

TA-SF – Spreadability Fixture

The Spreadability Fixture measures relative spreadability by squeezing a sample between two matching cones. The sample is first loaded into a conical cup. During a test the cone shaped probe descends into the cup displacing most of the sample. It is imperative that the cup be aligned so it is centered under the probe.

Fixture Base Table (TA-BT-KIT)

The cup holder fixture replaces the insert in the fixture base table. The male cone probe attaches directly to the M6 thread in the probe shaft. For the most convenient use, the base table should be adjusted so that the length of the extension legs totals no more than 3 ½” (9 cm). Turn the base table upside down, remove the four Phillips head screws, and install the proper combination of extension legs to achieve the desired height. Place the fixture base table back onto the CT3, but leave the locking T-bolts loose until alignment is complete.



Install the Spreadability Cone Fixture

Attach the cone probe to the probe shaft and place the spreadability fixture cup holder into the base table. There are two thumbscrews on adjacent sides of the perimeter of the fixture base table. Alternately tighten both of them to lock the fixture insert into the base table. Place a cup into the cup holder, rotate the cup to be sure it is firmly seated, and then secure it with the locking thumbscrew. Tighten just enough to hold the cone in position. Some samples will be very sticky so when the probe retracts, the cone cup will be lifted out of the cup holder if this thumbscrew is not tight enough.



Alignment of the Base Table in Stand Alone Mode

The easiest way to align the conical cup under the cone probe in the standalone mode is by using the Tension test. Rotate the select scroll knob until Tension test appears on display.

Installation Instructions for Texture Accessory Part Number: TA-SF

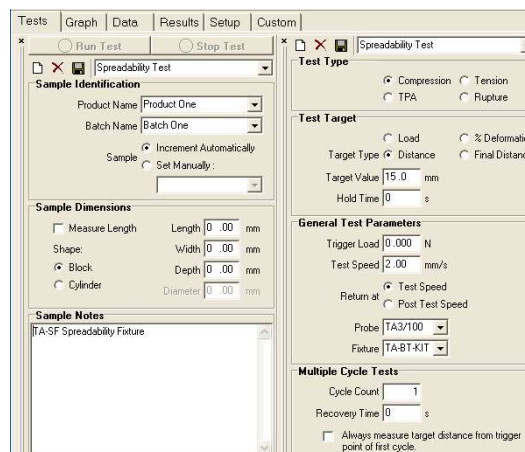
After depressing the start button two times, the select scroll knob can be used to lower the conical probe into the cup. Depressing and holding the Select/Scroll knob will continuously lower the probe, and rotating the Select/Scroll knob will lower the probe 1 mm for each click of the knob. Bring the probe down gradually so that the cone is centered in the cup, alternately adjusting the position of the cup and lowering the cone. The position of the probe shaft is shown on the CT3 display. The cone should be able to be lowered about 42 mm without making contact with the cup. Continuing to lower the cone in 1 mm increments will eventually result in bottoming out in the cup. When this happens, the probe shaft will return to the home position. Lock the base table by tightening the T-bolts. Alignment is now complete.

Use of the Spreadability Cone Fixture

When using the spreadability fixture, the conical sample cups should be filled with your sample material. When filling the cups, avoid entrapping air bubbles in the sample. Once the cup is full, level off even with the surface of the cup using a small spatula. The sample cups may now be placed into the fixture for testing. As is often the case, all five sample cups may be loaded in advance of any testing and may be conditioned in a refrigerator so that the sample reaches the appropriate temperature for testing.

The CT3 may be used in stand-alone mode for his accessory, but the most effective sample testing is done using the Texture Pro CT Software.

The probe starting position for this test should be where the tip of the cone probe just touches the surface of the sample in the sample cup. This can be done most accurately using Texture Pro CT software. When the fixture base table is set up with 3 ½” extension legs, the conical probe will just touch the surface of the sample when the shaft has been lowered about 22 mm from the home position. When using the Texture Pro CT Software, you can easily find this starting position using the Adjust Beam feature on the Test page. Once the sample is loaded and leveled even with the top of the cone, and the probe has been lowered to just touch the surface of the sample, the test should be set up as follows:



Installation Instructions for Texture Accessory Part Number: TA-SF

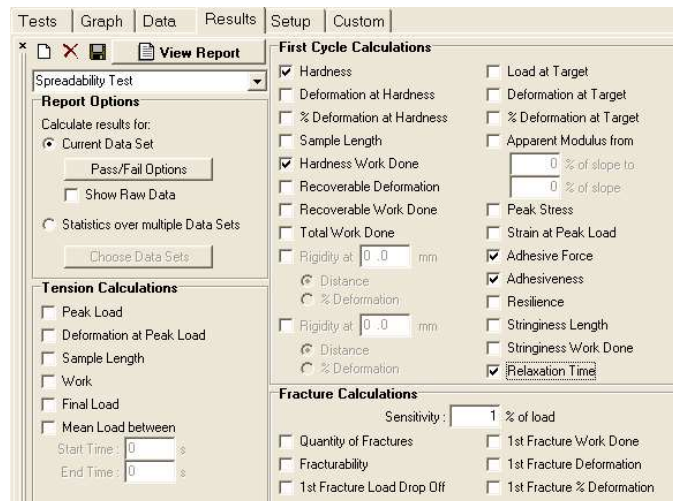
The cone probe can travel into the cup a maximum of 21 to 22 mm. At this point, there is only a very thin layer of sample material left between the surface of the cup and the surface of the cone. It is very rare for even the softest samples to be forced into a layer so thin without generating very high load forces. A common target distance for this test is 15 to 18 mm depending upon the firmness of the sample. We suggest starting with a target value of 15 mm.

Setting a Hold Time is optional. If a hold time is used, sample relaxation can be calculated from the drop in load force during the hold time. This is useful for some materials.

The Trigger Load should be set to “0” so the test will start as soon as the “Run-Test” button is depressed and the target deformation is measured from this position.

The test speed is arbitrary, the slowest test speed with the CT3 is .01 mm per second and the fastest speed is 10 mm per second. We suggest choosing a moderate speed between 1 and 5 mm per second until you establish the most effective test methodology for your application.

The Return Speed should be the same as the Test Speed so the probe will return at the same speed as it descends. This will allow Adhesive Force and Adhesiveness to be measured, which gives information about stickiness.



For further information, please see the application study of Moisturizing Cream Testing on our web site.

