

PLASTIC PIPE

1. APPLICABILITY

Construction Specification 45 is applicable for the use of plastic pipe conduits, except corrugated polyethylene tubing, see Construction Specification 44.

2. MATERIAL SPECIFICATION

Material Specification 547 is complementary to Construction Specification 45.

3. ITEMS TO BE INCLUDED IN CONTRACT SPECIFICATIONS AND DRAWINGS

- a. Line and grade of the conduit.
- b. Details of the bedding and shape and placement requirements.
- c. Description of the bedding materials and grading limits, if needed.
- d. Excavation requirements. Provide pay limits or actual limits for excavation, minimum trench width, if applicable and any special considerations necessary in case of unstable trench bottom and/or walls, safety, etc.
- e. Backfill requirements. Provide pay limits or actual limits of backfill, compaction requirements or other special methods of performing and controlling backfill, including the kind of material, as appropriate.
- f. Specify industry (ASTM or AWWA) material standards and/or specifications that the pipe material is required to meet, as applicable.

The designer may require a specific type of pipe by listing in Section 14 of this construction specification, and/or the appropriate reference specifications. The designer must be prepared to evaluate and accept pipe meeting other references that equal or exceed the minimums specified when proposed by the contractor or supplier. NRCS will maintain a limited list of reference specifications in NRCS offices for use of design and construction personnel.

- g. Specify the salient features of the pipe, which are required to meet the intent of the design.
 - (1) Size (diameter, include ID or OD if critical) and type of plastic (PE, HDPE, ABS, PVC 1120, etc.).
 - (2) Schedule, SDR or DR, pressure class and/or pressure rating, as appropriate.
 - (3) Perforation requirements if different from Material Specification 547.
- h. Type of joint by referring to a reference specification or details of any specific joint requirements.

- i. Details of special fittings, when applicable.
- j. Type of protective coatings for special fittings and appurtenances, when applicable (include field repair requirements).
- k. Pressure testing specifications, including rate of filling requirements, if applicable. The test pressure specified should not be less than the normal operating pressure together with the duration of the test with the allowable pressure change that will be acceptable.
- l. Specify and detail concrete thrust blocks, encasement, and anchors where applicable. Requirements for concrete encasement and for thrust blocks if other than Construction Specification 32, Structure Concrete, Class 3000M.
- m. Methods of measurement and payment.

4. DISCUSSION OF METHODS

a. Section 12, Pressure Testing

The methods are self-explanatory. The choice of method must be consistent with the function of the conduit and the required operating pressure.

b. Section 13, Measurement and Payment

The methods are self-explanatory.

When specifications are prepared using electronic procedures and all but one method are deleted for use in the contract specification, delete "All Methods The following provisions apply to all methods of measurement and payment." and left justify the remaining text.

5. DISCUSSION

This specification is written to include cast iron pipe sizes, iron pipe sizes (IPS), sewer pipe, pressure pipe, water pipe, drainpipe, and plastic irrigation pipe (PIP).

In addition to the ductile iron and cast iron fittings, one piece, injection molded, gasketed PVC plastic fittings are available for PVC pipe. These fitting are available for sewer pipe sizes 4 inches to 15 inches, for IPS-PVC pipe sizes 1.5 inches to 8 inches, and for AWWA Standard C900 pipes which are compatible with cast iron pipe sizes 4 inches to 8 inches.