Standard Specification for

Corrugated Steel Pipe, Polymer-Precoated, for Sewers and Drains

AASHTO Designation: M 245-20

Technical Subcommittee: 4b, Flexible and Metallic Pipe

Release: Group 2 (June)

ASTM Designation: A762/A762M-19

AASHTO

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1. SCOPE

1.1. This specification covers polymer-precoated corrugated steel pipe intended for use for storm water drainage, underdrains, the construction of culverts, and similar uses. Pipe covered by this specification is not normally used for the conveyance of sanitary or industrial wastes. The steel sheet used in fabrication of the pipe has a polymer protective coating over a metallic coating of zinc (galvanizing), 55 percent aluminum-zinc alloy (55 Al-Zn), or zinc-5 percent aluminum-mischmetal alloy (Zn-5 Al-MM).

1.2. The polymer precoating provides a degree of extra protection for the pipe against abrasion and corrosion as compared with metallic-coated pipe without polymer coating. Some severe environments may cause corrosion problems to accessory items such as rivets or coupling band hardware that does not have a polymer coating. Additional protection for polymer-precoated corrugated steel pipe can be provided by use of coatings applied after fabrication of the pipe as described in M 190 and ASTM A849.

1.3. This specification does not include requirements for bedding, backfill, or the relationship between earth cover load and sheet thickness of the pipe. Experience has shown that the successful performance of this product depends on the proper selection of sheet thickness, type of bedding and backfill, controlled manufacture in the plant, and care in the installation. The installation procedure is described in the *AASHTO LRFD Bridge Construction Specifications,* Section 26.

2. REFERENCED DOCUMENTS

2.1. *AASHTO Standards*:

- M 190, Asphalt-Coated Corrugated Metal Culvert Pipe and Pipe-Arches
- M 218, Steel Sheet, Zinc-Coated (Galvanized), for Corrugated Steel Pipe
- M 232M/M 232, Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- M 243, Field-Applied Coating of Corrugated Metal Structural Plate for Pipe, Pipe-Arches, and Arches
- M 246, Steel Sheet, Metallic-Coated and Polymer-Precoated, for Corrugated Steel Pipe
- M 289, Aluminum-Zinc Alloy Coated Sheet Steel for Corrugated Steel Pipe

- T 65M/T 65, Mass [Weight] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
- T 249, Helical Lock Seam Corrugated Pipe
- *AASHTO LRFD Bridge Construction Specifications*
- *AASHTO LRFD Bridge Design Specifications*

2.2. *ASTM Standards*:

- A493, Standard Specification for Stainless Steel Wire and Wire Rods for Cold Heading and Cold Forging
- A563M, Standard Specification for Carbon and Alloy Steel Nuts (Metric)
- A780/A780M, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
- A796/A796M, Standard Practice for Structural Design of Corrugated Steel Pipe, Pipe-Arches, and Arches for Storm and Sanitary Sewers and Other Buried Applications
- A849, Specification for Post-Applied Coatings, Pavings, and Linings for Corrugated Steel Sewer and Drain Pipe
- A929/A929M, Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
- B633, Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- B695, Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
- C443, Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
- D1005, Standard Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers
- D1056, Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber
- F568M, Standard Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners (withdrawn 2012)

2.3. *AISI Standard*:

- AISI S100, North American Specification for the Design of Cold-Formed Steel Structural Members

3. TERMINOLOGY

3.1. *Description of Terms Specific to This Standard*:

3.1.1. *fabricator*—producer of the pipe.

3.1.2. *manufacturer*—producer of the sheet.

3.1.3. *minimized coating structure*—coating characterized by a finer metallurgical coating structure obtained by a treatment designed to restrict the formation of the normal coarse grain structure formed during solidification of the Zn-5Al-MM alloy coating.

3.1.4. *purchaser*—purchaser of the finished product.

3.1.5. *regular coating structure*—normal coating structure resulting from unrestricted grain growth during normal solidification of the Zn-5 Al-MM alloy coating.