



Designation: D2584 – 08

Standard Test Method for Ignition Loss of Cured Reinforced Resins¹

This standard is issued under the fixed designation D2584; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the determination of the ignition loss of cured reinforced resins. This ignition loss can be considered to be the resin content within the limitations of 4.2.

1.2 The values stated in SI units are to be regarded as the 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 whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 *ASTM Standards:*²

D618 Practice for Conditioning Plastics for Testing

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

3. Summary of Test Method

3.1 The specimen contained in a crucible is ignited and allowed to burn until only ash and carbon remain. The carbonaceous residue is reduced to an ash by heating in a muffle furnace at 565°C (1050°F), cooled in a desiccator, and weighed.

4. Significance and Use

4.1 This test method can be used to obtain the ignition loss of a cured reinforced resin sample. This test method can also be used to examine the fiber architecture of pultruded structural shapes.

¹ This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

Current edition approved May 1, 2008. Published June 2008. Originally approved in 1967. Last previous edition approved in 2002 as D2584 - 02. DOI: 10.1520/D2584-08.

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.

4.2 If only glass fabric or filament is used as the reinforcement of an organic resin that is completely decomposed to volatile materials under the conditions of this test and the small amount of volatiles (water, residual solvent) that may be present is ignored, the ignition loss can be considered to be the resin content of the sample.

4.2.1 This test method does not provide a measure of resin content for samples containing reinforcing materials that lose weight under the conditions of the test or containing resins or fillers that do not decompose to volatile materials released by ignition.

5. Apparatus

5.1 *Crucible*, platinum or porcelain, approximately 30-mL capacity.

5.2 *Electric Muffle Furnace*, capable of maintaining a temperature of 565 ± 28°C (1050 ± 50°F).

6. Test Specimen

6.1 A minimum of three specimens shall be tested for each sample.

NOTE 2—It is often convenient to use samples obtained from specimens that have been tested for mechanical properties such as flexural or tensile strength. Specimens obtained from these samples must be dry and the fractured areas removed, leaving square, unfrayed faces, before being weighed and ignited.

6.2 The specimen shall weigh approximately 5 g with a maximum size of 2.5 by 2.5 cm by thickness (1 by 1 in. by thickness).

NOTE 3—Materials that have gross differences in the ratio of resin to reinforcement within an area as small as 2.5 by 2.5 cm (1 by 1 in.) may require a larger specimen area than that listed in 6.2. If larger specimens are utilized, it will be necessary to cut into approximately 2.5 by 2.5-cm (1 by 1-in.) pieces and place in a crucible of sufficient size to contain the specimen.

7. Conditioning

7.1 *Conditioning*—Condition the test specimens at 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 5 % relative humidity for not less than 40 h prior to test in accordance with Procedure A of Practice D618 for those tests where conditioning is required. In cases of disagreement, the tolerances shall be ± 1°C (± 1.8°F)