



Designation: E790 – 08

# Standard Test Method for Residual Moisture in a Refuse-Derived Fuel Analysis Sample<sup>1</sup>

This standard is issued under the fixed designation E790; 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 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 SI units are to be regarded as standard. No other units of measurement are included in this standard.

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*:<sup>2</sup>

**D3173** Test Method for Moisture in the Analysis Sample of Coal and Coke

**D5681** Terminology for Waste and Waste Management

**E180** Practice for Determining the Precision of ASTM Methods for Analysis and Testing of Industrial and Specialty Chemicals (Withdrawn 2009)<sup>3</sup>

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.03 on Treatment, Recovery and Reuse.

Current edition approved Sept. 1, 2008. Published October 2008. Originally approved in 1981. Last previous edition approved in 2004 as E790 – 87(2004). DOI: 10.1520/E0790-08.

<sup>2</sup> 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.

<sup>3</sup> The last approved version of this historical standard is referenced on www.astm.org.

## 3. Terminology

3.1 For definitions of terms used in this test method, refer to Terminology **D5681**.

## 4. Summary of Test Method

4.1 This test method is based on the loss in weight of an air-dried analysis sample of RDF under rigidly controlled conditions of temperature, time, and air flow.

4.2 The total moisture is calculated from the loss or gain in air drying and the residual moisture as determined by this test method.

## 5. Significance and Use

5.1 The treatment of the sample as specified herein is intended for the purpose of determining the residual moisture present in an analysis sample of RDF.

5.2 The residual moisture value is used to convert as-determined analyses such as gross heating value, sulfur, and ash to a dry sample basis.

## 6. Apparatus

### 6.1 Drying Oven:

6.1.1 *Referee Type*—The oven shall be so constructed as to have a uniform temperature within the specimen chamber, have a minimum excess air volume, and be capable of constant temperature regulation at  $107 \pm 3^\circ\text{C}$ . Provision shall be made for renewing the preheated air in the oven at the rate of two to four times a minute, with the intake air dried by passing it through a desiccant. An oven similar to the one illustrated in Fig. 1 of Test Method **D3173** is suitable.

6.1.2 *Routine Type*—A drying oven of either the mechanical or natural circulation type which is capable of constant uniform temperature within the specimen chamber regulated at  $107 \pm 3^\circ\text{C}$ .

NOTE 2—Either type of oven may be used for routine determinations. However, the referee-type oven shall be used to resolve differences between determinations.

6.2 *Containers*—A convenient form that allows the ash determination to be made on the same sample is a porcelain capsule 22 mm in depth and 44 mm in diameter or a fused silica capsule of similar shape. This shall be used with a