Designation: A 611 – 97

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
Reprinted from the Annual Book of ASTM Standards. Copyright ASTM

Standard Specification for Structural Steel (SS), Sheet, Carbon, Cold-Rolled[1]

This standard is issued under the fixed designation A 611; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers cold-rolled carbon structural steel (SS) sheet, in cut lengths or coils. It includes five strength levels designated as Grade A with yield point 25 ksi (170 MPa) minimum; Grade B with 30 ksi (205 MPa) minimum; Grade C Types 1 and 2 with 33 ksi (230 MPa) minimum; Grade D Types 1 and 2 with 40 ksi (275 MPa) minimum; and Grade E with 80 ksi (550 MPa) minimum.

1.2 Grades A, B, C, and D have moderate ductility whereas Grade E is a full-hard product with no specified minimum elongation.

1.3 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*

A 568/A 568M Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for[2]

3. Terminology

3.1 *Definition*:

3.1.1 *structural steel (SS) sheet*—sheet produced to tensile property values as specified or required.

4. Ordering Information

4.1 Orders for material under this specification shall include the following information, as required, to describe the material adequately.

4.1.1 ASTM specification number, date of issue, and grade (if Grades C or D, indicate Type 1 or Type 2),

4.1.2 Copper-bearing steel (if required),

4.1.3 Special requirements (if required),

4.1.4 Name of material (cold-rolled sheet), structural quality,

4.1.5 Finish; matte (dull) finish will be supplied unless otherwise ordered,

4.1.6 Condition (oiled or dry), and

TABLE 1 Chemical Requirements

Element	Composition, %		
	Grades A, B, C, Type 1, and E	Grade D Type 1	Grades C and D Type 2
Carbon, max	0.20	0.20	0.15
Manganese, max	0.60	0.90	0.60
Phosphorus, max	0.035	0.035	0.20
Sulfur, max	0.035	0.035	0.035
Copper, when copper steel is specified, min	0.20	0.20	0.20

4.1.7 Dimensions.

4.1.7.1 As agreed upon between the purchaser and the producer, material ordered to this specification will be supplied to meet the appropriate standard or restricted thickness tolerance table shown in Specification A 568/A 568M.

NOTE 1—Not all producers are capable of meeting all of the limitations of the thickness tolerance tables in Specification A 568/A 568M. The purchaser should contact the producer regarding possible limitations prior to placing an order.

4.1.8 Coil size requirements, and

4.1.9 Cast or heat (formerly ladle) analysis and test report (request, if required).

NOTE 2—A typical ordering description is as follows: ASTM A 611, date, Grade C, Type 1, Cold-Rolled Oiled Sheet, Structural Steel (SS), 0.035 minimum by 36 by 96 in. (0.89 minimum by 914 by 2438 mm) Standard Thickness Tolerance, for Roof Deck.

5. General Requirements for Delivery

5.1 Material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A 568/A 568M.

6. Chemical Composition

6.1 The cast or heat analysis of the steel shall conform to the requirements prescribed in Table 1.

6.1.1 Unspecified elements may be present. Limits on elements shall be as stated in Table 2.

6.1.1.1 Each of the elements listed in Table 2 shall be included in the report of the heat analysis. When the amount of copper, nickel, chromium, or molybdenum is less than 0.02 %, the analysis may be reported as <0.02 %. When the amount of vanadium or columbium is less than 0.008 %, the analysis may be reported as <0.008 %.

---

[1] This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel and Related Alloys, and is the direct responsibility of Subcommittee A01.19 on Steel Sheet and Strip.

Current edition approved March 10, 1997. Published November 1997. Originally published as A 611 – 70. Last previous edition A 611 – 96.

[2] *Annual Book of ASTM Standards*, Vol 01.03.