Thermal conductivity according to DIN EN ISO 8497

Test report No: G.3-022a/16

Applicant: **S.C. ISOLINE SRL, Timisoara, cod 307221, O.P.10, C.P.1097, Rumänien**

Material: **COCHILTECH**

Labeling: (as given by producer) -----

Material identification: (as given) Pipe section cut from stone wool board

Nominal dimensions: Internal diameter: 114 mm Insulation thickness: 20 mm Length: 1000 mm
Nominal density: ----- kg/m³

Sampling: Sent by applicant

Goods Receipt: No. 1693

Test equipment: Test pipe with calculated end caps according to DIN EN ISO 8497 Diameter 114 mm, horizontal, Length 3000 mm

Preparation: Experimental data according to EN 13467 :
Internal diameter: ---- mm Insulation thickness: ---- mm Length: ---- mm
Density: ---- kg/m³

Installation according to DIN 4140: Internal diameter: 114.3 mm Insulation thickness: 20 mm Length: 3000 mm
Density: *) 75.6 kg/m³ Mass: 1.86 kg

Remarks: The pipe sections are installed in state of delivery on the test pipe.

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	36.8	38.7	24.6	31.7	14.1	0.0407
2	277	134.6	46.8	90.7	87.8	0.0492
3	581	217.3	68.2	142.8	149.1	0.0607
4	1130	324.4	107.2	215.8	217.2	0.0810
5	1730	411.6	147.4	279.5	264.2	0.102
Uncertainty: < 3%		Thermal conductivity is calculated for temperature differences on the specimen.				

Properties of the material after conductivity-measurement up to 411.6 °C warm side: (Values at end of the test)

Density: *) 75.1 kg/m³ Mass: 1.85 kg Change in mass: -0.6 %

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	50	100	150	200	250	----	----	----	----
Thermal conductivity W/(m·K) *)	**0.043**	**0.052**	**0.063**	**0.076**	**0.092**	----	----	----	----

*) according to EN ISO 13787 rounded upwards to the next 0.001 W/(m·K)
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, 22.02.2016

Department Specialist

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Thermal conductivity according to DIN EN ISO 8497

Test report No: G.3-023a/16

Applicant:	**S.C. ISOLINE SRL, Timisoara, cod 307221, O.P.10, C.P.1097, Rumänien**		
Material:	**COCHILTECH**		
Labeling: (as given by producer)	-----		
Material identification: (as given)	Pipe section cut from stone wool board		
Nominal dimensions:	Internal diameter: 114 mm	Insulation thickness: 100 mm	Length: 1000 mm
Nominal density:	----- kg/m³		
Sampling:	Sent by applicant		
Goods Receipt:	No. 1693		
Test equipment:	Test pipe with calculated end caps according to DIN EN ISO 8497 Diameter 114 mm, horizontal, Length 3000 mm		
Preparation:	Experimental data according to EN 13467 :		
	Internal diameter: ---- mm	Insulation thickness: ---- mm	Length: ---- mm
	Density: ---- kg/m³		
Installation according to DIN 4140	Internal diameter: 114.3 mm	Insulation thickness: 98 mm	Length: 3000 mm
	Density: *) 74.1 kg/m³	Mass: 14.6 kg	
Remarks:	The pipe sections are installed in state of delivery on the test pipe.		

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	9.84	34.0	20.0	27.0	14.0	0.0372
2	95.4	138.4	26.1	82.3	112.3	0.0451
3	214	234.6	33.2	133.9	201.4	0.0565
4	455	361.0	42.9	202.0	318.1	0.0760
5	737	461.4	55.8	258.6	405.6	0.0965
Uncertainty: < 3%		Thermal conductivity is calculated for temperature differences on the specimen.				

Properties of the material after conductivity-measurement up to 461.4 °C warm side: (Values at end of the test)

Density: *) 74.1 kg/m³ Mass: 14.6 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	50	100	150	200	250	----	----	----	----
Thermal conductivity W/(m·K) *)	**0.040**	**0.049**	**0.061**	**0.076**	**0.094**	----	----	----	----

*) according to EN ISO 13787 rounded upwards to the next 0.001 W/(m·K)
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, 22.02.2016

Department Specialist

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