

Section 64 Plastic Pipe

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Section 64 Plastic Pipe

4-6401 General

This section provides guidelines for inspecting plastic pipe and slotted plastic pipe for work specified under Section 64, "Plastic Pipe," of the *Standard Specifications*. Plastic pipe must be either Type C or Type S corrugated polyethylene pipe, or corrugated polyvinyl chloride (PVC) pipe with smooth interior. Slotted plastic pipe must be polyethylene.

4-6402 Before Work Begins

4-6402A Plastic Pipe

Before work begins, review the plans and specifications and inspect the sites of all planned installations. Reviewing these items sufficiently in advance helps prevent scheduling conflicts and errors in ordering materials.

During the preliminary review and inspections, the resident engineers and assistant resident engineers should also do the following:

- Identify any unsolved drainage problems.
- Make any plan changes necessary to fit field conditions.
- Determine the locations and lengths of the pipes.
- Once the previous step is accomplished, if necessary, give the contractor a revised pipe list. The list should include any pipes added or altered by a change order.
- Verify that Form CEM-3101, "Notice of Materials to Be Used," includes plastic pipe and plastic slotted pipe. Refer to Section 6-202, "Responsibilities for Acceptance of Manufactured or Fabricated Materials and Products," of this manual for additional information.
- Obtain a certificate of compliance for plastic pipe, including the average pipe stiffness, resin material cell classification, and date of manufacture. For corrugated polyethylene pipe, the contractor must also provide a manufacturer's copy of plant audits and test results from the National Transportation Product Evaluation Program for the current cycle of testing for each pipe diameter furnished.

4-6402B Slotted Plastic Pipe

Verify that the manufacturer and model of the contractor-selected slotted plastic pipe is one of the allowable alternatives listed in the *Standard Specifications*. If the contractor proposes an "or equal" alternative, consult with Division of Design Drainage Unit to evaluate if the proposed slotted plastic pipe system is acceptable.

4-6403 During the Course of Work

During the course of work, do the following:

4-6403A Plastic Pipe

- Ensure the contractor constructs embankments as specified before any structure excavation.
- Before pipe installation, ensure that excavations and any required bedding are as shown in the *Standard Plans* and meet the specifications.
- Verify the final acceptability of the pipes following the guidelines in Section 6-2, “Acceptance of Manufactured or Fabricated Materials and Products,” of this manual. The following problems with pipe are unacceptable:
 1. Pipe walls with cracks, holes, blisters, voids, foreign inclusions, or other defects affecting the pipe wall integrity or that are visible to the naked eye.
 2. Pipes or fittings with abrasions or scratches deeper than 10 percent of the wall thickness.
 3. Gaskets that are cracked or split.
 4. Rough surfaces, ridges, fractures, cracks, or imperfections at joint surfaces where gaskets will be.
- During the onsite storage of PVC pipes, verify that pipes are protected from long-term exposure to sunlight, or brittleness may result. Ensure that pipes are protected from damage throughout all operations.
- Verify that pipes of the specified size, type, and class are placed in the proper locations.
- Verify pipe joints are installed as specified.
- Require methods of handling and storage that will not damage the pipes.
- When atmospheric temperature is 40 degrees Fahrenheit or lower, ensure PVC installation methods using mechanical assistance do not damage pipes.
- Ensure that backfill work complies with the details on the contract plans, *Standard Plans*, or both. Refer to Section 4-19, “Earthwork,” of this manual for additional instructions on excavation and backfill.
- Pay particular attention to pipe joint requirements including any specified testing for watertightness.
- Before construction loads are allowed over culverts, require that culverts meet the minimum fill conditions as shown on *Standard Plan Sheet D88*.

Continue to periodically inspect pipes as work progresses. A critical time to inspect is after the completion of the grading and before the start of base and surfacing. During the final phases of the project, make another inspection, primarily to find any pipes that need cleaning.

4-6403B Slotted Plastic Pipe

- Ensure that the contractor covers grate slots during placement of concrete backfill and paving to prevent material entering the slots.
- Verify sections of pipe are secured to prevent separation.
- Ensure concrete backfill surface is textured and cured as required.

4-6404 Level of Inspection

Suggested levels of inspection for typical work activities are:

- Intermittent inspection of trench excavation
- Benchmark inspection of bedding and pipe installation
- Intermittent inspection of backfill
- Intermittent inspection of sampling and testing of materials, compaction, and applying curing seal

4-6405 Quality Control

While specific levels of quality control sampling and testing for plastic pipe and slotted plastic pipe are not included in Section 64, "Plastic Pipe," of the *Standard Specifications*, the contractor is responsible for providing quality control under Sections 5-1.01, "General," and 6-2.02, "Quality Control," of the *Standard Specifications*.

4-6406 Payment

Refer to Sections 64-2.04, "Payment," and 64-3.04, "Payment," of the *Standard Specifications* for payment information for plastic pipe and slotted plastic pipe, respectively.