Thermal conductivity according to DIN EN ISO 8497

Test report No: G.2-026a/18

Applicant:	**L'ISOLANTE K-FLEX S.p.A., 20877 Roncello (MB), Italien**
Material:	**K-Flex Solar HT**
Labeling: (as given by producer)	04871014371P
Material identification: (as given)	Tube made of flexible elastomeric foam according to EN 14304 : 2009+A1:2013
Nominal dimensions:	Internal diameter: 28 mm — Insulation thickness: 19 mm — Length: 2000 mm
Nominal density:	----- kg/m³
Sampling:	The material was collected by staff of FIW München on 05.12.2017 in the plant Uniejów/Poland.
Goods Receipt:	No. 3684
Test equipment:	Test pipe with calculated end caps according to DIN EN ISO 8497:1996 Diameter 29 mm, horizontal, Length 2000 mm
Preparation:	Experimental data according to EN 13467 : Internal diameter: 29 mm — Insulation thickness: 18 mm — Length: 2021 mm Density: 66.5 kg/m³
Installation according to DIN 4140	Internal diameter: 29 mm — Insulation thickness: 19 mm — Length: 2280 mm Density: *) 63.6 kg/m³ — Mass: 0.417 kg
Remarks:	The insulation pipe was built on the test pipe in state of delivery.

Experimental data:

Test	Heat flow rate	Temperature of the Warm Side	Temperature of the Cold Side	Average temperature of the specimen	Temperature-difference of the specimen	Thermal conductivity
No	W	°C	°C	°C	K	W/(m·K)
1	11.0	-26.4	-42.3	-34.4	15.9	0.0363
2	11.0	8.1	-10.8	-1.3	18.9	0.0383
3	11.0	45.4	28.2	36.8	17.2	0.0427
4	10.9	73.0	57.5	65.3	15.5	0.0471
5	10.9	100.3	86.8	93.6	13.5	0.0518

Uncertainty: < 3%

Thermal conductivity is calculated for temperature differences on the specimen.

Properties of the material after conductivity-measurement up to 100.3 °C warm side: (Values at end of the test)

Density: *) 63.6 kg/m³ — Mass: 0.417 kg — Change in mass: 0.0 %

Remarks: -------

*) The given values of the density refer to the insulation of the specimens installed on the test pipe without facings.

Results:

Mean temperature °C	-30	-10	0	10	20	30	50	70	90
Thermal conductivity W/(m·K)	0.036	0.038	0.039	0.040	0.041	0.042	0.045	0.048	0.051

These thermal conductivity values refer to the material in a dry state installed as pipe insulation and are related to the mean temperature of the specimen ($\lambda_{Lab,R}$ as specified in the guidelines VDI-2055).

Final remarks: ---------

Gräfelfing, 06.06.2018

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