



Designation: A871/A871M – 20

Standard Specification for High-Strength Low-Alloy Structural Steel Plate With Atmospheric Corrosion Resistance¹

This standard is issued under the fixed designation A871/A871M; 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 high-strength low-alloy steel plate intended for use in tubular structures and poles or in other suitable applications. Two grades, 60 and 65, may be provided as-rolled, normalized or quenched and tempered as required to meet the specified mechanical requirements.

1.2 The atmospheric corrosion resistance of this steel in most environments is substantially better than that of carbon structural steels with or without copper addition (see [Note 1](#)). When properly exposed to the atmosphere, this steel can be used bare (unpainted) for many applications.

NOTE 1—For methods of estimating the atmospheric corrosion resistance of low-alloy steels, see Guide [G101](#).

1.3 When the steel is to be welded, it is presupposed that welding procedures 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.

1.4 Supplementary requirements in accordance with Specification [A6/A6M](#) are available, but shall apply only when specified by the purchaser at time of ordering.

1.5 The values stated in either inch-pound units or SI units are to be regarded as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.6 *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.*

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. Referenced Documents

2.1 *ASTM Standards*:²

- [A6/A6M](#) Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
- [A370](#) Test Methods and Definitions for Mechanical Testing of Steel Products
- [A673/A673M](#) Specification for Sampling Procedure for Impact Testing of Structural Steel
- [G101](#) Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels

3. General Requirements for Delivery

3.1 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.

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 2—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 [A6/A6M](#).

4. Materials and Manufacture

4.1 When the steel is to be heat treated in accordance with Section 5, or to be heat treated as specified in the purchase order, the steel shall be made to fine grain practice.

5. Heat Treatment

5.1 Grade 65 in thicknesses of $\frac{3}{16}$ to $\frac{3}{4}$ in. [5 to 20 mm] and Grade 60 in thicknesses of $\frac{3}{16}$ to $1\frac{3}{8}$ in. [5 to 35 mm] are

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