
Test Procedure for**CONE FLOW TEST**TxDOT Designation: **Tex-549-C****Effective Date: December 2011**

1. SCOPE

- 1.1 Use the following procedure to determine the ability of a freestanding molded cone of joint sealant, crack sealant, or concrete material to retain its shape.
 - 1.2 The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.
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2. APPARATUS

- 2.1 *Cone mold*, silicone rubber, cast using end cap (Figure 1) and cylinder molds (Figure 2) constructed of steel, aluminum, or other suitable material.
Note 1—Other materials may be used to produce a cone mold, provided that the resulting sample is a 60° cone 3.25 ± 0.1 in. (82.5 ± 2.5 mm) in height.
- 2.2 *Forced draft oven*, able to be maintained at $158 \pm 2^\circ\text{F}$ ($70 \pm 1^\circ\text{C}$) and at $176 \pm 2^\circ\text{F}$ ($80 \pm 1^\circ\text{C}$).
- 2.3 *Height measurement gauge*, accurate to ± 0.1 mm.
- 2.4 *Laboratory gas burner*, Fisher style.
- 2.5 *Spatula*, steel, 4 in. (100 mm) approximate blade width.

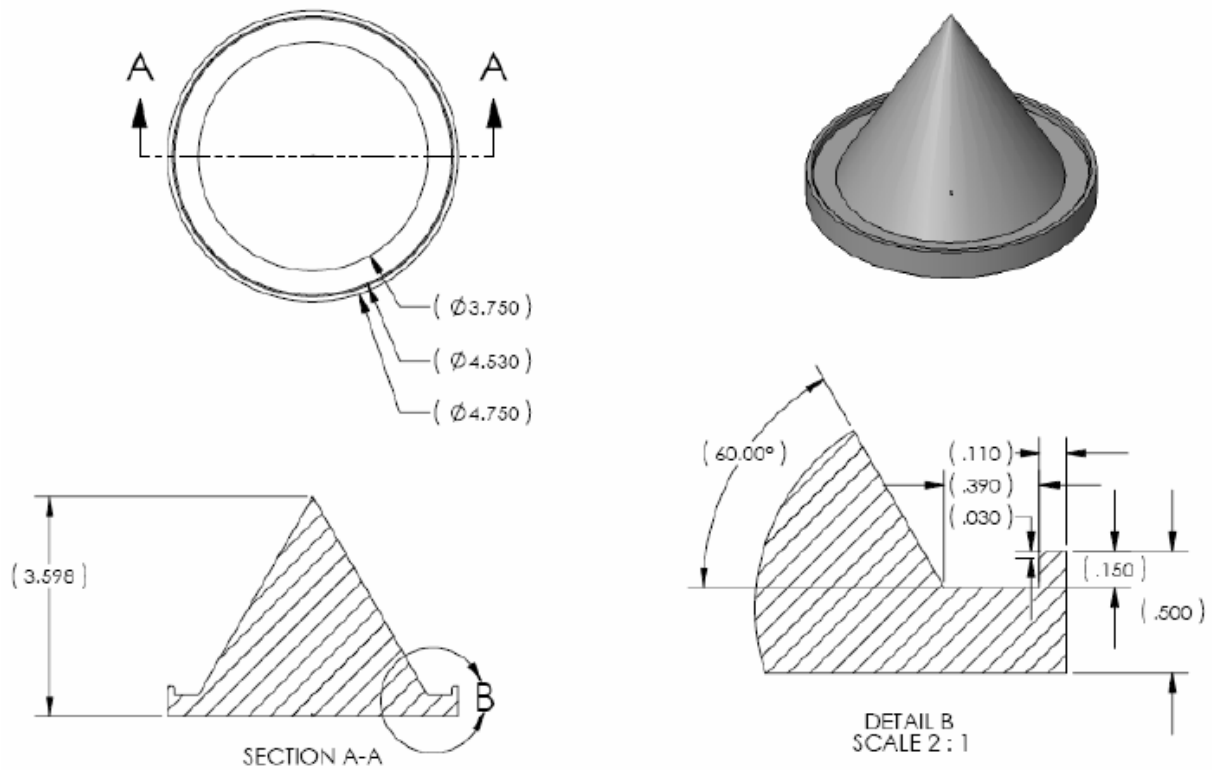


Figure 1—Cone Mold End Cap

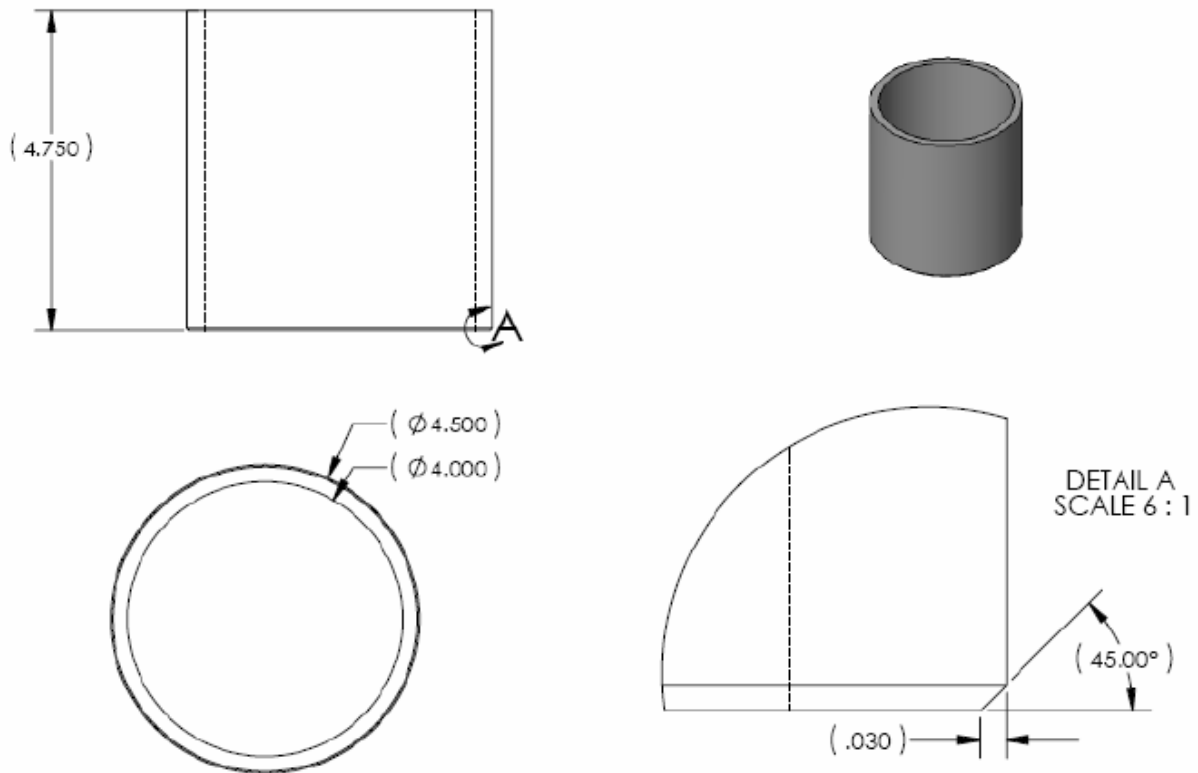


Figure 2—Cone Mold Cylinder

3. PROCEDURE

- 3.1 Cast a silicone rubber cone flow mold.
 - 3.1.1 Coat the inner surface of the cone mold cylinder and the cone shaped side of the cone mold end cap, including the recess into which the cone mold cylinder fits, with the release agent specified by the silicone rubber manufacturer.
 - 3.1.2 Place the end cap on a flat surface, cone side up, then lower the cylinder over the end cap and fit it snugly into the groove.
 - 3.1.3 Prepare a batch of silicone rubber mold making material in accordance with the manufacturer's specifications, and fill the assembled mold full to the top of the cylinder.
 - 3.1.4 Cure the silicone rubber in the mold for the manufacturer's allotted time, then remove the cone mold end cap and push out the silicone rubber cone flow mold.
- 3.2 Obtain and prepare a representative sample of material for testing in accordance with Tex-546-C.
- 3.3 Warm the fully cured silicone cone flow mold in the oven maintained at $176 \pm 2^{\circ}\text{F}$ ($80 \pm 1^{\circ}\text{C}$) for a minimum of 15 min.
- 3.4 Pour the heated sample material into the silicone cone flow mold. Pound the mold on the counter, material side up, to remove air bubbles and to help settle the material into the tip of the mold. Use the spatula, heated on the burner, to trim the material even with the open end of the mold if necessary.
- 3.5 Allow the material to cure in the mold at room temperature, $70\text{--}78^{\circ}\text{F}$ ($21\text{--}25^{\circ}\text{C}$), for a minimum of 24 hr.
- 3.6 Remove the sample from the mold and measure the sample height to the nearest 0.1 mm using the height gauge.
- 3.7 Heat the sample in the oven maintained at $158 \pm 2^{\circ}\text{F}$ ($70 \pm 1^{\circ}\text{C}$) for 3 hr. \pm 5 min.
- 3.8 Remove the sample from the oven and allow it to cool at room temperature, $70\text{--}78^{\circ}\text{F}$ ($21\text{--}25^{\circ}\text{C}$), for a minimum of 4 hr.
- 3.9 Measure the sample with the height gauge to the nearest 0.1 mm.
- 3.10 Calculate the flow as described in Section 4 and report to the nearest 1%.

4. CALCULATIONS

4.1 Calculate the percent flow:

$$F = \frac{(S - H)}{S} \times 100$$

Where:

S = Start height of sample, mm

H = Height after heating, mm

F = Flow, %.