

### **Section 66 Corrugated Metal Pipe**

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### Section 66 Corrugated Metal Pipe

#### 4-6601 General

This section provides guidelines for inspecting corrugated metal pipe for work specified under Section 66, “Corrugated Pipe,” of the *Standard Specifications*. Corrugated metal pipe, designated by pipe diameter or dimension, type, and metal thickness, includes both steel and aluminum pipe. The *Standard Plans* specify the requirements and other details for coupling bands.

#### 4-6602 Before Work Begins

Before work begins, take the following steps:

- 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.
- Modify plans when necessary to fit field conditions. Prepare change orders for major changes from approved plans; for example, additions, deletions, or changes in type or size of pipe. When structures are staked, adjustments may be made in location or length of cross drains or side drains, as necessary without requiring a change order.
- After determining final locations and lengths, give the contractor a revised pipe list, including those pipes added or altered by change order.
- Verify that Form CEM-3101, “Notice of Materials to Be Used,” includes all fabricated materials. Refer to Section 6-202, “Responsibilities for Acceptance of Manufactured or Fabricated Materials and Products,” of this manual for additional information.
- METS inspector will inspect and test corrugated pipe and joint material as necessary before arrival at the job site.

#### 4-6603 During the Course of Work

During the work, do the following:

- Upon delivery of the pipe, note whether it is identified by marks or inspection tags (Form TL-0624, “Inspection Release Tag”). Check the pipe for damage that may have occurred after inspection at the source. Require the repair of minor damage to coatings or galvanizing. If satisfactory repair cannot be achieved, require the contractor to remove this unacceptable pipe from the project. If the pipe is properly identified as inspected, project personnel normally do not need certificates of compliance or mill test reports. An inspector from the Materials Engineering and Testing Services (METS) will have already obtained these documents.

- Before excavating pipe, require that embankments be constructed as specified. Refer to Sheet A-62F of the *Standard Plans* for excavation and backfill requirements.  
For instructions about inspecting backfill, refer to Section 4-19, “Earthwork,” of this manual. Corrugated metal pipe can be displaced or damaged during backfill. Therefore, insist on precautions to prevent damage.
- For slotted corrugated steel pipe, ensure installation does not start until after paving has been completed on traffic lanes adjacent to the pipe. Ensure materials are prevented from entering pipe slots during backfilling and paving activities.
- For information about concrete backfill and slurry cement backfill, refer to Section 4-61, “Drainage Facilities—General,” of this manual.
- Be particularly alert to ensure the required type and thickness of pipe at each location. To avoid galvanic corrosion, do not allow the combination of steel and aluminum in any installation.
- Note whether the ends of pipe have been reinforced where required. Where pipe terminates at a structure, require the end of the pipe to be flush with the face or interior surface.
- Ensure circumferential joints and side seams are positioned as required. Especially note whether spaces between lengths of pipe permit a correct fit by couplers. For helically corrugated pipe, corrugations must be matched across field joints with proper space maintained between lengths of pipe. Angles, lugs, or other projections on couplers must be positioned about halfway between the crown and the side of the pipe. Before permitting backfill, couplers must be snug and tight.
- As shown on Sheet D88 in the *Standard Plans*, ensure minimum fill conditions are met for construction loads on culverts.
- Throughout the progress of the work, inspect installed pipes periodically. If you discover any structural deficiencies, ensure the deficiencies are corrected before the start of the base or surfacing operations, where pipes underlie pavements. Before accepting the contract, or recommending a granting of relief from maintenance, all pipes must be inspected and, if necessary, cleaned. The contractor is responsible for cleaning pipes placed under contract.

#### **4-6604      Level of Inspection**

Suggested levels of inspection for typical work activities are:

- Intermittent inspection of trench excavation
- Benchmark inspection of bedding and pipe installation
- Benchmark inspection of repairs to damaged galvanizing
- Benchmark inspection of end finish requirements for helically corrugated steel pipe. Refer to Section 66-1.02E(3), “End Finish,” of the *Standard Specifications*

- Intermittent inspection of backfill
- Intermittent inspection of sampling and testing of materials and compaction

**4-6605      Quality Control**

When siphons or watertight joints are installed, witness the required field leakage and hydrostatic tests.

**4-6606      Payment**

Refer to Section 66-1.04, "Payment," of the *Standard Specifications* for payment of corrugated metal pipe and pipe reducers.