

Test Report

**Sample model : Turbat Kuk 700 Fill: Ukrainian
down 750FP (70% goose, 30% down)**

CH-20089

Turbat LTD

18 Jul 2018

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Completed: 18 Jul 2018

Sample Description: Sleeping Bag

Shipped By: Die Post 984047236115116850

Filling Label: No Label

Sample Identification: Sample model : Turbat Kuk 700

Fill: Ukrainian down 750FP (70% goose, 30% down)

Fill weight : 700g

Outer Material: 20D nylon Rip-stop DWR

Inner Material : 20D nylon

Construction : H-chamber



SN EN ISO/EC 17025:2005

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ISO 23537-1 (Thermal Requirements for Sleeping Bags)

Thermal Insulation Data

Bag	Bag Weight	Thermal Insulation (clo) ^a				Maximum Deviation from Mean (%)
		Rep 1	Rep 2	Rep 3	Mean	
Sample model : Turbat Kuk 700 Fill: Ukrainian down 750FP (70% goose, 30% down)	1.111kg	7.835	7.877	8.071	7.928	1.8

^a To convert clo units to SI units of m² · °C/W, divide by 6.45.

Temperature Ratings

Bag	Mean Insulation Value (clo) ^a	ISO 23537 Temperature Ratings ^b					
		T comfort		T limit		T extreme	
		°C	°F	°C	°F	°C	°F
Sample model : Turbat Kuk 700 Fill: Ukrainian down 750FP (70% goose, 30% down)	8.20	-7	19	-14	6	-35	-31

^a The reported mean insulation value was adjusted using the correlation factor developed by testing six reference bags, as required in Annex A of ISO 23537. To convert clo units to SI units of m² · °C/W, divide by 6.45.

^b Temperature ratings in degrees Celsius and Fahrenheit were calculated to the nearest thousandth of a degree and rounded to the nearest whole number.

Temperature Predictions - The standard defines four temperatures that designate the range of utility for a sleeping bag system.

Comfort temperature (T comf): Lower limit of the comfort range down to which a sleeping bag user with a relaxed posture such as lying on the back is globally in thermal equilibrium and not feeling cold (related to standard woman and in standard conditions of use).

Limit temperature (T lim): Lower limit at which a sleeping bag user with a curled-up body posture is globally in thermal equilibrium and not feeling cold (related to standard man and in standard conditions of use). (Note: The temperature is lower because the metabolic rate used in the equation for a man is higher than that used in the equations based on a woman’s physiology.)

Extreme temperature (T ext): Lower extreme temperature where the risk of health damage by hypothermia occurs (related to a standard woman with a curled up posture in a situation of high cold stress with shivering). This is a point of danger that can lead to death.

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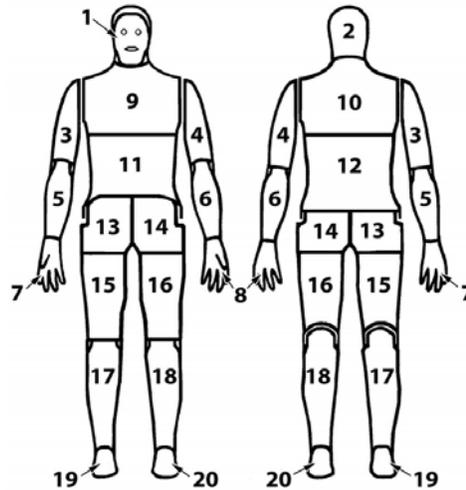
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Figure 1. Simon's body segments (13).



To conduct a test, a sleeping bag was tumbled in a dryer for 15 minutes at a temperature less than 30°C (i.e., on the no heat setting). The manikin was dressed in the thermal underwear, socks, and face mask and placed on a pad on top of a wooden board about 0.4 m above the floor. He was positioned so that his head was in the direction of the air flow (i.e., windward). The manikin was placed in the bag, and the hood was drawn around the edge of the face. (See Figures 2, 3, and 4.) Bags without a hood were tested by removing the facemask and drawing the bag up to the neck (Figure 4). Equilibrium was indicated by a steady-state power reading that had not changed more than 1%. Data were collected by computer every 30 seconds for a 30 minute test.

Figure 2. Manikin dressed in the facemask, thermal underwear, and socks on top of the pad and board





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Figure 3. Manikin ISO set up in the test chamber with a sample mummy bag.



Figure 4. Close up views of bags drawn around the head.

Mummy bag drawn around the face which is covered with the facemask.



Bag without a hood drawn up over the shoulders (no drawstring).



Bag without a hood cinched around the neck.

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