



Standard Test Method for Measuring Sleeping Bag Loft¹

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INTRODUCTION

The loft (that is, thickness) of a sleeping bag refers to the total thickness of a closed sleeping bag. It is a physical dimension/measurement used for specifications, design, and quality control. Loft, in and of itself, is not to be used to predict the thermal properties of a sleeping bag.

1. Scope

1.1 This quantitative test method covers the determination of the loft of a sleeping bag under a standardized load.

1.2 The test method uses a physical height measurement applicable in the laboratory.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the inch-pound units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the test method.

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 consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 Definitions:

2.1.1 *loft, n*—the total thickness of a closed sleeping bag as measured while the bag is lying flat on a surface.

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

3. Significance and Use

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

4. Apparatus

4.1 *Gantry*, a rigid structure of sufficient height and width to span all sleeping bags to be measured is required. A purpose-built device of the sort shown in Fig. 1 may be used, or a structure as simple as an office desk or workbench can suffice.

4.2 *Rule*, having 1 mm [$1/16$ in.] graduations, and long enough to measure the zero height position.

4.3 *Disk*, having diameter of 30 cm [12 in.]. The weight of the disk plus the rule must equal 50 g [1.8 oz] for a pressure of 6.9 Pa [0.001 psi]. Commercially available foam core dry-mount board is suitable. A range of $\pm 1\%$ in diameter and $\pm 5\%$ in weight is tolerable. Mark the center of the disk for positioning the rule during the test procedure.

5. Conditioning

5.1 Remove the sleeping bag from the stuff sack, zip the bag closed, and shake it for approximately 1 min, (for example, a person shall hold the bag and shake it, turning it periodically during the shaking). Lay it flat in an uncompressed state for at least 24 h prior to testing. A bag which has not been compressed in the 24 h prior to testing shall be considered to be conditioned (for example, bags drawn directly from production, bags shipped uncompressed, replicate tests).

6. Procedure

6.1 Perform conditioning and testing at ambient temperatures between 10°C and 25°C [55°F and 80°F], and at a relative humidity not exceeding 70 %.

6.2 Place the conditioned sleeping bag on a large flat surface and place the gantry on the same surface, spanning the bag. Do not excessively shake or re-fluff the sleeping bag during placement. Allow the bag to settle for 5 min.

6.3 Place the disk on the center line of the sleeping bag, half of the distance from the outer bottom (foot) end to the outer top (head) end of the bag.

¹ This test method is under the jurisdiction of ASTM Committee F-8 on Sports Equipment and Facilities and is the direct responsibility of Subcommittee F08.22 on Sleeping Bags.

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