



# Standard Test Method for Measurement of Sleeping Bags<sup>1</sup>

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## INTRODUCTION

The measurements introduced in this test method are for the internal girth, internal length and width, and external length and width of sleeping bags.

The external length and width measurements or internal length and width measurements apply to length and width measurements required for standardized Bedding Labels.

The “girth” (that is, internal circumference) of a sleeping bag refers to the total internal circumference at specific longitudinal measurement points of a closed sleeping bag. It is a physical dimension/measurement used for specifications, design, and quality control. Girth in and of itself is not to be used to predict thermal properties of a sleeping bag.

## 1. Scope

1.1 This test method determines the internal girth, the internal length and width, and the external length and width of a sleeping bag under a standardized measurement method.

1.2 The measurement uses a physical measurement method applicable to any location where a flat level surface is provided.

1.3 The values stated in inch-pound units are to be regarded as standard.

1.4 *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 determine the applicability of regulatory limitations prior to use.*

## 2. Terminology

### 2.1 Definitions:

2.1.1 *bookends, n*—two moveable panels on the external measurement apparatus that slide in and out on the two axis of the sleeping bag.

2.1.2 *foot, n*—that end of the sleeping bag designed for the foot of the human body.

2.1.3 *girth, n*—total internal circumference of a closed sleeping bag as measured while the bag is lying flat on a flat level surface.

2.1.4 *head, n*—that end of the sleeping bag designed for the head and neck of the human body.

2.1.5 *length*—see below:

2.1.5.1 *Option 1—external length, n—of a sleeping bag*, greatest external distance from the head to the foot as measured down the centerline of the sleeping bag and parallel to the plane of the surface of the measurement apparatus while the sleeping bag is in a relaxed state.

2.1.5.2 *Option 2—internal length, n—of a sleeping bag*, distance from the liner/shell seam at the head of the sleeping bag to edge of the zipper coil at the foot of the sleeping bag as measured parallel to the centerline of the sleeping bag and parallel to the plane of the surface of the measurement apparatus, while the sleeping bag is open on a flat level surface. For a mummy sleeping bag this measurement is not possible; use Option 1.

2.1.6 *sleeping bag, n*—structure made of down, synthetic fiberfill, shell fabrics, or other materials, or a combination thereof, that are designed for people to use for thermal protection when sleeping (for example, outdoors, tent, cabin).

2.1.7 *walls, n*—stationary sides along the length and width of the apparatus.

2.1.8 *width*—see below:

2.1.8.1 *Option 1—external width, n—of a sleeping bag*, greatest distance from one external edge to the opposite external edge, as measured perpendicular to the axis created by the length and parallel to the plane of the surface of the measurement apparatus, while the sleeping bag is in a closed, relaxed state.

2.1.8.2 *Option 2—internal width, n—of a rectangular sleeping bag*, distance, divided by 2, from the edge of one zipper

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coil to the opposite zipper coil edge, as measured perpendicular to the axis created by the length and parallel to the plane of the surface of the measurement apparatus, while the sleeping bag is open on a flat level surface. For a mummy sleeping bag, the girth measurement divided by two.

**3. Significance and Use**

3.1 In this context, this test can be used for specifications, design, and quality control. Girth in and of itself is not to be used to predict the thermal properties of a sleeping bag.

**4. Apparatus**

4.1 *Four-Way Rule (for girth measurements)*—A measuring device that will measure two linear distances that are perpendicular of each other. It must have sufficient length and width to span all sleeping bags to be measured. A purpose-built device may be used, or a combination of common structures as simple as retractable metal tape measures. The longer of the two rules will be called the length rule, and the shorter will be called the girth rule.

4.2 *Measurement Table (for external length and width measurements)*—A rectangular table long enough and wide enough to accommodate the range of sleeping bags to be measured with two bookends also large enough to accommodate the bags. The table has two walls. The long wall is along the length of the table at the back side and the short wall, which is perpendicular to the sidewall, at the side of the table. The area inside of these side walls is the area used to perform the measurements. The long wall, short wall, and two bookends should be of sufficient height to accommodate the maximum height of sleeping bags to be tested and all must be perpendicular to the plane of the table surface (see Fig. 1).

4.3 *Measurement Lines*, using inches accurate to 1/2 in., are placed parallel to the long wall and parallel to the short wall in positions that will accommodate the variety of bags being tested in conjunction with the bookends (see Fig. 1).

**5. Conditioning**

5.1 The sleeping bag must be conditioned before any measurement is made.

5.2 Remove the sleeping bag from the stuff or storage sack and unzip the bag completely.

5.3 Shake the bag ten times.

5.4 Lay the bag flat for 24 h.

**6. Procedure**

6.1 *Girth and Internal Width Measurements:*

6.1.1 *For Girth Measurement*, place the conditioned bag, open, on a large, flat surface and place the length rule of the Four-Way Rule on the centerline of the top layer of the sleeping bag.

6.1.1.1 Zero (0 in.) measurement is placed at the point at the head of the bag where the insulation begins.

6.1.1.2 Slide the girth rule of the Four-Way Rule down the long piece to a predetermined distance from the zero (0 in.) measurement.

6.1.1.3 Apply modest pull (approximately 5 lb) to the zipper applied to the top and bottom layers to ensure that the sleeping bag is fully open.

6.1.1.4 Shift the girth rule so that its zero (0 in.) measurement aligns with the edge of either the top or bottom layer zipper coil.

6.1.1.5 Read the length rule that extends from the latitudinal rule zero measurement (0 in.) to the edge of the zipper along its plane (see Fig. 2).

6.1.2 *For Internal Width of a Rectangular Sleeping Bag*, measure the width at the head, the foot, and the middle of the sleeping bag, while open and under modest tension (approximately 5 lb). Average these three measurements together and divide by two.

6.1.3 *For Internal Width of a Mummy Sleeping Bag*, measure the girth and divide by two.

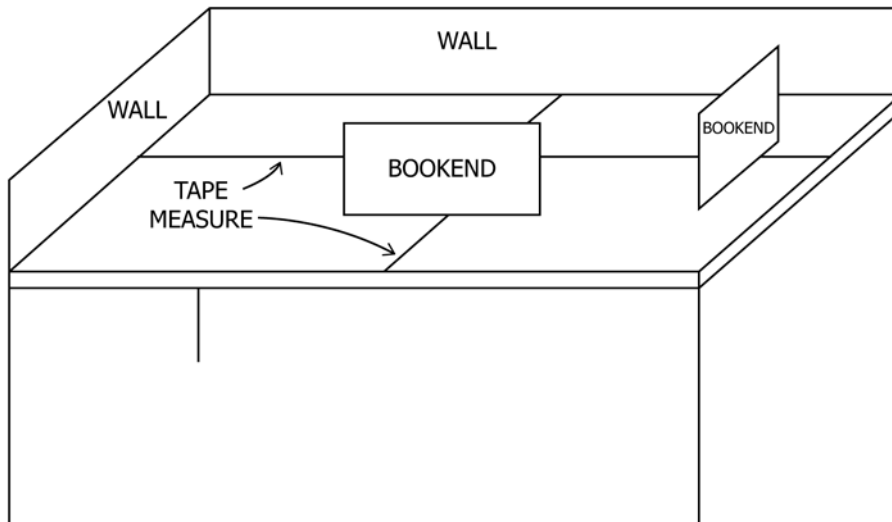


FIG. 1 Measurement Table

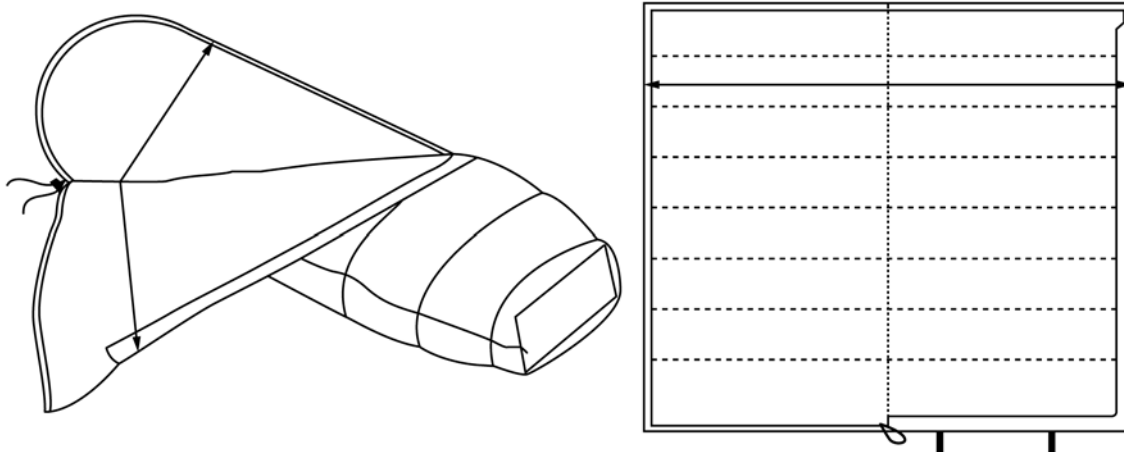


FIG. 2 Girth Measurement

6.2 *Internal Length Measurements:*

6.2.1 *For Internal Length of a Rectangular Sleeping Bag,* measure the length at the right side, the left side and the middle of the sleeping bag, while open and under modest tension (approximately 5 lb). Average these three measurements together.

6.3 *External Length and Width Measurements:*

6.3.1 The relaxed, conditioned bag is laid on the measurement apparatus with the head end of the sleeping bag just touching the short wall and the side of the sleeping bag just touching the long wall of the device with the centerline of the sleeping bag oriented to the designated center line of the device as represented by the tape measure.

6.3.2 The two moveable bookends are pushed along their respective axis until making contact with the sleeping bag.

6.3.3 Measurements are taken from the apparatus scale.

**7. Report**

7.1 Report the girth to the nearest 0.5 in.

7.2 Report the longitudinal distance within an agreed upon range that correlate with agreed upon anatomical points (for example, shoulder girth 62 in. at 11 to 15 in.).

7.3 Report the internal length and width and the external length and width to the nearest 1 in.

**8. Precision and Bias**

8.1 Precision and Bias are not available at this time.

**9. Keywords**

9.1 bedding label; girth; law tag; length; sleeping bag; width

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