



Designation: A 1008/A 1008M – 00

Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability¹

This standard is issued under the fixed designation A 1008/A 1008M; 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 cold rolled structural, high-strength low-alloy, and high-strength low-alloy with improved formability steel sheet, in coils and cut lengths.

1.2 Cold rolled steel sheet is available in the designations as listed in 4.1.

1.3 This specification does not apply to steel strip as described in Specification A 109.

1.4 The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other.

2. Referenced Documents

2.1 ASTM Standards:

A 109 Specification for Steel, Strip, Carbon, Cold Rolled²

A 366/A 366M Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality³

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 568/A 568M Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot Rolled and Cold Rolled, General Requirements for²

A 620/A 620M Specification for Steel, Sheet, Carbon, Drawing Quality, Special Killed, Cold-Rolled³

A 941 Terminology Relating to Steel, Stainless, Related Alloys, and Ferroalloys⁴

E 517 Test Method for Plastic Strain Ratio⁵

E 646 Test Method for Tensile Strain-Hardening Exponents⁵

3. Terminology

3.1 Definitions:

3.1.1 For definitions of other terms used in this specifica-

tion, refer to Terminology A 941.

3.1.2 *stabilization*—The addition of one or more nitride or carbide forming elements, or both, such as titanium and columbium, to control the level of the interstitial elements of carbon and nitrogen in the steel.

3.1.2.1 *Discussion*—Stabilizing improves formability and increases resistance to aging.

3.1.3 *vacuum degassing*—a process of refining liquid steel in which the liquid is exposed to a vacuum as part of a special technique for removing impurities or for decarburizing the steel.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *aging*—loss of ductility with an increase in hardness, yield strength, and tensile strength that occurs when steel, which has been slightly cold worked (such as by temper rolling) and is stored for some time.

3.2.1.1 *Discussion*—Aging increases the tendency of a steel to exhibit stretcher strains and fluting.

4. Classification

4.1 Cold Rolled steel sheet is available in the following designations:

4.1.1 Commercial Steel (CS Types A, B, and C),

4.1.2 Drawing Steel (DS Types A and B),

NOTE 1—CS Type B and DS Type B describe the most common product previously included, respectively, in Specifications A 366/A 366M and A 620/A 620M.

4.1.3 Deep Drawing Steel (DDS),

4.1.4 Extra Deep Drawing Steel (EDDS),

4.1.5 Structural Steel (SS grades 25[170], 30[205], 33[230] Types 1 and 2, 40[275] Types 1 and 2, and 80[550]),

4.1.6 High-Strength Low-Alloy Steel (HSLAS, in classes 1 and 2, in grades 45[310], 50[340], 55[380], 60[410], 65[450], and 70[480] in Classes 1 and 2), and

4.1.7 High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F grades 50[340], 60[410], 70[480], and 80[550]).

4.1.7.1 HSLAS-F steel has improved formability when compared to HSLAS. The steel is fully deoxidized, made to fine grain practice and includes microalloying elements such as columbium, vanadium, zirconium, etc. The steel may be treated to achieve inclusion control.

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 A01.19 on Steel Sheet and Strip.

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² Annual Book of ASTM Standards, Vol 01.03.

³ Discontinued; see 2000 Annual Book of ASTM Standards, Vol 01.03.

⁴ Annual Book of ASTM Standards, Vol 01.01.

⁵ Annual Book of ASTM Standards, Vol 03.01.