



Designation: E 790 – 87 (Reapproved 2004)

Standard Test Method for Residual Moisture in a Refuse-Derived Fuel Analysis Sample¹

This standard is issued under the fixed designation E 790; 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 test method covers the measurement of the residual moisture in an analysis sample of RDF. It is used to calculate to the dry basis other determinations performed on the analysis sample. It is used with the air-dry moisture results to calculate total moisture (Note 1). The total moisture is used to calculate as-received values or other analyses performed on the sample.

NOTE 1—In some instances RDF moisture may change during the size-reduction steps of the analysis sample preparation procedure. This moisture change, unless suitable corrections are made, will affect the accuracy of the total moisture value as calculated from the air-dry and residual moisture results.

1.2 The values stated in acceptable metric units are to be regarded as standard. The values given in parentheses are for information only.

1.3 *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.* For more specific precautionary information see Section 7.

2. Referenced Documents

2.1 *ASTM Standards:*²

D 3173 Test Method for Moisture in the Analysis Sample of Coal and Coke

E 180 Practice for Developing Precision of ASTM Methods for Analysis and Testing of Industrial Chemicals

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *air drying*—a process of partial drying of RDF to bring its moisture content near to equilibrium with the atmo-

sphere in which further reduction, division, and characterization of the sample are to take place. In order to bring about the equilibrium, the RDF is usually subjected to drying under controlled temperature conditions ranging from 30 to 40°C.

3.1.2 *analysis sample*—the final subsample prepared from the air-dried laboratory sample but reduced by passing through a mill with a 0.5-mm (0.02-in.) size or smaller final screen.

3.1.3 *bias*—a systematic error that is consistently negative or consistently positive. The mean of errors resulting from a series of observations that does not tend towards zero.

3.1.4 *gross sample*—a sample representing one lot and composed of a number of increments on which neither reduction nor division has been performed.

3.1.5 *laboratory sample*—a representative portion of the gross sample received by the laboratory for analysis.

3.1.6 *lot*—a large designated quantity (greater than the quantity of the final sample) of RDF which can be represented by a properly selected gross sample.

3.1.7 *precision*—a term used to indicate the capability of a person, an instrument, or a method to obtain reproducible results; specifically, a measure of the random error as expressed by the variance, the standard error, or a multiple of the standard error.

3.1.8 *refuse-derived fuels*—solid forms of refuse-derived fuels from which appropriate analytical samples may be prepared are defined as follows in *ASTM STP 832*.³

RDF-1—Wastes used as a fuel in as-discarded form with only bulky wastes removed.

RDF-2—Wastes processed to coarse particle size with or without ferrous metal separation.

RDF-3—Combustible waste fraction processed to particle sizes, 95 % passing 2-in. square screening.

RDF-4—Combustible waste fraction processed into powder form, 95 % passing 10-mesh screening.

RDF-5—Combustible waste fraction densified (compressed) into the form of pellets, slugs, cubettes, or briquettes.

3.1.9 *representative sample*—a sample collected in such a manner that it has characteristics equivalent to the lot sample.

¹ This test method is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.03.02 on Municipal Recovery and Reuse.

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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.

³ *Thesaurus on Resource Recovery Terminology, ASTM STP 832, ASTM, 1983, p. 72.*