APPLICATION**SHEET**

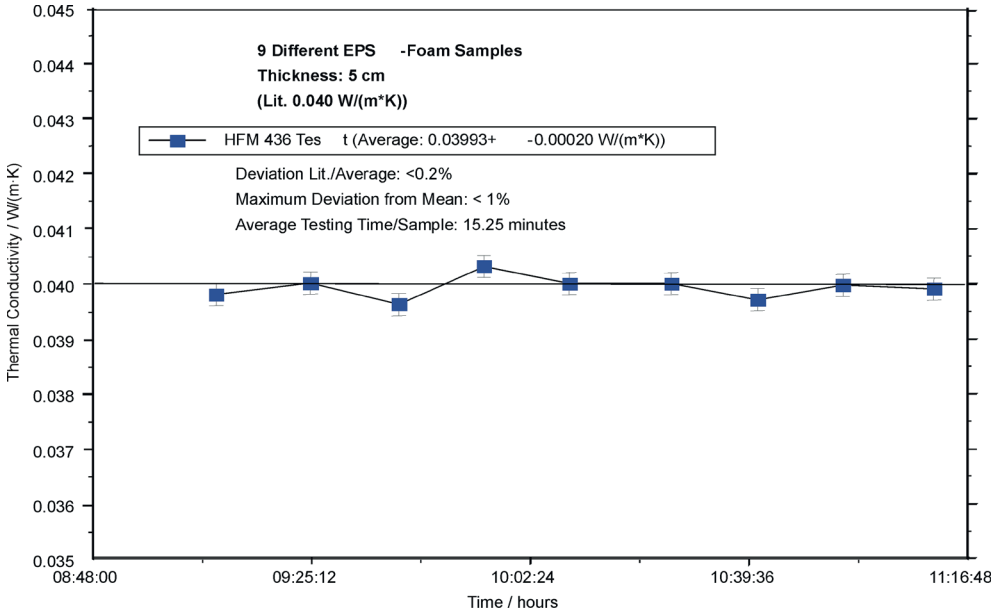
Building Materials
HFM 446 *Lambda Medium*

EPS Foam Insulation

Introduction

EPS is a closed-cell, lightweight and foamed plastic composed of hydrogen and carbon atoms. It is used for packaging purposes and for the insulation of buildings. The thermal conductivity of such materials is generally within 0.02 and 0.045 W/(m·K) around room temperature. One of the advantages of EPS foams is their mechanical strength.

The mechanical strength of EPS varies with its density. The most important mechanical property of EPS insulations and building products is its resistance to compressive stresses which increases as the density becomes higher. EPS has a compressive resistance between 10 to 60 psi for most construction applications. Witinin that range, EPS can be produced to meet specific strength requirements.



Test Conditions

Temperature range:	24°C
Atmosphere:	Ar (ml/min)
Calibration standard:	SRM 1450C
Thickness:	5.000 cm

Test Results

Presented here is the thermal conductivity at 24°C. Tests were carried out on different specimens of the same batch as typical for quality control purposes. The tests were made according to DIN EN 12667 at 24°C. It an be seen that the thermal conductivity does not significantly vary from sample to sample. The values measured are around 0.04 W/(m·K). This is exactly the value specified for this insulating material. Furthermore, one can see the high test speed of the HFM 446 *Lambda Medium* used for the measurements. One test takes only 15 to 16 minutes. Therefore, a large number of samples can daily be analyzed.This gets important if an inulating foam shall be specified and analyzed in accordance with DIN EN 13163. Here, the number of sample tests influences the $\lambda_{90/90}$ values which can be determined from the test results.

NGB · Application Sheet 083 · E · 0621 · Technical specifications are subject to change.

NETZSCH-Gerätebau GmbH
Wittelsbacherstraße 42 · 95100 Selb · Germany
Phone: +49 9287/881-0 · Fax: +49 9287/881505
at@netzsch.com · www.netzsch.com