Standard Specification for

Corrugated Aluminum Pipe for Sewers and Drains

AASHTO Designation: M 196-16
Release: Group 2 (June 2016)
ASTM Designation: B745/B745M-95

American Association of State Highway and Transportation Officials
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AASHTO

1. SCOPE

1.1. This specification covers corrugated aluminum 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.

1.2. 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 upon the proper selection of sheet thickness, type of bedding and backfill, controlled manufacture in the plant, and care in the installation. The purchaser must correlate the above factors and also the corrosion and abrasion requirements of the field installation with the sheet thickness. The structural design of corrugated aluminum pipe and the proper installation procedures are given in *AASHTO LRFD Bridge Design Specifications* and *AASHTO LRFD Bridge Construction Specifications*.

2. REFERENCED DOCUMENTS

2.1. *AASHTO Standards*:

- M 197, Aluminum Alloy Sheet for Corrugated Aluminum Pipe
- M 232M/M 232, Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- T 249, Helical Lock Seam Corrugated Pipe
- *AASHTO LRFD Bridge Design Specifications*
- *AASHTO LRFD Bridge Construction Specifications*

2.2. *ASTM Standards*:

- A563M, Standard Specification for Carbon and Alloy Steel Nuts (Metric)
- B221M, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
- B316/B316M, Standard Specification for Aluminum and Aluminum-Alloy Rivet and Cold-Heading Wire and Rods
- B633, Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- B666/B666M, Standard Practice for Identification Marking of Aluminum and Magnesium Products
- B695, Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
- C990, Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants

- D1056, Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber
- F467M, Standard Specification for Nonferrous Nuts for General Use (Metric)
- F468M, Standard Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use (Metric)
- F568M, Standard Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners (withdrawn 2012)
- F593, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
- F594, Standard Specification for Stainless Steel Nuts
- F738M, Standard Specification for Stainless Steel Metric Bolts, Screws, and Studs
- F836M, Standard Specification for Style 1 Stainless Steel Metric Nuts

2.3. *AISI Standard*:

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

3. TERMINOLOGY

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

3.1.1. *fabricator*—the producer of the pipe.

3.1.2. *manufacturer*—the producer of the sheet.

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

4. CLASSIFICATION

4.1. *The corrugated aluminum pipe covered by this specification is classified as follows*:

4.1.1. *Type I*—This pipe shall have a full circular cross section, with a single thickness of corrugated sheet, fabricated with annular (circumferential) or helical corrugations.

4.1.2. *Type IA*—This pipe shall have a full circular cross section, with an outer shell of corrugated sheet and an inner liner of smooth (uncorrugated) sheet, fabricated with helical corrugations and lock seams.

4.1.3. *Type IR*—This pipe shall have a full circular cross section with a single thickness of smooth sheet, fabricated with helical ribs projecting outwardly.

4.1.4. *Type II*—This pipe shall be a Type I pipe that has been reformed into a pipe-arch having an approximately flat bottom.

4.1.5. *Type IIA*—This pipe shall be a Type IA pipe that has been reformed into a pipe-arch having an approximately flat bottom.

4.1.6. *Type IIR*—This pipe shall be a Type IR pipe that has been reformed into a pipe-arch having an approximately flat bottom.

4.1.7. *Type III*—This pipe, intended for use as underdrains or for underground disposal of water, shall be a Type I pipe that has been perforated to permit the inflow or outflow of water.