



Hemplith® Block

Technical Data Sheet Hempcrete Masonry Blocks

Ecological, monolithic construction with natural materials



1. PRODUCT IDENTIFICATION AND APPLICATIONS

The Hemplith® Block is an ecological, monolithic building material that combines masonry and insulation in one element. It consists of only three natural ingredients: hemp shives, lime, and water. It is used in new construction for solid, skeleton, or timber frame structures, as well as for the renovation of existing buildings.

Key Advantages:



2-in-1 Solution:

Masonry and insulation in one monolithic element.



Versatile application:

New construction and renovation, solid, skeleton, and timber frame construction.



CO₂ Sink:

Negative CO₂ balance due to plant-based hemp shives as an aggregate.



Living Comfort:

High thermal inertia, moisture regulation, and sound insulation.

Areas of Application:

- **Full thermal insulation:** Monolithic exterior walls for maximum energy efficiency
- **Interior insulation:** Interior insulation of exterior walls in existing buildings
- **Acoustics:** Acoustically effective partition walls
- **Floor insulation:** Underfloor insulation

2. TECHNICAL PERFORMANCE DATA

The following technical data provides builders and architects with a detailed insight into the properties of the Hemplith® Block. The dry bulk density is a constant **318 ± 10 kg/m³** and the thermal conductivity (λ) in a dry state is **0.069 W/m°C**.

The Most Impressive Performance Features at a Glance:

- **CO₂ Sink:** Negative CO₂ balance across all thicknesses (certified)
- **Fire Behavior:** B-s1, d0 according to EN 13501-1 (flame retardant)
- **Phase Shift:** Up to 15.4 hours at 32 cm thickness

Building Physics Characteristics by Block Thickness

Property	7 cm	11 cm	15 cm	20 cm	25 cm	28,5 cm	32 cm
U-value (W/m²K)	0,91	0,59	0,44	0,33	0,27	0,24	0,21
Phase Shift (h)	3,4	5,3	7,2	9,6	12,0	13,7	15,4
Sound Insulation Value (dB)	33	38	39	40	<42	42	43
CO ₂ Balance/m² (kg CO ₂ eq.)	-2,48	-3,9	-5,32	-7,09	-8,87	-10,11	-11,35

Fire Protection & Material

Property	Value	Standard/Classification
Fire Behavior (Material)	B-s1, d0	EN 13501-1 (flame retardant)
Thermal Conductivity (λ)	0,069	W/m°C (dry state)
Dry Bulk Density	318 ± 10	kg/m³

3. PRODUCT RANGE & DIMENSIONS

The Hemplith® Block System offers a wide range of block thicknesses for various building physics requirements. The modular standard dimension is **590 × 285 mm**; the 28.5 cm variant has the special dimension 590 × 320 mm.

Property	7 cm	11 cm	15 cm	20 cm	25 cm	28.5 cm / 32 cm
Thickness (mm)	70	110	150	200	250	285 / 320
Dry weight (kg)	3.7	5.9	8.0	10.7	13.4	17.1 / 17.1
Mortar consumption (kg/m ²)	3.5	5.5	7.5	10.0	12.5	11.58 / 15.98
Compressive strength (kPa)	150	150	150	200	300	300 / 300

Standard dimension: 590 × 285 mm | Special dimension 28.5 cm: 590 × 320 mm | Dry bulk density: 318 ± 10 kg/m³

4. APPLICATION & STRUCTURAL INTEGRITY

The Hemplith® Block combines insulation and masonry functions in a single element and is suitable for a variety of construction types. Its structural integration adheres to clearly defined limit values, ensuring safe and standard-compliant execution.

Construction Types:

Solid, skeletal, and timber frame construction; new builds and renovation of existing buildings.

Mechanical Anchorage:

The masonry must be mechanically fixed to the load-bearing structure. Typically, **4 to 5 anchors per m²** are planned.

Lintels above Openings:

- Bilateral bearing of at least **20 cm** for window and door openings
- For spans exceeding **2 m**, the minimum bearing increases to **30 cm**

Wall Construction Base:

For exterior walls and walls on damp subsurfaces, a **damp-proof course** must be provided under the first course of blocks.

Maximum Wall Heights according to Wall Thickness

Wall Thickness	120 mm	150 mm	200 mm	250 mm	320 mm
Max. Wall Height	3.20 m	4.00 m	5.20 m	6.50 m	8.00 m



HEMPLITH Block

5. PROCESSING INSTRUCTIONS

The correct processing of the Hemplith® Blocks is crucial for the quality of the finished masonry. The blocks are laid in a bond with an overlap of at least one block thickness and a joint width of approx. 3 mm.

Mortar Selection:

For interior walls: **Hemp-lime masonry mortar**. For exterior walls: **Lime-insulating masonry mortar**.

Leveling Course:

The leveling course is horizontally aligned on a **1 to 2 cm** thick mortar bed.

Pre-treatment:

Moisten blocks briefly before processing to prevent the mortar from drying too quickly.

Processing & Cutting:

Handsaws, circular saws, or electric alligator saws with **carbide or iron blades** are suitable.

Damp-proof Course:

For exterior walls and walls on damp ground, a damp-proof course must be installed under the first course of blocks.

Surfaces & Installations:

- **Plaster systems:** Hemp blocks require breathable plaster systems based on lime or clay
- **Paints:** Slaked lime or clay paints are suitable
- **Installations:** Are worked in using a wall chaser and filled with crushed block material and binder
- **Splash water areas:** Waterproof base coat is to be provided

6. STORAGE & TRANSPORT

Proper storage and careful transport are crucial to ensure the quality and performance of Hemplith® Blocks. This is the only way to guarantee the structural integrity of the building in the long term.



Outdoor Storage

Outdoor storage possible for up to **six months**; protect pallets from rain.

Indoor Storage

Indoor storage possible for up to **two years**.

Foil Wrapping

Do **not airtightly wrap** pallets in foil to prevent moisture accumulation.

Practical Tips for On-Site Handling:

- **Careful Handling:** Avoid impacts and rough handling of the blocks to prevent damage
- **Moisture Protection:** Protect blocks on site from rain and excessive moisture
- **Stacking:** Do not stack pallets too high to ensure stability
- **Delivery Planning:** Coordinate delivery times with construction progress to minimize long storage periods

Note: This data sheet is a summary of the technical specifications of the Hemplith® Block. For construction execution, the complete original documents and local building regulations must be observed.

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von Hanf Handels GmbH & Co.KG

Fraunhoferstr 3
D-25524 Itzehoe
Germany

Warehouse: Holstenstr. 73, D-25560 Schenefeld

Contact:

Phone: +49 (0)4893 2540483

E-Mail: info@vonhanf.de

Web: www.vonhanf.de

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