

# SAE Inc. Standard No. 101

## Water Absorption of Latex-Based Products

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### ABSTRACT

This test method is used to evaluate the amount of water absorbed by SAE's latex-based products such as the ConduDisc, ConduFlow, and ConduForm. Samples are submerged in 25 °C water until they are fully saturated, at which point percentage weight gain is calculated.

### 1. EQUIPMENT REQUIRED

- 1.1 Electronic balance accurate to 0.01 g
- 1.2 Band saw
- 1.3 Tape measure or ruler
- 1.4 Programmable water bath

### 2. SAMPLE PREPARATION

- 2.1 Prepare the latex-based product for testing (i.e. ConduDisc, ConduFlow, etc.) and pour into a 4"x8" grey test cylinder coated with a thin layer of petroleum jelly, which will act as a mould release agent.
- 2.2 After one week remove the test sample from the cylinder and wipe the exterior of the sample with mineral spirits to remove any excess petroleum jelly, which will inhibit the cure.
- 2.3 Allow the sample to cure for an additional three weeks, four weeks total.
- 2.4 Using the band saw trim both ends of the test sample so that the surface is smooth and flat.
- 2.5 Then use the band saw to cut the cylinders into sections 1"-2" thick.
- 2.6 Label the samples accordingly.

### 3. TEST SETUP

- 3.1 Weigh each sample using an electronic balance accurate to +/- 0.01 g.
- 3.2 Record any notes about the physical appearance of the sample.
- 3.3 Fill the water bath with tap water and set the water temperature to 25 °C.
- 3.4 Once the water has reached the set temperature place the samples into the water bath and record the time.

### 4. PROCEDURE

- 4.1 Once a week remove the samples from the water bath.
- 4.2 Record the time the samples were tested, then calculate how long the samples have been immersed in the water bath and record.
- 4.3 Remove each sample and dry the surface.
- 4.4 Weigh each sample on the electronic balance.
- 4.5 Record the weights in grams and calculate the percentage weight gain using the following formula:

$$\text{Weight Gain (\%)} = \frac{[\text{New Weight (g)} - \text{Initial Weight (g)}]}{\text{Initial Weight (g)}} \times 100$$

- 4.6 Continue to record the weight of the samples every week until the weight of the sample changes by less than 0.1% in one week.

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