



Standard Test Methods for Municipal Ferrous Scrap¹

This standard is issued under the fixed designation E 701; 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 These test methods cover various tests for assessing the usefulness of a ferrous fraction recovered from municipal wastes.

1.2 These test methods comprise both chemical and physical tests, as follows:

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Sampling	5
Bulk Density	6
Total Combustibles	7
Chemical Analysis (for Industries Other Than the Detinning Industry)	8
Magnetic Fraction (for the Detinning Industry)	9
Chemical Analysis for Tin (for the Detinning Industry)	10
Metallic Yield for All Industries Other Than the Copper Industry and the Detinning Industry	11

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

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- C 29 Test Method for Unit Weight and Voids in Aggregate²
- C 702 Practice for Reducing Field Samples of Aggregate to Testing Size²
- D 2234 Test Methods for Collection of a Gross Sample of Coal³
- E 30 Test Methods for Chemical Analysis of Steel, Cast Iron, Open-Hearth Iron, and Wrought Iron⁴
- E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process⁵
- E 350 Test Methods for Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron⁴

¹ These test methods are under the jurisdiction of ASTM Committee D-34 on Waste Management and are the direct responsibility of Subcommittee D34.06 on Recovery and Reuse.

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² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 05.05.

⁴ Annual Book of ASTM Standards, Vol 03.05.

⁵ Annual Book of ASTM Standards, Vol 14.02.

E 351 Test Methods for Chemical Analysis of Cast Iron—All Types⁴

E 415 Test Method for Optical Emission Vacuum Spectrometric Analysis of Carbon and Low-Alloy Steel⁶

E 702 Specification for Municipal Ferrous Scrap⁷

3. Significance and Use

3.1 The establishment of these test methods for municipal ferrous scrap as a raw material for certain industries (see Specification E 702) will aid commerce in such scrap by providing the chemical and physical tests for the characterization of the scrap needed as a basis for communication between the purchaser and supplier.

4. Hazards

4.1 Due to the origins of municipal ferrous scrap in waste destined for disposal, common sense dictates that some precautions should be observed when conducting tests on the samples. Recommended hygienic practices include using gloves when handling municipal ferrous scrap and washing hands before eating or smoking.

5. Sampling

5.1 Gross Sample of Loose Ferrous Scrap:

5.1.1 Take a minimum of one gross sample having a volume of 7 ft³ (0.2 m³) (approximately equal to a 55-gal drum). Guidance for determining the number of gross samples needed to characterize a given lot of material and methods for accumulating a gross sample can be found in Practice E 122 and Test Method D 2234, respectively. In all cases, the actual sampling procedures to be used and the number of gross samples required to obtain a representative sample of the lot shall be established in accordance with an agreement between the purchaser and supplier.

5.1.2 Air-dry the gross sample at ambient temperature for a period of 24 h by spreading the sample on a clean, dry surface to one-layer thickness. Protect the sample from contamination by falling dust and debris. Reduce the gross sample to four samples by the method of coning and quartering, as described in Method B of Practice C 702.

5.2 *Gross Sample of Baled Ferrous Scrap*—Take a minimum of two bales. Guidance for determining the number of bales needed to characterize a given lot of material and

⁶ Annual Book of ASTM Standards, Vol 03.06.

⁷ Annual Book of ASTM Standards, Vol 11.04.