



Standard Specification for Steel Sheet Piling, Cold Formed, Light Gage¹

This standard is issued under the fixed designation A 857/A 857M; 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.

1. Scope

1.1 This specification covers cold-formed, light gage carbon steel sheet piling of structural quality for use in the construction of shore walls, trench shoring, wingwalls, bulkheads, and like applications.

1.2 The nominal thickness of material furnished under this specification shall be 0.25 in. [6.4 mm] or less.

1.3 When the sheet piling is to be welded, it is presupposed that a welding procedure suitable for the grade of steel and intended use or service will be used. See Appendix X3 of Specification A 6/A 6M for information on weldability.

1.4 The values stated in either inch-pound units or SI units are to be regarded as the standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

2. Referenced Documents

2.1 ASTM Standards:

A 6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling²

A 36/A36M Specification for Carbon Structural Steel²

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 325M Specification for High-Strength Bolts for Structural Steel Joints [Metric]³

A 502 Specification for Steel Structural Rivets³

A 563 Specification for Carbon and Alloy Steel Nuts³

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

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.02 on Structural Steel for Bridges, Buildings, Rolling Stock, and Ships.

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² *Annual Book of ASTM Standards*, Vol 01.04.

³ *Annual Book of ASTM Standards*, Vol 15.08.

A 570/A570M Specification for Steel, Sheet and Strip, Carbon, Hot-Rolled, Structural Quality⁴

3. General Requirements for Delivery

3.1 Material furnished under this specification shall conform to the requirements of the current edition of Specification A 6/A 6M, for the ordered material, unless a conflict exists in which case this specification shall prevail.

4. Appurtenant Materials

4.1 When components of a steel structure are identified with this ASTM designation but the product form is not listed in the scope of this specification, the material shall conform to one of the standards listed in Table 1 unless otherwise specified by the purchaser. Table 1 does not provide any specification requirements to a manufacturer or processor. Orders to a manufacturer or processor should describe the required ASTM designation for product forms not listed in the scope of this specification. Appurtenant materials delivered shall be compatible in strength, corrosion resistance, and weldability with materials purchased.

5. Materials and Manufacture

5.1 Sheet piling shall be produced using one of the following processes:

5.1.1 Decoiling coiled material and feeding it through a multi-stand roll-forming mill at ambient temperature, or

5.1.2 Forming cut lengths of material into piling on a press break.

6. Chemical Composition

6.1 The chemical composition of the steel on heat analysis shall conform to the requirements listed in Table 2.

7. Tension Test

7.1 The source material or the sheet piling as provided in 7.2 and 7.3, as represented by the test specimens, shall conform to the tensile requirements for the grade specified as listed in Table 3.

⁴ *Annual Book of ASTM Standards*, Vol 01.03.

**TABLE 1 Appurtenant Material Specifications**

NOTE 1— The specifier should be satisfied of the suitability of these materials for the intended application. Composition and/or mechanical properties may be different than specified in this specification.

Commodity	ASTM Specification of Material to be Furnished with Steel Sheet Piling
Plates, bars, structural shapes	A 36/A 36M
Rivets	A 502 Grade 1 or Grade 2
Bolts	A 307, Grade A or F 568, Class 4.6
High strength bolts	A 325 or A 325M
Steel nuts	A 563 or A 563M

TABLE 2 Chemical Requirements^A

Element	Heat Analysis Composition, %
Carbon	0.25 max
Manganese	1.50 max
Phosphorus	0.35 max
Sulfur	0.04 max
Copper (when specified)	0.20 min

^A Alloy elements, other than those shown in this table, may be added and shall be reported with the heat analysis.

7.2 Sheet and strip source materials shall be tested in accordance with the requirements of Specification A 570/A 570M. The test specimens shall be taken from the source material or from the sheet piling. If test specimens are obtained from the sheet piling, they are to be taken from a nondeformed area.

TABLE 3 Tensile Requirements

Grade	Yield Point, min		Tensile Strength, min		Elongation Percent, min	
	ksi	MPa	ksi	MPa	in 8 in. or 200 mm	in 2 in. or 50 mm
25	25	[170]	38	[260]	20	23
30	30	[205]	49	[340]	17	23
33	33	[230]	52	[360]	16	22
36	36	[250]	53	[365]	15	21

7.3 Plate source material shall be tested in accordance with the requirements of Specification A 6/A 6M, except that the test specimen may be taken such that the longitudinal axis of the specimens are parallel to the final direction of rolling of the material. The test specimens shall be taken from the source or from the sheet piling on a nondeformed area.

8. Identification

8.1 Each piece of piling shall be marked with the manufacturer's name or trademark, this specification number, grade designation, heat number, and section size designation, except that secured lifts of piling less than 0.230 in. [5.8 mm] in thickness may have this identification shown on a tag of substantial size attached to each lift.

9. Keywords

9.1 bulkheads; cold-formed; light gage; sheet piling; shore walls; shoring; steel; structural steel; wingwalls

SUPPLEMENTARY REQUIREMENTS

Supplementary requirements shall not apply unless specified in the purchase order or contract. Standardized supplementary requirements for use at the option of the purchaser are listed in Specification A 6/A 6M. In addition, the following supplementary requirement is also suitable for use with this specification.

S51. *Interlock Strength*—The minimum strength of the interlocked joint required for certain services may be specified for certain sheet piling sections subject to specific agreement

between the material purchaser and the manufacturer.

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