



Certification of Building Material

Thermal Resistance, R value

ASTM C177: Method for Measuring Thermal Conductivity. Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus (ISO 8302:1991)

Product type tested: **Sheepwool Insulation Mat**

Product name: **Sheepwool Mat DWS by DAEMWOOL**

Report: ECO-P10012-10026

Date 27.05.2010

Prepared for:

DAEMWOOL
Naturdämmstoffe GmbH & CoKG
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Testing Standards and Results:

The ASTM C177 Testing Standard is comparable with ISO 8302:1991, which is used for determination of the Thermal Conductivity and to calculate Thermal Resistivity (R-value) of building materials.

The test results of **Thermal Conductivity $\lambda_{10,dry} = 0,0399 \text{ W/mK}$ translates to the following Thermal Resistivity:**

R 3.9 at 1 in inch

R 19 at 4.8 inch

1 Purpose of Test

On 23.07.2009 ECOLABOR was hired to certify the thermal conductivity and thermal resistivity of the sheepwool insulation mat manufactured by DAEMWOOL under product name DWS with a thickness of 40 mm.

2 Materials

The tested material was provided by manufacturer in a size of 500 x 500 mm and thickness of 40 mm.

3 Product Description

The product consists of raw materials of sheep wool, which is then processed to a felt. The fibers are oriented in parallel to the surface of the felt. A supporting mesh is holding the wool mat in its shape after final thermal treatment.

4 Testing Results

The measurement was consistent with the Norm ASTM C518, EN 12667:2001, using a single heating plate per ISO 8302:1991 and EN 1946-2:1999 while the heated side was facing down.

Density

Was determined by storing the product in a air conditioned room (23 ± 2)°C and (50 \pm 5)% relative humidity until the constant mass was achieved.

Test Preparation

Drying chamber for drying of the product at (70 ± 2)°C for four days, while fresh air was added from an area with ambient temperature (23 ± 2)°C and (50 \pm 5)% relative humidity. The tested material was covered using a PE cover at 0,01 mm thick.

Thickness	Density	Relative Moisture Content	Average Temperature Difference	Thermal conductivity	Thermal Resistivity per inch
[mm]	[Kg/m ³]	[%]	[K]	[W/mK]	[mK/W]
40	17,9	0	10,0	0,04002	3,9

Stainz, 14.09.2009



Zeichnungsberechtigter Leiter des Prüflaboratoriums
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