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T E S T R E P O R T 364/1/20 Pie 03/07/2020

Customer:	Ms Oda Nimmer
Assignment from:	17/06/2020
Received:	19/06/2020

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
4. Determination of light transmittance according to DIN EN 410, n = 3

Samples: 1 piece of fabric article 1359

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 m² surface and 1 m thickness per second, if there is a temperature difference of 1K between both sides.

$$\lambda \text{ in } \frac{mW}{m \cdot K}$$

mW	Milliwatt
m	meter
K	Kelvin

	right side	**reverse side**
$\bar{x}_1$	56.1	57.3
x_{max}	57.2	59.4
x_{min}	53.9	56.0

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 m² and a given thickness, if a heat flux of 1 Watt is passing through.

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

mK	Millikelvin
m²	square meter
W	Watt

	right side	**reverse side**
$\bar{x}_1$	12.3	12.2
x_{max}	12.6	12.2
x_{min}	12.1	11.8

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

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

mW	Milliwatt
s	seconds
K	Kelvin
m³	cubic meter

	right side	**reverse side**
$\bar{x}_1$	329.2	343.8
x_{max}	344.0	357.0
x_{min}	320.3	324.3

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

4. Light transmittance	**right and reverse side**
Light transmittance [%]	0.0

In the enclosure you get the measurement report. There you can find the single values.

Dr. Klobes
Head of the Testing Centre