



CONSTRUCTION SPECIFICATION AR-51 - CORRUGATED METAL PIPE

1. Scope

The work shall consist of furnishing and placing circular, arched, or elliptical corrugated metal pipe and fittings as shown on the drawings.

2. Materials

All pipe shall be metallic zinc-coated, aluminum-coated, or aluminum-zinc alloy coated corrugated steel pipe shall conform to ASTM A742, A760, A761, A762, A849, A875, A885, and A929 for the specified type, class, fabrication of pipe and coating.

Polymer-coated pipe shall be coated on each side with a minimum thickness of 0.01 inches (10 mils), designated as grade 10/10 in ASTM A762.

3. Handling the Pipe

The contractor shall furnish equipment as necessary to install the pipe without damaging the pipe or coating. The pipe shall be transported and handled in a manner that will prevent damage to the pipe, coating, or appurtenances.

4. Repair of Damaged Coating

Damage to metallic coating shall be repaired as follows. Clean the damaged surface area by sand blasting, power disk sanding, or wire brushing. Remove all dirt, products of corrosion, and loose and cracked coating. Remove oil and grease material with a solvent. Paint the clean and dry surface using one of the following options:

1. ___ Zinc dust - zinc oxide primer, ASTM D79 and D520
2. ___ Zinc dust paint, ASTM 4146

When metallic coating is damaged in any individual area larger than 12 square inches or when more than 0.2 percent of the total surface area of a single pipe section is damaged, that section of pipe will be rejected.

Breaks, scuffs, or weld damage areas in bituminous coatings shall be repaired by a coat of cold-applied bituminous mastic at least 0.05 inch thick. When individual breaks exceed 36 square inches or when the total area of breaks exceeds 0.5 percent of the total surface of an individual pipe section, that section will be rejected.

Breaks, scuffs, or weld damage areas in polymer coatings shall be repaired by application of a polymer material similar to and compatible with the durability, adhesion, and appearance of the original polymer coating, as described in ASTM A849, paragraph 6.8. When individual breaks exceed 36 square inches in area or when the total area of breaks exceeds 0.5 percent of the total surface area of the individual pipe section, that section of pipe will be rejected.



5. Laying and Bedding the Pipe

Unless otherwise specified, the pipe shall be installed in accordance with the manufacturer's recommendations. Pipe shall be installed so no reversal of grade exists between joints except as shown on the drawings. The pipe shall be installed with the outside laps of circumferential joints pointed upstream and with longitudinal laps at the sides near the vertical mid-height of the pipe.

Field welding of corrugated steel pipe is not permitted. Pipe sections shall be joined with specified, fabricator-supplied coupling bands. Couplings shall be installed as recommended by the fabricator.

Perforated pipe shall be installed with the perforations down and oriented symmetrically about a vertical centerline. Perforations shall be clear at the time of installation.

The pipe shall be firmly and uniformly bedded throughout its full length. Except as shown on the drawings, pipe must be laid on moist, compacted foundation, with a two-to-three-inch layer of loose moist soil adjacent to the bottom of the pipe.

6. Earth, Sand or Gravel Backfill

Backfill shall be as shown on the drawings. During backfilling, the pipe shall be loaded sufficiently to prevent displacement.

Except as otherwise specified, backfill around the pipe shall be placed in layers not more than four inches thick before compaction. Each layer of backfill shall be compacted to the density and moisture requirements specified for adjacent fill. Backfill around the pipe shall be brought up uniformly on both sides and shall extend a minimum of two feet over the pipe before large machines travel over the pipe.

7. Concrete Backfill

Where concrete backfill is shown on the drawings, the specified requirements must be met. The pipe must be loaded or anchored sufficiently to prevent displacement during concrete placement. The pipe must not be in contact with other embedded metal items such as steel reinforcement.

Where aluminum or aluminum coated pipe is shown to be embedded in concrete, the pipe surfaces to be in contact with concrete shall be coated with two coats of a bituminous paint of the cutback type.