Akkreditierte Prüfstelle – TITV e. V. • Zeulenrodaer Str. 42 • 07973 Greiz

ZIMMER + ROHDE GmbH
Zimmersmühlenweg 14-18
61440 Oberursel / Taunus

Textilforschungsinstitut
Thüringen-Vogtland e. V.
Akkreditierte Prüfstelle

Zeulenrodaer Str. 42
07973 Greiz – Germany

TEST REPORT 176/1/22 Ha 14/04/2022

Customer: Ms Oda Nimmer
Assignment from: -
Received: 08/04/2022

Assignment:

1. Determination of specific thermal conductivity λ, temperature difference 10 K, contact pressure of the plunger 10 cN/cm², Alambeta method, n = 5, right side and reverse side
2. Determination of the thermal resistance r, temperature difference 10 K, contact pressure of the plunger 10 cN/cm², Alambeta method, n =5, right side and reverse side
3. Determination of specific heat capacity c_v, temperature difference 10 K, contact pressure of the plunger 10 cN/cm², Alambeta method, n = 5, right side and reverse side

Samples: 1 piece of fabric, article 10935

Sampling: The samples were taken by the customer.

Realisation of the test: The samples were taken und were tested by the prescriptions mentioned above.

Test results:
1. Specific thermal conductivity λ

λ = Quantity of heat, which is passing a material with 1 m^2 surface and 1 m thickness per second, if there is a temperature difference of 1K between both sides.

λ in $\frac{mW}{m\ K}$

mW	Milliwatt
m	meter
K	Kelvin

	right side	**reverse side**
$\bar{x}$	38.1	37.5
x_{max}	38.8	38.8
x_{min}	36.9	36.3

The lower the value of the specific thermal conductivity, the less heat is transported and dissipated, the better the thermal insulation.

2. Thermal resistance r

r = Temperature difference between the upper side and the reverse side of a material with a surface area of 1 m^2 and a given thickness, if a heat flux of 1 Watt is passing through.

r in $\frac{mK\ m^2}{W}$

mK	Millikelvin
m^2	square meter
W	Watt

	right side	**reverse side**
$\bar{x}$	35.2	35.9
x_{max}	36.1	38.0
x_{min}	32.7	33.8

The higher the value of the heat resistance, the poorer the heat is transported and dissipated.

3. Specific heat capacity

c_v = volumic heat storage capacity of a material

c_v in $\frac{mW \quad s}{K \quad m^3}\ 10^3$

mW	Milliwatt
s	seconds
K	Kelvin
m^3	cubic meter

	right side	**reverse side**
$\overline{x}$	182.2	140.1
x_{max}	193.3	154.9
x_{min}	168.3	134.9

The higher the value of the heat capacity, the more heat can be stored in volume.

The testing results are exclusively related to the sample under conditions as received.

Without written permission of the testing laboratory it is inhibited to copy this report partially.

i.V. S. Haase

Dr. Klobes
Head of the Testing Centre