



Designation: B 746/B 746M – 01

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

This standard is issued under the fixed designation B 746/B 746M; 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 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 B 864/B 864M.

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 B 790/B 790M and B 789/B 789M, respectively. A procedure for using life-cycle cost analysis techniques to evaluate alternate drainage system designs using corrugated metal pipe is given in Practice A 930.

1.3 This specification is applicable to orders in either inch-pound units (as B 746) or SI units (as B 746M). Inch-pound units and SI units are not necessarily equivalent. SI units are shown in parentheses in the text; they are the applicable values when the material is ordered to B 746M.

2. Referenced Documents

2.1 ASTM Standards:

A 153/A 153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware²

A 307 Specification for Carbon Steel Bolts and Studs,

60 000 psi Tensile Strength³

A 325 Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength³

A 449 Specification for Quenched and Tempered Steel Bolts and Studs³

A 563 Specification for Carbon and Alloy Steel Nuts³

A 563M Specification for Carbon and Alloy Steel Nuts [Metric]³

A 930 Practice for Life-Cycle Cost Analysis of Corrugated Metal Pipe Used for Culverts, Storm Sewers, and Other Buried Conduits²

B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate⁴

B 209M Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]⁴

B 221 Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes⁴

B 221M Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]⁴

B 666/B 666M Practice for Identification Marking of Aluminum and Magnesium Products⁴

B 695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel⁵

B 789/B 789M Practice for Installing Corrugated Aluminum Structural Plate Pipe for Culverts and Sewers⁴

B 790/B 790M Practice for Structural Design of Corrugated Aluminum Pipe, Pipe-Arches, and Arches for Culverts, Storm Sewers, and Other Buried Conduits⁴

B 864/B 864M Specification for Corrugated Aluminum Box Culverts⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁶

F 467 Specification for Nonferrous Nuts for General Use³

F 467M Specification for Nonferrous Nuts for General Use [Metric]³

F 468 Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use³

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 Aluminum Culvert.

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² Annual Book of ASTM Standards, Vol 01.06.

³ Annual Book of ASTM Standards, Vol 01.08.

⁴ Annual Book of ASTM Standards, Vol 02.02.

⁵ Annual Book of ASTM Standards, Vol 02.05.

⁶ Annual Book of ASTM Standards, Vol 14.02.