



Designation: C 661 – 98

## Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer<sup>1</sup>

This standard is issued under the fixed designation C 661; 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.

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

### 1. Scope

1.1 This test method describes a laboratory procedure for determining indentation hardness of joint sealing compounds, (single- and multicomponent), intended for use in building construction.

1.2 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

1.3 *This standard does not purport to address 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 717 Terminology of Building Seals and Sealants<sup>2</sup>

D 2240 Test Method for Rubber Property—Durometer Hardness<sup>3</sup>

### 3. Terminology

3.1 *Definitions*—See Terminology C 717 for applicable definitions of the following terms: compound, elastomeric, hardness, joint, non-sag sealant, self-levling sealant.

### 4. Significance and Use

4.1 The results obtained by this test method are simply a measure of the indentation into the sealant material of the indenter under load; they are not generally considered a measure of abrasion or wear resistance of the sealant.

### 5. Apparatus

5.1 *Durometer, Type A-2*, with a dial graduated in units from 0 to 100. (See Test Method D 2240 for a description of the indenter and a method of calibration of the durometer.)

5.2 *Rectangular Brass Frame*, with inside dimensions 130 by 40 by 6 mm (approximately 5 by 1½ by ¼ in.).

5.3 *Aluminum Plates*, two 16 to 24 gage, 80 by 150 mm (approximately 3 by 6 in.).

5.4 *Thin-Bladed Knife*.

5.5 *Metal Straightedge*.

### 6. Standard Test Conditions

6.1 Unless otherwise specified by those authorizing the tests, standard conditions for test are room temperature:  $23 \pm 2^\circ\text{C}$  ( $73.4 \pm 3.6^\circ\text{F}$ ) and  $50 \pm 5\%$  relative humidity.

### 7. Procedure

7.1 *Test for Hardness of Multicomponent Sealants:*

7.1.1 Condition at least 250 g of base compound and appropriate amounts of curing agent for at least 24 h at standard conditions; then mix the components thoroughly for 5 min.

7.1.2 Fill the brass frame, after centering it on the aluminum plate, with a portion of the conditioned compound and strike it off flat with a metal straightedge. Lift the frame from the sealant after separating it by running a thin-bladed knife along the inside of the frame. Prepare two such specimens and cure them for 14 days at standard conditions.

NOTE 1—In the case of a self-leveling sealant or compound, do not lift the brass frame until the sealant is sufficiently cured so that it will not spread on the plate.

7.1.3 At the end of the curing period, take three hardness readings on each specimen at standard conditions. Hold the durometer on the surface of the specimen and press it firmly against the surface using a force of about 1.3 kgf (3 lbf). Keep the pressure foot parallel to the surface of the specimen. Take the instantaneous indentation reading immediately after making firm contact between the pressure foot and the specimen. After taking the first reading, shift the durometer (or specimen) to a new position in order to avoid errors due to fatigue and surface effects from the previous indentation. Take readings on smooth portions of the surface no closer than 13 mm (½ in.) from the edges of the sealant pat and also no closer than 25 mm (1 in.) from each other. Note the individual values, each rounded off to the nearest unit on the scale.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.20 on General Test Methods.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.07.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 09.01.