



ASTM A 308 – 78^{e1}

Standard Specification for STEEL, SHEET, COLD-ROLLED, LONG TERNE COATED¹

This Standard is issued under the fixed designation A 308; 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.

This specification has been approved for use by agencies of the Department of Defense and for listing in the DoD Index of Specifications and Standards. QQT 201 B

^{e1} NOTE—The note in Table 1 was editorially changed in November 1980.

1. Scope

1.1 This specification covers cold-rolled sheet steel in coils and cut lengths, coated with a lead-tin alloy (terne alloy, see 3.1) by the hot-dip process. This product is commonly known as long terne and is used where ease of solderability and a degree of corrosion resistance are desirable. It may also be used for stampings where difficulties in drawing may be lessened by the coating which acts as a lubricant in the die. The weight of coating, always expressed as total coating on both sides, may be specified in accordance with Table 1. Long terne is available in the following quality designations: Commercial Quality, Drawing Quality, Drawing Quality Special Killed, and Structural (Physical) Quality.

1.2 This specification does not cover the product known as Short Terne Plate which is described in Federal Specifications QQ-T-191b, Terne Sheets (Long and Short Ternes),² and QQ-T-201b, Terne Plate for Roofing (Roofing Ternes).²

NOTE 1—The values stated in inch-pound units are to be regarded as the standard.

2. Applicable Documents

2.1 ASTM Standards:

- A 309, Test for Weight and Composition of Coating on Long Terne Sheet by the Triple Spot Test³
- A 366, Specification for Steel, Carbon, Cold-Rolled Sheet, Commercial Quality³
- A 568, Specification for Steel, Carbon and High-Strength Low-Alloy Hot-Rolled Sheet, Hot-Rolled Strip, and Cold-Rolled

Sheet, General Requirements³

- A 611, Specification for Steel, Cold-Rolled Sheet, Carbon, Structural⁴
- A 619, Specification for Steel Sheet, Carbon, Cold-Rolled, Drawing Quality³
- A 620, Specification for Steel Sheet, Carbon, Cold-Rolled, Drawing Quality, Special Killed³
- A 700, Recommended Practices for Packaging, Marking, and Loading Methods for Steel Products for Domestic Shipment⁵

3. Description of Terms

3.1 *Long Terne Steel Sheet* is a product coated by immersion in molten terne metal. *Terne Metal* is an alloy of lead and a small percentage of tin. The percentage of tin used need only be sufficient to obtain a smooth continuous coating. The minimum tin content is 3 %; however, the use of higher percentages of tin will vary depending on the type of coating equipment used.

3.2 Quality Designations:

3.2.1 *Commercial Quality*—This material is intended for parts where bending, moderate forming or drawing, and welding may be involved (see Specification A 366).

3.2.2 *Drawing Quality*—This material is in-

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² Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, Pa. 19120.

³ Annual Book of ASTM Standards, Part 3.

⁴ Annual Book of ASTM Standards, Parts 3 and 4.

⁵ Annual Book of ASTM Standards, Parts 1, 3, 4, and 5.



Documents

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tended for fabricating identified parts where drawing or severe forming may be involved (see Specification A 619).

3.2.3 Drawing Quality Special Killed—This material is intended for fabricating identified parts where particularly severe drawing or forming may be involved, or essential freedom from aging is required (see Specification A 620).

3.2.4 Structural (Physical) Quality—This material is produced when mechanical properties are specified or required. Such properties or values include those indicated by tension, hardness, or other commonly accepted mechanical tests (see Specification A 611).

4. General Requirements for Delivery

4.1 Material furnished under this specification shall conform to the applicable requirements for cold-rolled sheet of the current edition of Specification A 568 unless otherwise specified herein.

4.2 Long terne coated sheet steel shall be ordered to a decimal thickness for both coil or cut length and is made to that thickness in the base steel sheet.

5. Ordering Information

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

5.1.1 Name of material (Long Terne Coated Sheet Steel) and quality.

5.1.2 ASTM designation number and date of issue.

5.1.3 Coating designation.

5.1.4 Specify whether oiled or dry.

5.1.5 Dimensions (show thickness, width, and length, if cut length).

5.1.6 Coil size requirements (specify maximum OD (outside diameter), acceptable ID (inside diameter), and maximum weight).

5.1.7 End application (show part identification and description), and

5.1.8 Special requirements (if required).

NOTE 2—A typical ordering description is as follows: Long Terne Coated Sheet, Drawing Quality Special Killed, ASTM A 308 dated——; Coating Designation LT25, Oiled. 0.024 by 32 in. by coil. 24 in. ID Coils, 15 000 lb max for fuel tank—upper half.

6. Manufacture, Base Metal

6.1 The base metal is produced in conformance to that described for cold-rolled sheet in Specification A 568.

7. Chemical Requirements

7.1 The chemical composition of base metal furnished under this specification shall conform to the requirements for cold-rolled sheet as specified in the applicable quality designations listed in Section 3.

8. Mechanical Requirements

8.1 Base Metal Bend Test—Except in the case of structural (physical) quality, material covered by this specification shall be capable of being bent at room temperature through 180 deg flat on itself in any direction without fracture of the base metal. Bend test requirements for structural (physical) quality are subject to negotiation.

9. Coating Tests

9.1 Weight of Coating:

9.1.1 The weight of coating shall conform to the requirements for triple- and single-spot minimum checks prescribed in Table 1 for the specific coating designation. When the coating designation is not specified, long terne sheet shall be Designation LT01 not subject to the coating tests. The weight of coating is the total amount on both sides of a sheet, expressed in ounces per square foot (or grams per square metre) of sheet.

9.1.2 When the purchaser wishes to make tests to ascertain compliance of this specification for coating weight on a lot of any specific item of terne coated steel sheet, the procedure to be employed is as outlined in Method A 309 in conjunction with the sampling procedure provided in 9.1.3, 9.1.4, 9.1.5, and 9.1.6.

9.1.3 Triple-Spot Test—The triple-spot test shall be made in accordance with the procedure of Method A 309. The result shall consist of the average of determinations from the three specimens cut from the test sheet or sample piece as provided in 9.1.5 and 9.1.6. Material 18 in. (455 mm) and under is normally produced by slitting from wider width coils or shearing cut lengths and therefore is subject to the single-spot test