Designation: A 835/A 835M – 84 (Reapproved 2005)

Standard Specification for Sizes of Ferroalloys and Alloy Additives[1]

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1. Scope

1.1 This specification covers standard nominal sizes and size tolerances of screened ferroalloy and alloy additive products. This specification provides a range of sizes as referenced in all ASTM specifications for ferroalloys and alloy additives.

1.2 The sizes and tolerances allow for varying degrees of friability upon receipt of material since some attrition may be expected in transit, storage, and handling.

1.3 Specifications of sieve sizes used to define tolerances are listed in Specification E 11. Representative procedures for evaluation of each lot are described in Methods A 610. Refer to Appendix X1 for applicable sieve designations (see Table X1.1).

2. Referenced Documents

2.1 *ASTM Standards:* [2]

A 610 Test Methods for Sampling and Testing Ferroalloys for Determination of Size

E 11 Specification for Wire Cloth and Sieves for Testing Purposes

3. Dimensional Requirements

3.1 Screened products shall conform to the sizes given in Table 1.

3.1.1 The sizes listed in Table 1 are typical as shipped from the manufacturer's plant. Ferroalloys 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 ferroalloys. A code system has been developed, therefore, for this purpose, and a number rating each product type is given.

NOTE 1—For further description of friability ratings for ferroalloys, refer to Appendix X2.

TABLE 1 Requirements for Screened Products[A]

Nominal Size, in.	Standard Ordered Size, in.[B]	Maximum Allowable Oversize		Maximum Allowable Undersize		Friability Rating Code No.[C]
		Size	Percent	Size	Percent	
Lump to Crushed Sizes:						
6	8 by 4	to 10 in.	10 %	through 4 in.	10 %	1–6
5	8 by 2	to 10 in.	10 %	through 2 in.	10 %	1–6
4	6 by 2	to 8 in.	10 %	through 2 in.	10 %	1–6
3½	5 by 2	to 7 in.	10 %	through 2 in.	10 %	1–6
3 (A)	5 by 1	to 7 in.	10 %	through 1 in.	10 %	1–6
3 (B)	4 by 2	to 6 in.	10 %	through 2 in.	10 %	1–6
2½	4 by 1	to 6 in.	10 %	through 1 in.	10 %	1–6
2¼	4 by ½	to 5 in.	10 %	through ½ in.	10 %	1–6
2	3 by 1	to 4 in.	10 %	through 1 in.	10 %	1–6
1½	3 by ½	to 4 in.	10 %	through ½ in.	10 %	1–6
1¼	2 by ½	to 3 in.	10 %	through ½ in.	10 %	1–6
1⅛	2 by ¼	to 3 in.	10 %	through ¼ in.	10 %	1–6
Small Crushed Sizes by Down:						
2	4 by D	to 5 in.	10 %	through ½ in.	15 %	1–6
1½	3 by D	to 4 in.	10 %	through ⅛ in.	15 %	1–6
1	2 by D	to 3 in.	10 %	through ⅛ in.	15 %	1–4
		to 3 in.	8 %	through No. 8	20 %	5,6
½	1 by D	to 1½ in.	10 %	through No. 16	15 %	1–4
		to 1½ in.	8 %	through No. 20	15 %	5,6
¼	½ by D	to ¾ in.	10 %	through No. 20	15 %	1–4
		to ¾ in.	8 %	through No. 70	20 %	5,6

[A] For screened products below ½ in. by down-crushed sizes, size tolerances should be agreed upon between manufacturer and purchaser.
[B] 1 in. = 25.4 mm.
[C] See Appendix X2 for description of rating code.

[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 A01.18 on Castings.

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

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APPENDIXES

(Nonmandatory Information)

X1. APPLICABLE SIEVE DESIGNATIONS

TABLE X1.1 Sieve Designation

Standard	Alternative
250 mm	10 in.
200 mm	8 in.
175 mm	7 in.
150 mm	6 in.
125 mm	5 in.
100 mm	4 in.
75 mm	3 in.
50 mm	2 in.
25 mm	1 in.
19 mm	¾ in.
12.5 mm	½ in.
6.3 mm	¼ in.
3.1 mm	⅛ in.
2.36 mm	No. 8
1.18 mm	No. 16
850 µm[A]	No. 20
212 µm	No. 70

[A] 1000 µm = 1 mm.

X2. FRIABILITY RATINGS OF FERROALLOYS

X2.1 Descriptions of material of each friability rating are given in Table X2.1.

TABLE X2.1 Friability Ratings of Ferroalloys

Friability Code No.	Description
1	Very tough materials which are susceptible to little, if any, breakage during shipment or handling. (Example: low-carbon ferrochrome)
2	Some breakage of large pieces probable in shipping and handling. No appreciable fines produced from either lump or crushed sizes. (Example: chrome metal)
3	Appreciable reduction in size of large pieces possible in shipping and handling. No appreciable production of fines in handling of crushed sizes. (Example: ferrotitanium)
4	Appreciable reduction in size of large pieces upon repeated handling. Some fines produced upon repeated handling of crushed sizes. (Example: standard ferromanganese)
5	Appreciable reduction in size in repeated handling of large pieces. Appreciable fines may be produced in the handling of crushed sizes. (Example: 50 % ferrosilicon)
6	This category represents the most friable alloys. (Example: calcium silicon)

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