

RELIABLE STEEL DISTRIBUTORS

(A GOVT. OF INDIA RECOGNIZED EXPORT HOUSE) (A PED CERTIFIED COMPANY)
(ISO 9001 , 14001 & OHSAS 18001 CERTIFIED COMPANY) EMAIL US – sales@rsdfittingsflanges.com

A 283/A 283M –

Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates¹

1. Scope*

1.1 This specification² covers four grades (A, B, C, and D) of carbon steel plates of structural quality for general application.

1.2 When the steel is to be welded, a welding procedure suitable for the grade of steel and intended use or service is to be utilized. See Appendix X3 of Specification A 6/A 6M for information on weldability.

1.3 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exactly equivalents; therefore, each system is to be used independently of the other, without combining values in any way.

1.4 For plate produced from coil and furnished without heat treatment or with stress relieving only, the additional requirements, including additional testing requirements and the reporting of additional test results, of Specification A 6/A 6M apply.

1.5 This specification contains notes or footnotes, or both, that provide explanatory material. Such notes and footnotes, excluding those in tables and figures, do not contain any mandatory requirements.

2. Referenced Documents

2.1 *ASTM Standards:*³

A 6/A 6M Specification for General Requirements for

Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

3. General Requirements for Delivery

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

3.2 Coils are excluded from qualification to this specification until they are processed into finished plates. Plates produced from coil means plates that have been cut to individual lengths from a coil. The processor directly controls, or is responsible for, the operations involved in the processing of a coil into finished plates. Such operations include decoiling, leveling, cutting to length, testing, inspection, conditioning, heat treatment (if applicable), packaging, marking, loading for shipment, and certification.

NOTE 1—For plates produced from coil and furnished without heat treatment or with stress relieving only, two test results are to be reported for each qualifying coil. Additional requirements regarding plate produced from coil are described in Specification A 6/A 6M.

4. Process

4.1 The steel shall be made by one or more of the following processes: open-hearth, basic-oxygen, or electric-furnace.

5. Chemical Requirements

5.1 The heat analysis shall conform to the requirements prescribed in **Table 1**.

5.2 The steel shall conform on product analysis to the requirements prescribed in **Table 1**, subject to the product analysis tolerances in Specification A 6/A 6M.

6. Tensile Requirements

6.1 Material as represented by the test specimens shall conform to the requirements as to tensile properties prescribed in **Table 2**

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TABLE 1 Chemical Requirements

Elements	Heat Analysis, %			
	Grade A	Grade B	Grade C	Grade D
Carbon, max	0.14	0.17	0.24	0.27
Manganese, max	0.90	0.90	0.90	0.90
Phosphorus, max	0.035	0.035	0.035	0.035
Sulfur, max	0.04	0.04	0.04	0.04
Silicon				
Plates 1½ in. [40 mm] and under, max	0.40	0.40	0.40	0.40
Plates over 1½ in. [40 mm]	0.15–0.40	0.15–0.40	0.15–0.40	0.15–0.40
Copper, min % when copper is specified	0.20	0.20	0.20	0.20

TABLE 2 Tensile Requirements^A

	Grade A	Grade B	Grade C	Grade D
Tensile strength, ksi [MPa]	45–60 [310–415]	50–65 [345–450]	55–75 [380–515]	60–80 [415–550]
Yield point, min, ksi [MPa]	24 [165]	27 [185]	30 [205]	33 [230]
Elongation in 8 in. [200 mm], min, % ^B	27	25	22	20
Elongation in 2 in. [50 mm], min, % ^B	30	28	25	23

^A See Specimen Orientation under the Tension Tests section of Specification A 6/A 6M.

^B For plates wider than 24 in. [600 mm], the elongation requirement is reduced two percentage points. See elongation requirement adjustments in the Tension Tests section of Specification A 6/A 6M.

SUPPLEMENTARY REQUIREMENTS

Supplementary requirements shall not apply unless specified in the order or contract. Standardized supplementary requirements for use at the option of the purchaser are listed in Specification A 6/A 6M. Those that are considered suitable for use with this specification are listed by title:

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| S2. Product Analysis, | S8. Ultrasonic Examination, and |
| S3. Simulated Post-Weld Heat Treatment of Mechanical Test Coupons, | S15. Reduction of Area. |
| S5. Charpy V-Notch Impact Test, | S97. <i>Limitation on Rimmed or Capped Steel:</i> |
| S6. Drop Weight Test (for Material 0.625 in. [16 mm] and over in Thickness), | S97.1 The steel shall be other than rimmed or capped. |

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