



Designation: A830/A830M – 18

# Standard Specification for Plates, Carbon Steel, Structural Quality, Furnished to Chemical Composition Requirements<sup>1</sup>

This standard is issued under the fixed designation A830/A830M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope\*

1.1 This specification covers structural quality carbon steel plates furnished to chemical composition requirements.

1.2 The plates are available in several standard steel grades and non-standard grades.

1.3 The plates are usually furnished in the as-rolled (hot-rolled) condition.

1.4 Supplementary requirements are provided for additional requirements that may be specified on the order.

1.5 When the steel is to be welded, it is presupposed that a welding procedure suitable for the grade of steel and intended use or service will be utilized. See Appendix X3 of Specification A6/A6M for information on weldability.

1.6 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

<sup>1</sup> 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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<sup>2</sup> 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.

A6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

## 3. Ordering Information

3.1 In addition to the information required by Specification A6/A6M, the order shall include the following, if applicable:

3.1.1 Silicon requirements (see 5.3 and Supplementary Requirement S96), and

3.1.2 Limitation on rimmed or capped steel.

3.1.3 An alternate designation (CS or DS, see Supplementary Requirement S98) may be used.

## 4. Materials and Manufacture

4.1 The steel shall be killed.

## 5. Chemical Composition

5.1 The heat analysis shall conform to the requirements for the applicable grade listed in Table 1, unless otherwise specified as permitted in 5.2.

5.2 The chemical requirements for heat analysis may be specified in accordance with the ranges and limits listed in Table 2. In such instances, the heat analysis shall conform to the requirements specified on the order.

5.3 When silicon is required, the range on heat analysis shall be from 0.15 to 0.40 % unless otherwise specified on the order (see Supplementary Requirement S96).

## 6. General Requirements

6.1 Material furnished under this specification shall conform to the requirements of the current edition of Specification A6/A6M, for the ordered material, unless a conflict exists in which case this specification shall prevail.

## 7. Keywords

7.1 carbon; chemical composition; non-standard grades; plates; standard grades; steel; structural steel

\*A Summary of Changes section appears at the end of this standard

**TABLE 1 Carbon Plate Compositions, Standard Steels<sup>A</sup>**

Grade Number	Chemical Composition Limits, %			
	Carbon	Manganese	Phosphorous, max	Sulfur, max
1006	0.08 max	0.45 max	0.030	0.030
1008	0.10 max	0.50 max	0.030	0.030
1009	0.15 max	0.60 max	0.030	0.030
1010	0.08 to 0.13	0.30 to 0.60	0.030	0.030
1012	0.10 to 0.15	0.30 to 0.60	0.030	0.030
1015	0.13 to 0.18	0.30 to 0.60	0.030	0.030
1016	0.13 to 0.18	0.60 to 0.90	0.030	0.030
1017	0.15 to 0.20	0.30 to 0.60	0.030	0.030
1018	0.15 to 0.20	0.60 to 0.90	0.030	0.030
1019	0.15 to 0.20	0.70 to 1.00	0.030	0.030
1020	0.18 to 0.23	0.30 to 0.60	0.030	0.030
1021	0.18 to 0.23	0.60 to 0.90	0.030	0.030
1022	0.18 to 0.23	0.70 to 1.00	0.030	0.030
1023	0.20 to 0.25	0.30 to 0.60	0.030	0.030
1025	0.22 to 0.28	0.30 to 0.60	0.030	0.030
1026	0.22 to 0.28	0.60 to 0.90	0.030	0.030
1030	0.28 to 0.34	0.60 to 0.90	0.030	0.030
1033	0.30 to 0.36	0.70 to 1.00	0.030	0.030
1035	0.32 to 0.38	0.60 to 0.90	0.030	0.030
1037	0.32 to 0.38	0.70 to 1.00	0.030	0.030
1038	0.35 to 0.42	0.60 to 0.90	0.030	0.030
1039	0.37 to 0.44	0.70 to 1.00	0.030	0.030
1040	0.37 to 0.44	0.60 to 0.90	0.030	0.030
1042	0.40 to 0.47	0.60 to 0.90	0.030	0.030
1043	0.40 to 0.47	0.70 to 1.00	0.030	0.030
1045	0.43 to 0.50	0.60 to 0.90	0.030	0.030
1046	0.43 to 0.50	0.70 to 1.00	0.030	0.030
1049	0.46 to 0.53	0.60 to 0.90	0.030	0.030
1050	0.48 to 0.55	0.60 to 0.90	0.030	0.030
1055	0.50 to 0.60	0.60 to 0.90	0.030	0.030
1060	0.55 to 0.65	0.60 to 0.90	0.030	0.030
1064	0.60 to 0.70	0.50 to 0.80	0.030	0.030
1065	0.60 to 0.70	0.60 to 0.90	0.030	0.030
1070	0.65 to 0.75	0.60 to 0.90	0.030	0.030
1074	0.70 to 0.80	0.50 to 0.80	0.030	0.030
1078	0.72 to 0.85	0.30 to 0.60	0.030	0.030
1080	0.75 to 0.88	0.60 to 0.90	0.030	0.030
1084	0.80 to 0.93	0.60 to 0.90	0.030	0.030
1085	0.80 to 0.93	0.70 to 1.00	0.030	0.030
1086	0.80 to 0.93	0.30 to 0.50	0.030	0.030
1090	0.85 to 0.98	0.60 to 0.90	0.030	0.030
1095	0.90 to 1.03	0.30 to 0.50	0.030	0.030
1524	0.19 to 0.25	1.35 to 1.65	0.030	0.030
1527	0.22 to 0.29	1.20 to 1.50	0.030	0.030
1536	0.30 to 0.37	1.20 to 1.50	0.030	0.030
1541	0.36 to 0.44	1.35 to 1.65	0.030	0.030
1548	0.44 to 0.52	1.10 to 1.40	0.030	0.030
1552	0.47 to 0.55	1.20 to 1.50	0.030	0.030

<sup>A</sup> Grades with a specified maximum carbon content of 0.40 % or higher on heat analysis shall have a silicon content from 0.15 to 0.40 % on heat analysis, unless otherwise specified on the order.