

Test Method for Volumetrically Sizing Sheers & Tights

1. Purpose and Scope:

1.1. This test method is for the determination of Fit Properties in Pantyhose, Tights and other Sheer Hosiery products by use of volume measurements obtained from the TC² Size USA data. The method allows for confirming a maximum size range over a smooth surface.

2. Terminology

3. Safety Precautions

3.1. 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 to determine the applicability of regulatory limitations prior to use.

4. Summary of Test Method

4.1. Hosiery is sized on leg and panty volumetric forms, a maximum volume is determined and subsequent sizing charts are created with the volume data.

5. Significance and Use

5.1. The measurement of maximum volume in a hosiery garment is very complex.

5.2. The size/volume can be affected by knit construction, yarn type, opaqueness, and fabric finish.

6. Apparatus and Materials:

6.1. *Leg Volume Form*, (Figure 1)¹

6.1.1. *Small*

6.1.2. *Large*



*Figure 1
Large and
Small Leg
Forms*

6.2. *Panty Sizing Device*, (Figure 2)²



*Figure 2
Panty Sizing
Device*

7. Test Specimens

7.1. Sampling and Preparation

7.1.1. Each hosiery garment will be considered a specimen. Hosiery garments used as specimens should be representative of the production lot. When possible, three specimens should be used. One or two specimens may be

used when insufficient garments are available. This should be noted in the test report.

7.1.2. Prior to measuring, condition test specimens as directed in ASTM D 1776, Standard Practice for Conditioning and Testing Textiles. Condition each hosiery garment for at least 6 hours, in an atmosphere of $21 \pm 1^\circ\text{C}$ ($70 \pm 2^\circ\text{F}$) and $65 \pm 2\%$ Relative Humidity by laying each test specimen separately on a screen or perforated shelves of a conditioning rack.

8. Test Procedure:

8.1. Leg Forms

8.1.1. There are 2 types of leg forms. One for smaller and one for larger sizes of tights and pantyhose. In choosing the right one, try it on the small form first and if it goes to the bottom of the small form go to the larger form. Make sure to use the opposite leg of the pantyhose if the large form is used.

8.1.2. Table height is a critical part of leg form fit. Ensure that the height of the table holding the forms is adjusted for each operator's varying heights.

8.1.3. Leg Volume Procedure

8.1.3.1. Place the tight/pantyhose across the top of the form (Fig 3) and then pull the garment down until the run guard/ top part of the sheer part of the hose {this is the thinner part of the hose or right before the start of the panty of the pantyhose} is located at the sizing mark.



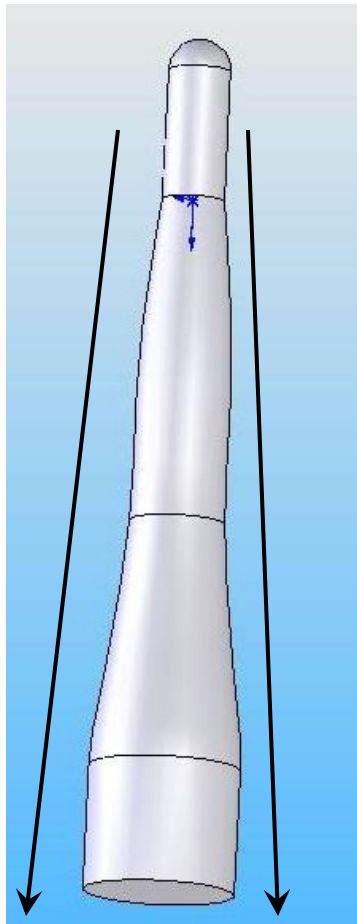


Figure 5

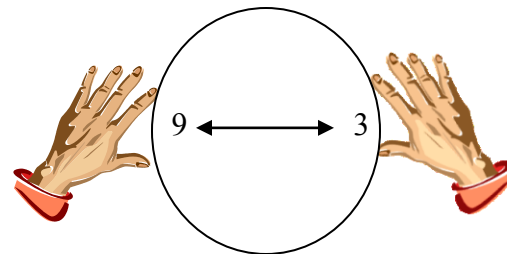


Figure 4

8.1.3.2. Facing the form, pretending as if the form were a clock, place one hand at the top of the form at 3 o'clock and one hand at the top of the form at 9 o'clock (Fig 4). Stretch the garment in one fluid motion, starting at the top of the form and going all the way to the bottom (Fig 5). Then rotate your hands to the 6 o'clock and 12 o'clock positions (Fig 6). Stretch the

garment in one fluid motion, starting at the top of the form and going all the way to the bottom. Repeat one more time in each direction for a total of 4 pulls on the garment. Release the sample and record the volume number from the form at the run guard (Fig 7). If there is no run guard use the crotch seam to record the volume.

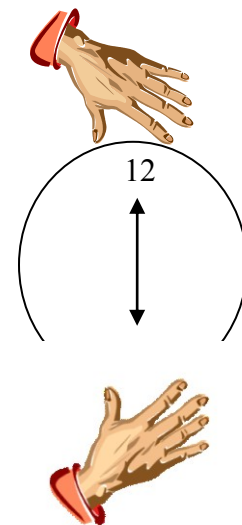


Figure 6



Figure 7
Record Volume
Number

8.2. Panty Sizing Device.

8.2.1. Position the panty on to the device with the band of the panty on the bottom of the black marks on the front and back of the device. The bottom part of the panty should be in the black area at the top of the device. Make sure to fit it in the black marks (Fig 8). The seam of the panty should be centered in the front and back of the device.



Figure 8

8.2.2. Hook a 500 gram weight to the front of the hosiery garment in the waist band at the seam (Fig 9).

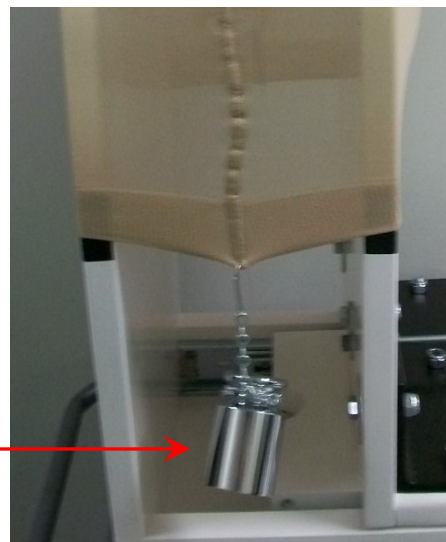


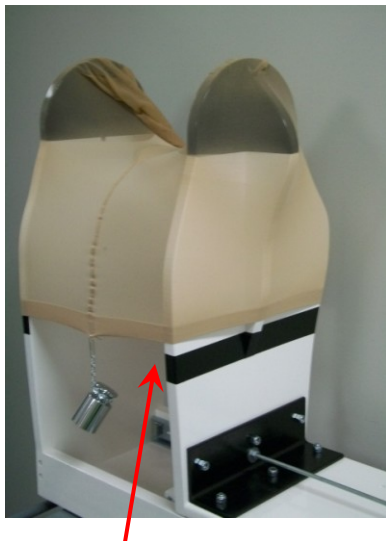
Figure 9

8.2.3. Use the Quick Grip to move the device forward (Fig 10). At this point the panty will begin to move up and down from the black marks on top and bottom of the device.



Figure 10

8.2.4. Once the panty band or the bottom of the panty has moved from the marks, reposition it back to the marks again.



*Figure 11
Moved out of the
lower black range*



*Figure 12
Repositioned and
moved back into
the black range to
continue stretching*

8.2.5. Once repositioned, use the Quick Grip to move the device forward until the panty moves off the marks again. Continue repositioning the garment and moving the grip until the panty falls outside of range of the black bands.

8.2.6. Once the panty has been stretched to the point to move from the marks on the device, record the number on the tape measure to the nearest half inch (Fig 13 & 14).



*Figure 13 & 14
Reading the Ruler on the Panty Sizing Device to the nearest ½ inch*

9. Creating a Size Chart

9.1. Leg Volume

9.1.1. After you have the volume number for the leg, use the Microsoft® Excel Software to establish the volume size chart for the leg.

9.2. Panty Volume

9.2.1. After you have the volume number for the panty, use the Microsoft® Excel Software to establish the volume size chart for the leg.

10. Report

- 10.1. A description of the hosiery garment and number tested
- 10.2. The maximum Panty Volume
- 10.3. The maximum Leg Volume