

Environmental Product Declaration

according to ISO 14025



**Microporous Calcium Silicate
Insulating Material**



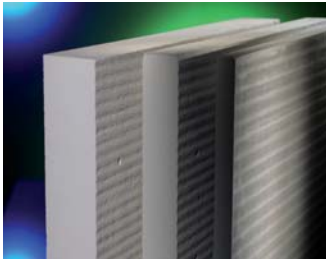
CALSITHERM®
Silikatbaustoffe GmbH


Declaration number
EPD-CSP-2008112-E

Institut Bauen und Umwelt e.V.
<http://www.bau-umwelt.com>



Institut Bauen
und Umwelt e.V.

			Summary Environmental Product Declaration
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Institut Bauen und Umwelt e.V. www.bau-umwelt.com			Program holder
Calsitherm Silikatbaustoffe GmbH An der Eiche 15 D-33175 Bad Lippspringe		CALSITHERM® Silikatbaustoffe GmbH	Declaration holder
EPD-CSP-2008112-E			Declaration number
Silca, Silcal, Microcal Calcium Silicate Panels; Calsitherm-Klimaplatte This declaration is an environmental product declaration according to ISO 14025 and describes the environmental rating of the building products listed herein. It is intended to further the development of environmentally compatible and sustainable construction methods. All relevant environmental data is disclosed in this validated declaration. The declaration is based on the PCR document "Calcium Silicate Insulation Materials".			Declared building products
This validated declaration authorises the holder to bear the official stamp of the IBU. It is valid for the above mentioned products for three years from the date of issue. The declaration holder is liable for the information and evidence on which the declaration is based.			Validity
The declaration is complete and contains in its full form: - Product definition and physical building-related data - details of the basic materials and origin - description of how the product is manufactured - instructions on how to process the product - data on usage condition, unusual effects, and end of life phase - life cycle assessment results - evidence, verifications, and tests			Content of the declaration

28. April 2008		Date of issue
		Signatures
Prof. Dr.-Ing. Horst J. Bossenmayer (President of the Institut Bauen und Umwelt)		
This declaration and the rules on which it is based have been examined by an independent expert committee (SVA) in accordance with ISO 14025.		Verification of the declaration
		Signatures
		
Prof. Dr.-Ing. Hans-Wolf Reinhardt (Chairman of the SVA)		Dr. Eva Schmincke (Verifier appointed by the SVA)



Summary
Environmental
Product Declaration

Product description

Silca, Silcal, Microcal Calcium Silicate Panels and Calsitherm-Klimaplatten (named CSP) are calcium silicate hydrates, containing a marginal fraction (< 0,6 vol -%) of cellulose. Their color is white or light grey. The materials are durable, temperature-resistant up to 1050 °C and are available in thicknesses between 20 and 100 mm with densities from 200 to 390 kg/m³.

Applications

Panels for high temperature insulation for heat engineering constructions. Fire protection panels for the building construction sector. Panels for completion of the interior, reconstruction of old buildings, timbered houses and humidors, in particular for insulation and humidity regulation with a mould inhibitory effect. Within the preservation of ancient monuments for indoor insulation installations.

Scope of the LCA

The **Life Cycle Assessment (LCA)** was performed according to DIN ISO 14040 following the requirements of the IBU guideline for type III declarations. Specific data from the company CALSITHERM Bad Lippspringe, Germany and the “GaBi 4” database were used. The LCA was carried out for the products’ manufacturing phase, taking into account all background data such as the extraction of raw materials and transportation as well as disposal and recycling of boards and other residues (e.g. packaging material).

Silca, Silcal, Microcal Calcium silicate panels; Calsitherm-Klimaplatte

Parameter	Unit per m ³	Production CSH Plate
Primary energy, non-renewable	[MJ]	6457
Primary energy, renewable	[MJ]	264
Global Warming Potential (GWP)	[kg CO ₂ -Eqv.]	504.1
Ozone Depletion Potential (ODP)	[kg R11-Eqv.]	28.6 * 10⁻⁶
Acidification Potential (AP)	[kg SO ₂ -Eqv.]	0.69
Eutrophication Potential (EP)	[kg PO ₄ -Eqv.]	0.094
Photochemical Ozone Creation Potential (POCP)	[kg Ethene-Eqv.]	0.087

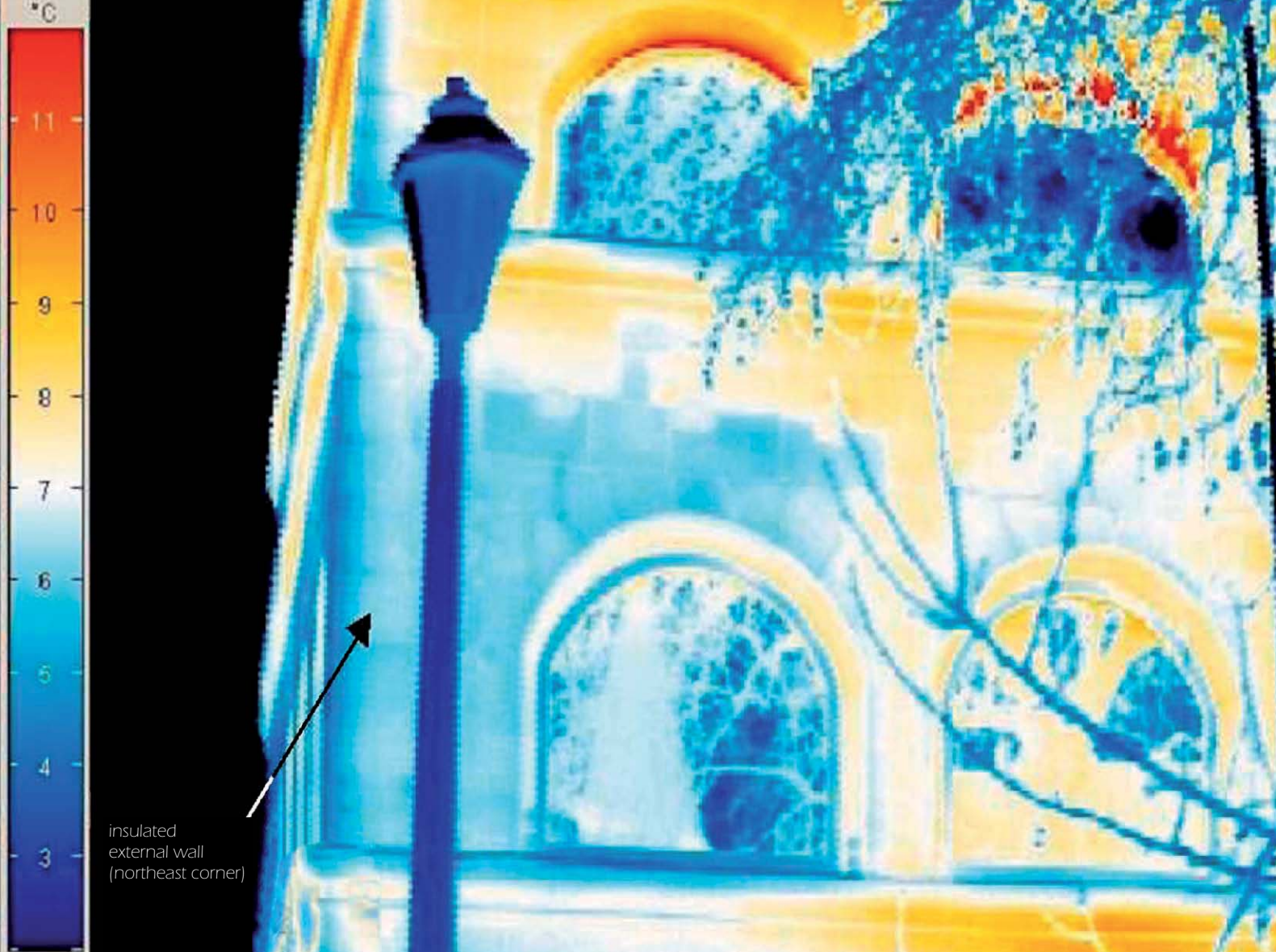
Results of the LCA

Issued by Calsitherm Silikatbaustoffe GmbH, Bad Lippspringe
in cooperation with PE Europe GmbH, Leinfelden-Echterdingen

Evidence and verifications

The following evidence and verifications are described in the Environmental Product Declaration:

Eluate Analysis	Institut für Lebensmittel-, Wasser- und Umwelttechnik, 33098 Paderborn Result: The testing showed no adverse effect on the eluate by heavy metals, PAHs, phenols, hydrocarbons, fluorides and cyanides.
Radioactivity	Universität Gesamthochschule Paderborn, Fachbereich 6 – Physik, 33095 Paderborn, Prof. Dr. J. Mimkes Result: The testing showed no increased values compared to the natural radioactivity.



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