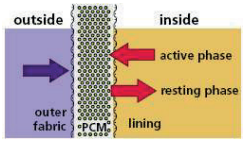
APPLICATION**SHEET**

Organics · Building Materials
LFA 457 *MicroFlash*™

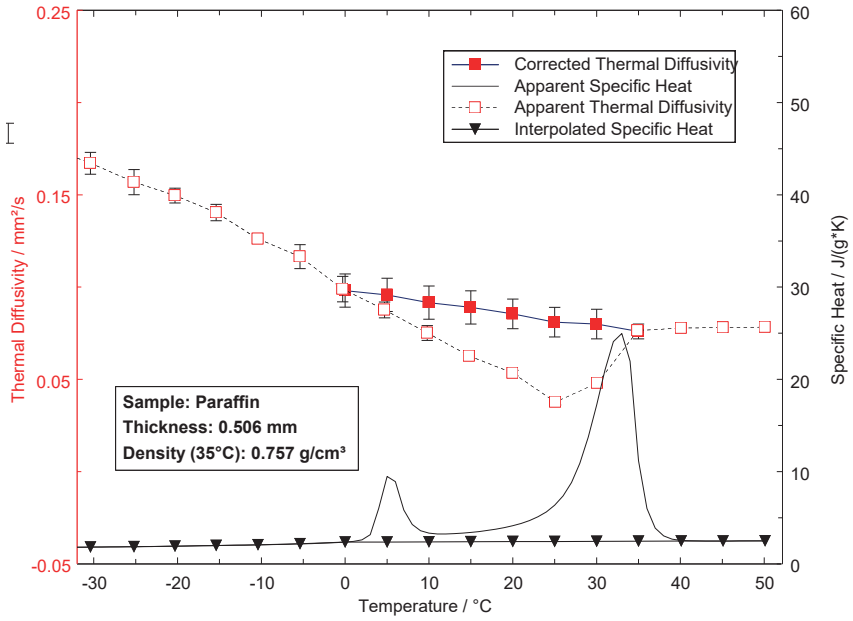
Paraffin PCM



Introduction

The heat storage capacity of stone building materials has been recognized since ancient times. However, in order for heat storage capability to be effective in modern buildings, a number of problems arise such as high costs, excessive mass and undesirable temperature fluctuations. The development of latent heat storage systems in building materials is thus a very important aspect of energy conservation.

In recent years, the utilisation of phase change materials (PCMs) in active and passive solar buildings has been subject to considerable interest. The appeal of PCMs is that they can store heat energy in a latent, as well as sensible fashion, leading to greater heat storage capacity per unit volume than that of conventional materials. This application sheet contains the results of LFA measurements



Test Conditions

Temperature range:	-30 ... 50°C
Sample holder:	Platinum for liquids
Sample thickness:	0.506 mm
Sample surface preparation:	-
c_p from DSC standard:	Sapphire

Test Results

In the measured apparent specific heat, the melting enthalpy is visible as an overlapping endothermic effect. The specific heat without heat of fusion was determined by an interpolation process. The thermal diffusivity decreases over the entire temperature range. Above 35°C, the values are nearly constant. In the melting region, the measured apparent values were corrected for the influence of the ongoing melting process. The correction is based on tests at different well-defined pulse energies at each temperature. Extrapolating the results to a pulse energy of 0 allows for calculation of the thermal diffusivity without the influence of melting/solidification. The example clearly demonstrates that the LFA 457 can analyze samples within and at temperatures above the melting range without any problems.

NGB · Application Sheet 050 · E · 0621 · Technical specifications are subject to change.

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