

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2015**

SECTION 1908

POLYETHYLENE (PE) PIPE

1908.1 DESCRIPTION

This specification covers polyethylene (PE) pipe for storm sewers and culverts. See **SECTION 1907** for the use of PE pipe in drain tile.

1908.2 REQUIREMENTS

a. Polyethylene Pipe. Provide PE pipe for storm sewers and culverts that complies with one of the following:

(1) AASHTO M 294 (Corrugated Pipe) with the following additions or exceptions:

- Only Type S is acceptable.
- Rotational Molded Pipe will not be accepted.

(2) ASTM F 894 (Ribbed, Profile) with the following additions or exceptions:

- AASHTO LRFD Bridge Design Specifications, SECTION 12, 50 year life requirements.
- Minimum Cell Class per ASTM D 3350 of 334433C or 335434C.
- Minimum section properties as noted in SECTION 12.

(3) ASTM F 714 (Smooth Wall) with the following additions or exceptions:

- A DR of 21 or less will be required.
- AASHTO LRFD Bridge Design Specification, SECTION 12, 50 year life requirements.
- Minimum Cell Class per ASTM D 3350 of 335434C.

(4) Soil tight joints are required (AASHTO LRFD Bridge Construction Specifications, SECTION 26).

- Maximum opening is 1 inch.
- For openings over 1/8-inch, exceed the channel length by four times the length of the opening. Channel length is the length of the path that the soil must infiltrate.
- The D_{85} soil size to size of opening ratio must be 0.3 for medium to fine sand and 0.2 for uniform sands. D_{85} is the sieve size that 85% of the backfill material is smaller than.

b. Joints. To obtain soil tight joints, manufacture the pipe joints to comply with the following:

- Maximum opening is 1 inch.
- For openings over 1/8-inch, exceed the channel length by 4 times the size of the opening. Channel length is the length of the path that the soil must infiltrate.

c. End Sections. Provide culvert end sections that comply with the sizes and dimensions in the Contract Documents. Fabricate end sections from materials that comply with these specifications. Corrugated metal or concrete end sections are also acceptable. Connect dissimilar materials using a soil-tight connection approved by the Engineer.

d. Deflection. Maximum deflection (reduction of the barrel base inside diameter) is 5%. Measurement will be made using a mandrel or other method as approved by the Engineer not less than 30 days following the installation. Deflections in excess of 5% may require the pipe to be removed and reinstalled, or replaced if permanently deformed or damaged in any way.

1908.3 TEST METHODS

Test materials in accordance with the AASHTO and ASTM standards cited in **subsection 1908.2**.

1908.4 PREQUALIFICATION

Follow the instructions on the AASHTO National Transportation Product Evaluation Program's (NTPEP) website to participate in the audit program for plants producing high density polyethylene plastic (HDPE) pipe.

Forward an official copy of the following latest NTPEP audit documents to the Bureau Chief of Construction and Materials for evaluation:

- Final audit report
- The plant's quality control plan
- Split sample test results for AASHTO M 294 pipe
- Certificate of Compliance

Producing plants that have successfully met the requirements of the NTPEP audit program (thus satisfying the requirements of AASHTO M 294) and are listed on the NTPEP website as "compliant" will be prequalified.

In order to maintain prequalified status, send a copy of the annual NTPEP certificate of compliance, the "Size and Type of Materials Produced" sheet from the audit report, and the split sample test results as soon as they are received. Producing plants that are subsequently removed from "compliant" status as shown on the NTPEP website will be removed from prequalified status.

Plants that fail to provide the annual documents described above and repeatedly fail the deflection requirements of **subsection 1908.2d**, may be removed from prequalified status.

1908.5 BASIS OF ACCEPTANCE

Prequalification as specified in **subsection 1908.4**.

Receipt and approval of a Type C certification as specified in **DIVISION 2600**.

Visual inspection for condition and dimensional requirements.

Successful testing with a mandrel as outlined in **subsection 817.3b**.

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