Designation: A887 – 20

Standard Specification for Borated Stainless Steel Plate, Sheet, and Strip for Nuclear Application[1]

This standard is issued under the fixed designation A887; 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 chromium-nickel stainless steel plate, sheet, and strip, modified by the addition of natural or enriched boron, for nuclear application.

1.2 Borated stainless steels covered by this specification, because of their particular alloy content and specialized properties, may require special care in their fabrication and welding. Specific procedures are of fundamental importance, and it is presupposed that all parameters will be in accordance with approved methods capable of producing the desired properties in the finished fabrication.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health and environmental practices and determine the applicability of regulatory limitations prior to use.

1.5 *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:*[2]

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A480/A480M Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

3. General Requirements

3.1 The following requirements for orders for material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A480/A480M.

3.1.1 Definitions,
3.1.2 General requirements for delivery,
3.1.3 Ordering information,
3.1.4 Process,
3.1.5 Dimensions and permissible variations,
3.1.6 Workmanship, finish, and appearance,
3.1.7 Retreatment,
3.1.8 Inspection,
3.1.9 Rejection and rehearing,
3.1.10 Material test report,
3.1.11 Certification, and
3.1.12 Packaging, marking, and loading.

4. Heat Treatment

4.1 The austenitic chromium-nickel steels shall be solution-annealed to meet the mechanical property requirements of this specification. Solution-annealing shall consist of heating the material to a temperature of 1900 °F (1040 °C) minimum for an appropriate time followed by water quenching or rapidly cooling by other means.

5. Chemical Composition

5.1 The chemical analysis of representative material shall be performed, as agreed upon between the purchaser and supplier, to determine the percentages of the elements identified in Table 1. The chemical composition thus determined shall be reported to the purchaser, or his representative, and shall conform to the requirements specified in Table 1.

5.2 When a product (check or verification) analysis is performed, the chemical composition thus determined may

[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 A01.17 on Flat-Rolled and Wrought Stainless Steel.

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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**