



Designation: **A830/A830M—14** **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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 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>

**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).

<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](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

\*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, %				Sulfur, max
	Number	Carbon	Manganese	Phosphorous, 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	
<del>1090</del>	<del>0.85 to 0.98</del>	<del>0.60 to 0.90</del>	<del>0.030</del>	<del>0.030</del>	
<del>1095</del>	<del>0.90 to 1.03</del>	<del>0.30 to 0.50</del>	<del>0.030</del>	<del>0.030</del>	
<u>1090</u>	<u>0.85 to 0.98</u>	<u>0.60 to 0.90</u>	<u>0.030</u>	<u>0.030</u>	
<u>1095</u>	<u>0.90 to 1.03</u>	<u>0.30 to 0.50</u>	<u>0.030</u>	<u>0.030</u>	
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.

## 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