Designation: ~~A830/A830M – 11~~ A830/A830M – 13

Standard Specification for Plates, Carbon Steel, Structural Quality, Furnished to Chemical Composition Requirements[1]

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 (ε) 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.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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 (see~~ steel. ~~4.3 and Supplementary Requirement S97).~~

4. Materials and Manufacture

~~4.1 Steel specified to a maximum carbon content of 0.39 % or lower on heat analysis may be made to any deoxidation practice unless otherwise specified on the order.~~

~~4.2 Steel specified to a maximum carbon content of 0.40 % or higher on heat analysis shall be killed unless otherwise specified on the order.~~

4.1 ~~If rimmed or capped steel is not acceptable, Supplementary Requirement S97 shall be specified on the order.~~ 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.

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[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] 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.

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

TABLE 1 Carbon Plate Compositions, Standard Steels[A]

Grade	Chemical Composition Limits, %			
Number	Carbon	Manganese	Phosphorous, max	Sulfur, max
1006	0.08 max	0.45 max	0.035	0.04
1008	0.10 max	0.50 max	0.035	0.04
1009	0.15 max	0.60 max	0.035	0.04
1010	0.08 to 0.13	0.30 to 0.60	0.035	0.04
1012	0.10 to 0.15	0.30 to 0.60	0.035	0.04
1015	0.13 to 0.18	0.30 to 0.60	0.035	0.04
1016	0.13 to 0.18	0.60 to 0.90	0.035	0.04
1017	0.15 to 0.20	0.30 to 0.60	0.035	0.04
1018	0.15 to 0.20	0.60 to 0.90	0.035	0.04
1019	0.15 to 0.20	0.70 to 1.00	0.035	0.04
1020	0.18 to 0.23	0.30 to 0.60	0.035	0.04
1021	0.18 to 0.23	0.60 to 0.90	0.035	0.04
1022	0.18 to 0.23	0.70 to 1.00	0.035	0.04
1023	0.20 to 0.25	0.30 to 0.60	0.035	0.04
1025	0.22 to 0.28	0.30 to 0.60	0.035	0.04
1026	0.22 to 0.28	0.60 to 0.90	0.035	0.04
1030	0.28 to 0.34	0.60 to 0.90	0.035	0.04
1033	0.30 to 0.36	0.70 to 1.00	0.035	0.04
1035	0.32 to 0.38	0.60 to 0.90	0.035	0.04
1037	0.32 to 0.38	0.70 to 1.00	0.035	0.04
1038	0.35 to 0.42	0.60 to 0.90	0.035	0.04
1039	0.37 to 0.44	0.70 to 1.00	0.035	0.04
1040	0.37 to 0.44	0.60 to 0.90	0.035	0.04
1042	0.40 to 0.47	0.60 to 0.90	0.035	0.04
1043	0.40 to 0.47	0.70 to 1.00	0.035	0.04
1045	0.43 to 0.50	0.60 to 0.90	0.035	0.04
1046	0.43 to 0.50	0.70 to 1.00	0.035	0.04
1049	0.46 to 0.53	0.60 to 0.90	0.035	0.04
1050	0.48 to 0.55	0.60 to 0.90	0.035	0.04
1055	0.50 to 0.60	0.60 to 0.90	0.035	0.04
1060	0.55 to 0.65	0.60 to 0.90	0.035	0.04
1064	0.60 to 0.70	0.50 to 0.80	0.035	0.04
1065	0.60 to 0.70	0.60 to 0.90	0.035	0.04
1070	0.65 to 0.75	0.60 to 0.90	0.035	0.04
1074	0.70 to 0.80	0.50 to 0.80	0.035	0.04
1078	0.72 to 0.85	0.30 to 0.60	0.035	0.04
1080	0.75 to 0.88	0.60 to 0.90	0.035	0.04
1084	0.80 to 0.93	0.60 to 0.90	0.035	0.04
1085	0.80 to 0.93	0.70 to 1.00	0.035	0.04
1086	0.80 to 0.93	0.30 to 0.50	0.035	0.04
1090	0.85 to 0.98	0.60 to 0.90	0.035	0.04
1095	0.90 to 1.03	0.30 to 0.50	0.035	0.04
1524	0.19 to 0.25	1.35 to 1.65	0.035	0.04
1527	0.22 to 0.29	1.20 to 1.50	0.035	0.04
1536	0.30 to 0.37	1.20 to 1.50	0.035	0.04
1541	0.36 to 0.44	1.35 to 1.65	0.035	0.04
1548	0.44 to 0.52	1.10 to 1.40	0.035	0.04
1552	0.47 to 0.55	1.20 to 1.50	0.035	0.04

[A] 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.

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~~steel; structural steel