

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : 190T PLYESTER sleeping bag

Item No. : HF 0013

Style No. : HF 0013

Origin : China

Destination : Germany

Retest : No

Sample Receiving Date : Dec 02, 2024

Testing Period : Dec 02, 2024 - Dec 19, 2024

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Test Performed : Selected test(s) as requested by applicant

Conclusion	A	Remark
Clause 4.1 Thermal Resistance of Sleeping Bag	PASS	

Remark(s) : PASS=Meet Client's/General Requirement

Signed for and on behalf of
SGS (Hong Kong) Limited



Chan Kai Kong, Alfred, Technical Manager

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Test Result

Requirements for sleeping bags Part 1: Thermal, mass and dimensional requirements for sleeping bags designed for limit temperatures of -20°C and higher (ISO 23537-1:2022)

Clause 5.1 Thermal Resistance of Sleeping Bag

Test conditions

1	Air temperature: 5+0.5°C
2	Relative humidity: 30-50% R.H.
3	Air speed: 0.3-0.5 m/s
4	Temperature of manikin: 34.0±0.1°C

Information of manikin

	Measured
Height of manikin (m)	1.78
Total surface area of standing manikin (m ²)	1.8
Mean surface temperature of manikin (°C)	34.0

Garment worn by manikin and artificial ground

Garment worn by manikin	Two undershirt with long sleeves (shirttail hangs over the long underpants), two long underpants and a pair of socks (up to the knee), and a clod protective mask.
Artificial ground	A foam mattress on a 20 mm thick wooden board (at least 100 mm above the floor)

Thermal resistance posture 1 ($R_c(1)$)

Total sample weight (kg)	Standard thermal resistance $R_c(1)$ (m ² .K/W)
1.463	0.926

Lower temperature limits of the range of utility

Standard thermal resistance $R_c(1)$ (m ² .K/W)	Extreme temperature T_{ext}	Limit temperature T_{lim}	Comfort temperature T_{comf}
0.926	-17 °C	-2 °C	4 °C
	1 °F	28 °F	39 °F

Remarks:

- Test samples and pre-treatment: before testing, the sleeping bag is dry tumbled in a dryer for 15 min at a temperature of less than 30 °C.
- Thermal resistance posture 1 ($R_c(1)$) is measured with the manikin completely inserted into the sleeping bag and lying on its back. The bag's zippers, if any, are closed. The bag's hood, if present, covers the manikin's head, and the cords of the hood are tightened as much as possible without using any additional aids (e.g. clothes pins, etc.) not supplied with the sleeping bag.

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- 3 Standard thermal insulation is a property of the sleeping bag which is related to the dry heat loss of the sleeping bag user (combination of conductive, convective and radiative heat transfer), to the difference of temperature between skin and ambient air, as measured with a thermal manikin.
- 4 Standard thermal insulation reflects the insulative property of the sleeping bag which includes effect of the filling, air cavities inside the sleeping bag, boundary air layers on outer face of the sleeping bag, mat under the sleeping bag and garment of the sleeping bag user.
- 5 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 their back, is globally in thermal equilibrium and just not feeling cold.
- 6 Limit temperature (T_{lim}): Lower limit at which a sleeping bag user with a curled up body posture is globally in thermal equilibrium and just not feeling cold.
- 7 Extreme temperature (T_{ext}): Very low temperature where the risk of health damage by hypothermia is possible. This is a point of danger which can lead to death.

Photo of sample:



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Sample Photo



End of Report

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