

Thermal Conductivity according to DIN 52612

Test report No: F.2-7a/02

Applicant: L'ISOLANTE K-FLEX S.r.L., I-20040 Roncello (Mi)
Name of the product: " K-Flex ST "
Product identification: Sheet material out of flexible elastomeric foam with skins
 (as given) nominal thickness: 25 mm
 color: black
Sampling: The samples were taken on 20th. June 2001 at the plant Roncello/Italy by employee of FIW.
Test equipment: Guarded hot plate apparatus according to DIN 52612: Metering section 200 x 200 mm with guard section 340 x 340 mm

Preparation of the material:

Tested thickness^{+) :} 0.0240 m Mass^{+) :} 0.1700 kg
 Surface area tested: 0.1156 m² Density^{+) :} 61.3 kg/m³ ^{+) Mean values (two specimens)}
Remarks: The test specimens were built into the test apparatus with a fixed thickness of 24.0 mm.
 The thickness was fixed by spacers.

Experimental data:

Test No	Heat flow rate W	Temperature of the		Average temperature of the specimen °C	Temperature-difference of the specimen K	Thermal Conductivity W/(m·K)
		Warm Side °C	Cold Side °C			
1	1.266	-169.1	-195.3	-182.2	26.2	0.0145
2	1.637	-67.5	-86.4	-77.0	18.9	0.0260
3	1.677	-40.2	-57.4	-48.8	17.2	0.0292
4	1.678	-11.8	-27.4	-19.6	15.6	0.0323
5	1.669	16.4	1.7	9.1	14.7	0.0340
6	1.636	31.9	17.8	24.9	14.1	0.0347

Uncertainty: < 2%

Properties of the material after conductivity-measurement up to -195.3 °C cold side: (Values at end of the test)


Thickness^{+) :} 0.0240 m Mass^{+) :} 0.1700 kg
 Density^{+) :} 61.3 kg/m³ Change in mass: 0.0 % ^{+) Mean values (two specimens)}
Remarks: One specimen showed after tests some cracks at the positions, where the gaps for the spacers were cutted into the test specimens.

Results:

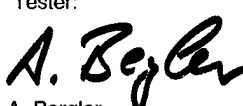
Mean temperature °C	-180	-150	-100	-75	-50	-20	0	20	---
Thermal conductivity W/(m·K)	0.015	0.018	0.023	0.026	0.028	0.032	0.033	0.036	---

Final remarks: These thermal conductivity values are material values applicable to material in a dry state. They do not represent operational thermal conductivity values as specified in the guidelines VDI 2055.

Gräfelfing, 30.01.2002

Department head:

 Dipl.-Ing.(FH) W. Albrecht



Tester:

 A. Bergler