



Standard Specification for Corrugated Aluminum Alloy Structural Plate for Field-Bolted Pipe, Pipe-Arches, and Arches¹

This standard is issued under the fixed designation B746/B746M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers corrugated aluminum alloy structural plate used in the construction of pipe, pipe-arches, arches, underpasses, box culverts, and special shapes for field assembly. Appropriate fasteners are also described. The pipe, arches, and other shapes are generally used for drainage purposes, pedestrian and vehicular underpasses, and utility tunnels. Aluminum box culvert shapes are covered in Specification **B864/B864M**.

1.2 This specification does not include requirements for bedding, backfill, or the relationship between earth cover load and plate thickness of the pipe. Experience has shown that the successful performance of this product depends upon the proper selection of plate 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 plate thickness. The structural design of corrugated aluminum structural plate pipe and the proper installation procedures are given in Practices **B790/B790M** and **B789/B789M**, respectively. A procedure for using life-cycle cost analysis techniques to evaluate alternate drainage system designs using corrugated metal pipe is given in Practice **A930**.

1.3 The values stated in either inch-pound units or SI units are to be regarded separately as standard. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other.

2. Referenced Documents

2.1 ASTM Standards:²

¹ This specification is under the jurisdiction of ASTM Committee B07 on Light Metals and Alloys and is the direct responsibility of Subcommittee B07.08 on Corrugated Aluminum Pipe and Corrugated Aluminum Structural Plate.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

A153/A153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

A307 Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength

A449 Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use

A563 Specification for Carbon and Alloy Steel Nuts

A563M Specification for Carbon and Alloy Steel Nuts (Metric)

A930 Practice for Life-Cycle Cost Analysis of Corrugated Metal Pipe Used for Culverts, Storm Sewers, and Other Buried Conduits

B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate

B209M Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

B221 Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

B221M Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)

B666/B666M Practice for Identification Marking of Aluminum and Magnesium Products

B695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel

B789/B789M Practice for Installing Corrugated Aluminum Structural Plate Pipe for Culverts and Sewers

B790/B790M Practice for Structural Design of Corrugated Aluminum Pipe, Pipe-Arches, and Arches for Culverts, Storm Sewers, and Other Buried Conduits

B864/B864M Specification for Corrugated Aluminum Box Culverts

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

F467 Specification for Nonferrous Nuts for General Use

F467M Specification for Nonferrous Nuts for General Use (Metric)

F468 Specification for Nonferrous Bolts, Hex Cap Screws, Socket Head Cap Screws, and Studs for General Use

F468M Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use (Metric)