



Designation: A482/A482M – 11 (Reapproved 2021)

## Standard Specification for Ferrochrome-Silicon<sup>1</sup>

This standard is issued under the fixed designation A482/A482M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers several grades of ferrochrome-silicon.

1.2 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.2.1 This specification is expressed in both inch-pound units and in SI units; however, unless the purchase order or contract specifies the applicable M specification designation (SI units), the inch-pound units shall apply.

1.2.2 Within the text, the SI units are shown in brackets.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[A1025/A1025M Specification for Ferrous Alloys and Other Alloying Materials, General Requirements](#)

[E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves](#)

[E364 Test Methods for Chemical Analysis of Ferrochrome-Silicon \(Withdrawn 2006\)](#)<sup>3</sup>

### 3. General Conditions for Delivery

3.1 Materials furnished to this specification shall conform to the requirements of Specification [A1025/A1025M](#), including

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.18 on Castings.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

any supplementary requirements that are indicated in the purchase order. Failure to comply with the general requirements of Specification [A1025/A1025M](#) constitutes nonconformance with this specification. In case of conflict between the requirements of this specification and Specification [A1025/A1025M](#), this specification shall prevail.

### 4. Chemical Composition

4.1 The various grades shall conform to the requirements as to chemical composition specified in [Tables 1 and 2](#).

4.2 The manufacturer shall furnish an analysis of each shipment showing the percentage of each element specified in [Table 1](#).

4.3 The values shown in [Table 2](#) are expected maximums. Upon request of the purchaser, the manufacturer shall furnish an analysis for any of these elements on a cumulative basis over a period mutually agreed upon between 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 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 quantitative test is not available for rating relative friability of ferrous alloys. A code system has been developed, therefore, for this purpose, and a number rating each product type is shown in the last column of [Table 3](#). Definitions applicable to these code numbers are given in Specification [A1025/A1025M](#).

### 6. Chemical Analysis

6.1 The chemical analysis of the material shall be made in accordance with the procedure for the ferrous alloys as described in Test Methods [E364](#), or alternative methods, agreed upon by the purchaser and supplier, that will yield equivalent results.

6.2 If alternative methods of analysis are used, in case of discrepancy, Test Methods [E364](#) shall be used for reference.

6.3 Where a method is not given in Test Methods [E364](#) for the analysis of a particular element, the analysis shall be made

**TABLE 1 Chemical Requirements**

Element	Composition, %	
	Grade A	Grade B
Chromium	34.0–38.0	38.0–42.0
Carbon, max	0.060	0.050
Silicon	38.0–42.0	41.0–45.0
Sulfur, max	0.030	0.030
Phosphorus, max	0.030	0.030

**TABLE 2 Supplementary Chemical Requirements**

Element	Composition, max, percent Ferrochrome-Silicon (Grades A and B)
Nitrogen	0.050
Manganese	0.75
Nickel	0.50
Vanadium	0.50
Copper	0.050
Molybdenum	0.050
Columbium	0.050
Tantalum	0.050
Cobalt	0.10
Aluminum	0.50
Titanium	0.50
Zirconium	0.050
Arsenic	0.005
Lead	0.005
Tin	0.005
Zinc	0.005
Boron	0.005
Antimony	0.005
Silver	0.005
Bismuth	0.005

in accordance with a procedure agreed upon between the manufacturer and the purchaser.

## 7. Keywords

7.1 ferrochrome; ferrochrome silicon

**TABLE 3 Standard Sizes and Tolerances**

Product	Standard Sizes	Tolerances <sup>A</sup>		
Ferrochrome-Silicon	75 lb [35 kg] by down	Maximum lump weight—90 lb [40 kg] The maximum allowed proportion of lump weight >75 lb [35 kg] is 10 %		
	75 lb [35 kg] by 1 in. [25 mm]	Maximum lump weight—90 lb [40 kg]	Maximum allowed weight passing 1-in. [25 mm] sieve is 10 % of the total weight	
	75 lb [35 kg] by 2 in. [50 mm]	Maximum lump weight—90 lb [40 kg]	Maximum allowed weight passing 2-in. [50 mm] sieve is 10 % of the total weight	
	40 lb [18 kg] by down	Maximum lump weight—50 lb [23 kg]		
	25 lb [10 kg] by down	Maximum lump weight—30 lb [14 kg]		
	4 in. [100 mm] by down	10 % Maximum weight retained on 4-in. [100 mm] sieve is 10 % of the total weight		
	3 in. [75 mm] by down	Maximum weight retained on 3-in. [75 mm] sieve is 10 % of the total weight		
	3 by 1/2 in. [75 by 15 mm]	Maximum weight retained on 3-in. [75 mm] sieve is 10% of the total weight	Maximum allowed weight passing 1/2 in. [15 mm] sieve is 10 % of the total weight	
	2 in. [50 mm] by down	Maximum weight retained on 2-in. [50 mm] sieve is 10 % of the total weight		
	2 by 1/4 in. [50 by 5 mm]	Maximum weight retained on 2-in. [50 mm] sieve is 10 % of the total weight	Maximum allowed weight passing 1/4 in. [5 mm] sieve is 10 % of the total weight	
	3/4 in. [20 mm] by down	Maximum weight retained on 3/4 in. [20 mm] sieve is 10 % of the total weight		

<sup>A</sup> Specifications of sieve sizes used to define tolerances herein are as listed in Specification E11.

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