicable standards, specifications and the following policy:

- A. RCES will be accepted by either the AASHTO T280 (Cylinder Strength Test Method) and visual inspection for defects or by the AASHTO T280 (Core Strength Test Method) and visual inspection for defects. Choice of acceptance method is at the discretion of the manufacturer except when a particular strength testing method is required by the Materials Division Engineer or this policy. Each test shall represent a maximum of 7 consecutive days of RCES manufacture not to exceed 100 pieces of product regardless of diameter, class, and wall size produced during that time period.
 1. RCES will be accepted by the average of three or more test cylinders meeting the minimum concrete compressive strength required in the applicable product specification for the diameter, class, and wall size of the pipe it is used with or by the average of three or more test cores obtained from different RCES meeting the the minimum concrete compressive strength required in the applicable product specification for the diameter, class, and wall size of the pipe it is used with.
 2. A visual inspection will be conducted on all RCES by the inspector for defects in the finished product. RCES found to have defects will be replaced or repaired by the manufacturer at the request of the inspector.

IV. RCP and/or RCES not manufactured at the supplier's facility but tested and certified by the supplier will be tested for acceptance by ODOT personnel or its representative at the supplier's facility prior to shipment to the project site. Testing will be conducted in accordance with the applicable standards and specifications and the following policy:

- A. RCP (regardless of diameter or equivalent diameter) will be accepted by the AASHTO T280 (External Load Crushing Strength Test by the Three-edge-bearing Test Method) and visual inspection for defects. Each test shall represent a maximum of 7 consecutive days of RCP manufacture not to exceed 100 sections of pipe for each pipe diameter, class, and wall size produced during that time period.
 1. RCP will be tested to the 0.01" D-load crack and ultimate strength loading and must meet the minimum load requirement of the applicable specification for that pipe diameter and class.
 2. A visual inspection will be conducted on all RCP by the inspector for defects in the

finished pipe. Pipe found to have defects will be replaced or repaired by the manufacturer at the request of the inspector.

- B. RCES will be accepted by the AASHTO T280 (Core Strength Test Method) and visual inspection for defects. Each test shall represent a maximum of one RCES regardless of diameter, class, and wall size produced.
1. RCES will be accepted by the test of one core obtained from each RCES which must meet the minimum concrete compressive strength required in the applicable product specification for the diameter, class, and wall size of the pipe it is used with.
 2. A visual inspection will be conducted on all RCES by the inspector for defects in the finished product. RCES found to have defects will be replaced or repaired by the manufacturer at the request of the inspector.

Revision 3/5/2015: Changed all instances of “Materials Engineer” to “Materials & Research Division Engineer”. Also, changed division name in left part of header from “Materials Division” to “Materials & Research Division”.

Revision 6/24/2016: Changed all instances of “Materials & Research Division Engineer” to “Materials Division Engineer”. Changed division name in left part of header from “Materials & Research Division” to “Materials Division”. Changed specification reference number, stated in fifth line of document title, from “726.02” to “726.01”. Changed the punctuation in “manufacturers” to “manufacturer’s”, “suppliers” to “supplier’s”, and Suppliers to Supplier’s in all instances where ownership or possession was intended (as per standard punctuation rules).