Designation: A 99 – 82 (Reapproved 2000)

Standard Specification for Ferromanganese[1]

This standard is issued under the fixed designation A 99; 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. This specification replaces Federal Specification QQ-F-145.

1. Scope

1.1 This specification covers ten grades of ferromanganese, designated as follows:

Standard ferromanganese	Grade A
	Grade B
	Grade C
Medium-carbon ferromanganese	Grades A,B,C, and D
	Nitrided
Low-carbon ferromanganese	Grade A
	Grade B

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

E 11 Specification for Wire-Cloth Sieves for Testing Purposes[2]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[2]

E 31 Methods for Chemical Analysis of Ferroalloys[3]

E 32 Practices for Sampling Ferroalloys and Steel Additives for Determination of Chemical Composition[3]

3. Basis of Purchase

3.1 Orders for material under this specification shall include the following information:

3.1.1 Quantity,

3.1.2 Name of material,

3.1.3 ASTM Designation: A 99,

3.1.4 Grade,

3.1.5 Size, and

3.1.6 Requirements for packing, analysis reports, etc., as appropriate.

3.2 The customary basis of payment for standard ferromanganese is per pound of ferroalloy, rather than per pound of contained managanese. Although low- and medium-carbon ferromanganese are ordered by total net weight, the customary basis of payment is per pound of contained manganese.

NOTE 1—The term "weight" is temporarily used in this specification because of established trade usage. The word is used to mean both "force" and "mass," and care must be taken to determine which is meant in each case (SI unit for force = newton and for mass = kilogram).

4. Chemical Composition

4.1 The material shall conform to the requirements as to chemical composition specified in Table 1 and Table 2.

4.2 The manufacturer shall furnish an analysis of each shipment showing the manganese, carbon, and silicon content and, when required, such of the other elements specified in Table 1.

4.3 The values shown in Table 2 are expected maximums. Upon request by the purchaser, the manufacturer shall furnish an analysis for any of these elements on a cumulative basis over a period mutually agreed upon by the manufacturer and the purchaser.

5. Size

5.1 The various grades are available in sizes as listed in Table 3.

5.2 The sizes and friability ratings listed in Table 3 are typical as shipped from the manufacturer's plant. These alloys exhibit varying degrees of friability; therefore, some attrition may be expected in transit, storage, and handling. A code system has been developed. Therefore, for this purpose, a number rating for each product type is shown in the last column of Table 3. Definitions applicable to these code numbers are given in Appendix X1.

6. Sampling

6.1 The material shall be sampled in accordance with Practices E 32.

[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 A01.18 on Castings.

Current edition approved July 30, 1982. Published September 1982. Originally published as A 99 – 25 T. Last previous edition A 99 – 76.

[2] *Annual Book of ASTM Standards*, Vol 14.02.

[3] *Annual Book of ASTM Standards*, Vol 03.05.