



Standard Specification for Steel Sheet, Zinc-Nickel Alloy Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface¹

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1. Scope

1.1 This specification covers zinc-nickel alloy coatings applied by the electrolytic process to hot-rolled and cold-rolled steel sheet. The coating has a smooth, spangle-free surface. The zinc-nickel-coated sheet covered in this specification is produced in a range of coating masses to provide coatings that are compatible with the anticipated service life required. The coating mass varies, from very thin coatings that are usually painted to provide good service, to relatively heavy masses that provide good corrosion resistance in the bare (unpainted) condition. The composition range is from 9 to 16 % nickel, by weight, with the balance being zinc.

1.2 The product shall be coated on one or both surfaces with equal or differential coating masses on the two surfaces. Sheet coated with equal coating masses on each surface has similar levels of corrosion protection on each surface. Often, however, a higher level of corrosion protection is required on one surface than is required on the other. In these situations, one surface shall be specified with a heavier coating mass than the other. Either surface, when specified to be painted, will provide additional corrosion protection as compared to an unpainted surface.

1.3 This coating process has essentially no effect on the base metal mechanical properties, and use is permitted on any grade of hot- or cold-rolled steel sheet. The coated sheet is available as Commercial Steel (CS), Drawing Steel (DS), Deep Drawing Steel (DDS), Extra-Deep Drawing Steel (EDDS), Structural Steel (SS), or High-Strength Low-Alloy Steel (HSLAS), or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F).

1.4 The values stated in SI units are to be regarded as the standard.

2. Referenced Documents

2.1 ASTM Standards:

A 754/A 754M Test Method for Coating Weight [Mass] by

X-Ray Fluorescence²

A 917 Specification for Steel Sheet, Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface (General Requirements)²

E 1659 Test Methods for Chemical Analysis of Zinc-Nickel Alloy Electrolytically Coated on Steel Sheet³

3. Classification

3.1 Coatings shall be designated as in Specification A 917. The letter N shall be used to designate zinc-nickel coatings.

4. Ordering Information

4.1 Orders for products to this specification shall include the following information, as necessary to adequately describe the desired product:

4.1.1 Name of product (electrolytic zinc-nickel alloy-coated steel sheet).

4.1.2 ASTM designation and year of issue.

4.1.3 Base metal type (hot rolled or cold rolled).

4.1.4 Base metal designation {Commercial Steel (CS), Drawing Steel (DS), Deep Drawing Steel (DDS), Extra-Deep Drawing Steel (EDDS), High-Strength Low-Alloy Steel (HSLAS), or High-Strength Low-Alloy with Improved Formability (HSLAS-F)}.

4.1.5 Formability type, strength, grade, or class, or combination thereof, as required for structural or high-strength low-alloy steels.

4.1.6 Coating designation (see 3.1).

4.1.7 Surface treatments required (see Note 1).

NOTE 1—Steel sheet is available without surface treatment (dry) or with surface treatments designated as chemical treatment, oiled, or phosphatized. Unless otherwise specified sheet is furnished oiled.

4.1.8 Dimensions (show thickness (minimum or nominal), width, and length, if cut lengths).

4.1.9 Coil size (must include inside diameter, outside diameter, and maximum coil weight).

4.1.10 Application (part name and description).

4.1.11 Special requirements, if applicable.

¹ This specification is under the jurisdiction of ASTM Committee A05 on Metallic Coated Iron and Steel Products and is the direct responsibility of Subcommittee A05.11 on Sheet Specifications.

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² Annual Book of ASTM Standards, Vol 01.06.

³ Annual Book of ASTM Standards, Vol 03.06.