



Designation: D3769 – 05

Standard Test Method for Microcellular Urethanes—High-Temperature Sag¹

This standard is issued under the fixed designation D3769; 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 procedure and apparatus for measuring high-temperature sag of microcellular urethane materials.

1.2 The values stated in SI units are to be regarded as 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.*

NOTE 1—There is no similar or equivalent ISO standard to this test method.

2. Referenced Documents

2.1 *ASTM Standards:*²

D3040 Practice for Preparing Precision Statements for Standards Related to Rubber and Rubber Testing³

E145 Specification for Gravity-Convection and Forced-Ventilation Ovens

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

3. Significance and Use

3.1 This test method is used to indicate the deformation tendency of microcellular materials that may occur during paint application in an assembly plant operation. Since a standard specimen is used, heat sag measurements cannot be assumed to be exactly those which will occur on a part during or after the paint application and baking operation of an assembly process.

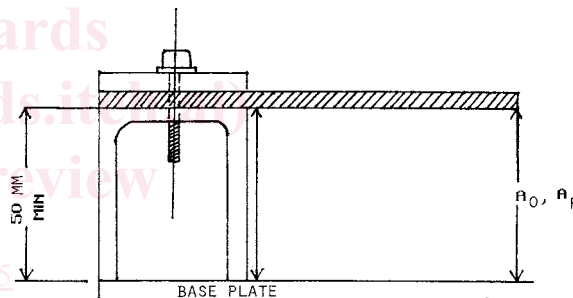
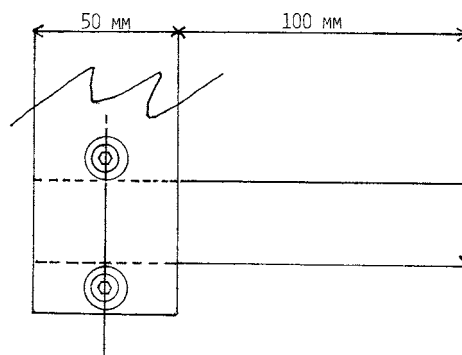
3.2 Before proceeding with this test method, reference should be made to the specification of the material being tested. Any test specimen preparation, conditioning, or dimensions, or

¹ This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.22 on Cellular Materials - Plastics and Elastomers.

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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 Withdrawn



NOTE 1—Not to scale.

FIG. 1 Fixture for High-Temperature Sag

combination thereof, and testing parameters covered in the materials specification shall take precedence over those mentioned in these test methods. If there are no material specifications, then the default conditions apply.

NOTE 2—This test method is applicable to solid urethanes.

4. Apparatus

4.1 *Test Fixture*, capable of holding the specimens in a fixed cantilever position for the duration of the entire test procedure. The test fixture shall be constructed from a material such as aluminum or steel that exhibits a low coefficient of linear thermal expansion and therefore allows the test fixture's height to be considered constant through the test. See Fig. 1.

4.2 *Oven*, conforming to the specifications for a Type IA laboratory oven in accordance with Specification E145.

4.3 *Scaled Rule*, accurate to 1 mm.

4.4 *Thickness Indicator*, accurate to 0.03 mm.

*A Summary of Changes section appears at the end of this standard.