

# LITHOWOOD

*Warm floors with a system*



**DRY. QUICK. QUIET.**

A joint production between:

**LITHOTHERM<sup>®</sup>**

Low-temperature underfloor heating system  
with a short response time

**CEMWOOD** 

Mineral-coated wood chips

# LITHOWOOD

## The new ecological system solution featuring completely dry construction

In the renovation of old buildings and in new buildings, LITHOWOOD makes it possible to construct an impact-sound and pressure-tested floor in three layers without the need for any drying times. With the CW 2000 dry fill from Cemwood and the underfloor heating from Lithotherm, floors can be made sound-absorbing and heat-insulating in a reduced working time – without any additional input of moisture.

The tested floor structure consists of the individual components **CW 2000 dry fill** made from mineral-coated wood chips, the **Lithotherm underfloor heating** made from crushed brick or lava and a wood fibre insulation board from the company DHD Doser. This system solution offers a persuasive choice from both a processing and an ecological point of view: The completely dry structure means no drying times are needed. What this actually means is a cost saving thanks to shorter processing times and lower wage costs.

### STRUCTURE:

**The CW 2000 dry fill made from mineral-coated wood chips forms the bottom layer.** As effective thermal and impact-sound insulation, it is also

used to compensate for any irregularities and embed pipes. The fill, which is made from petrified wood and was presented with the "Best of 2012" industry award, is exceptionally stable in position and load-absorbing. Simple flattening, smoothing and pressing on produces a levelling layer which can be walked on immediately. It has very good impact-sound-reducing values and guarantees an excellent room climate thanks to its permeable properties. What is more, if water damage occurs, the chips do not swell up and remain dimensionally stable. They are resistant to mould, rot and pests.

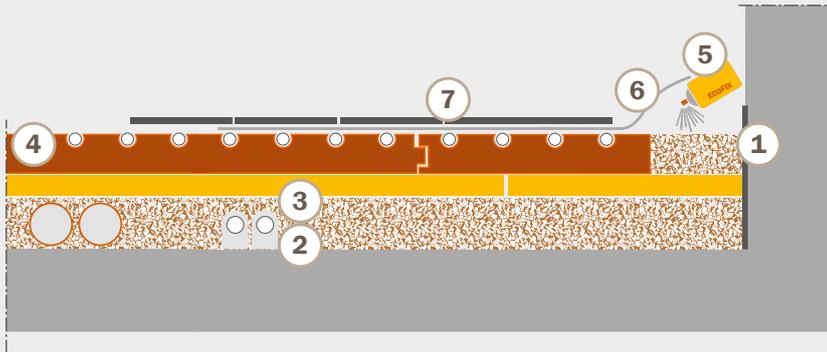
**The second component used is soft wood fibreboards from DHD Doser.** They afford even load distribution and also have a positive impact on the impact-sound and thermal-insulation parameters.

*Flooring system structure consisting of CW 2000 dry fill, fibreboard and Lithotherm underfloor heating.*



Perfect interplay of ecological components:  
**Dry, simple, efficient.**

# The economical complete solution for floors



1. Edge insulation strips
2. CW 2000 levelling fill company CEMWOOD
3. Fibreboard from company DHD Doser
4. Heating system with aluminium composite pipe 14x2 mm company Lithotherm
5. EcoFix spray for edge areas
6. Fibreglass nonwoven under tiling
7. Tiles

Sketch of complete Lithowood system structure: With a tiled floor, the binder EcoFix is used in edge areas

**The third layer is provided by the underfloor heating system from the company Lithotherm which was presented with the environmental award back in 1998.** It consists of Lithotherm moulded tiles and the heating pipe which carries the water. The moulded tiles are made from crushed bricks or lava and guarantee a high level of strength. They are laid dry resting on the fibreboards. In addition, the precise dimensional accuracy enables them to be fitted swiftly. The Lithotherm heating pipe is inserted into the lightly indented grooves in the moulded tiles by simply unrolling it. The inherent tension of the pipe guarantees a precise and permanent bond with the moulded tiles. Any floor covering – parquet, natural stone, tiles, carpet etc. – can be laid on the tiles. The heating pipe, which runs directly beneath the flooring, reacts quickly and guarantees an immediate and highly efficient transfer of the radiant heat to the room. This means lower heating costs in the long run.

## Perfect solution for edge areas

Edge areas which are inherently produced when the Lithotherm heating pipe is laid can be filled in with the CW 2000 dry fill. To allow tiled floors also to be laid in an optimum way in edge areas, CEMWOOD has also come up with an optimum solution here: The ecological binder CW EcoFix is sprayed onto the applied and levelled CW 2000 levelling fill. CW EcoFix penetrates roughly 15 mm into the layer and so solidifies the fill in the surface region. After the fibreglass mat has been put down, the required tile adhesive can easily be spread out and the tiles can be laid. CW EcoFix

can also be mixed with the mineralised wood chips to produce a reinforced fill. This produces a highly resilient fill for areas of flooring which are subjected to particularly high loads.

## AT A GLANCE:

### ECONOMICAL CONSTRUCTION

thanks to the completely dry construction method:

- quick processing
- lower wage costs

**> saves construction costs**

### ECONOMICAL LIVING

The complete system is

- very responsive
- highly efficient

**> saves heating costs**

### PLEASANT INDOOR CLIMATE

The combined solution produces

- impact-sound reduction
- permeable properties

**> enhances quality of life**

### ACTIVE ENVIRONMENTAL PROTECTION

The system components are

- exclusively ecological
- recyclable and CO<sub>2</sub>-binding

**> protects nature and habitat**

# LITHOWOOD system components

## CW 2000

Impact-sound-absorbing

### LEVELLING FILL

10 mm - 200 mm

**CW 2000 is a fill made from mineral-coated wood chips with a defined chip form which can be walked on. Thanks to the special combination of materials, it is possible to combine the positive properties of wood and mineral substances in a sensible way.**

#### PROPERTIES

The CW 2000 levelling fill is to be classified due to its settling behaviour (in line with DIN 18560-2) like a "compound form" and is

- ▶ positionally stable
- ▶ load-absorbing
- ▶ able to absorb a high level of heat and impact sound
- ▶ quick to process (see CEMBOT page 5)
- ▶ capable of being walked on immediately
- ▶ tested under building hygiene regulations in accordance with AgBB (Committee for the Health-Related Evaluation of Building Products)
- ▶ resistant to pests, fungal attack and rot
- ▶ permeable
- ▶ ecological

#### BENEFITS

- ▶ saves construction and heating costs
- ▶ enhances quality of life and living environment
- ▶ protects the environment



## TECHNICAL DATA FOR CW 2000

Chip size	mm	4 to 8
Fire behaviour	Class	Bfl-s1
Thermal conductivity	W/mK	0.075
Impact-sound reduction in the Lithowood system	dB	24
Bulk density	kg/m <sup>3</sup>	approx.
Installation height	mm	10 - 200
Packaging unit	Litres	50
Building inspect. approval	Z-23.11-1852	



*The Lithowood system generates outstanding impact-sound reduction values of 24 db with an overall installation height of 15.5 cm incl. the flooring.*

#### OTHER FIELDS OF APPLICATION

- ▶ under dry screed
- ▶ under wet screed
- ▶ under mastic asphalt screed

#### MATERIAL REQUIREMENT PER CM HEIGHT

Material requirement	l/m <sup>2</sup>	10
Uniform load distribu-	kg/m <sup>2</sup>	3.6



## LITHOTHERM

Low temperature

### UNDERFLOOR HEATING SYSTEM

Installation height 45mm

It is well known that energy cannot be destroyed but it can be wasted – especially when heating. The LITHOTHERM® system heats up rooms much more quickly than conventional underfloor heating systems. And it does so using much less energy.

#### Increase in energy efficiency

The system is installed using a dry method. The heating pipes run in grooves directly beneath the flooring. This means they can transfer the heat much faster to the floor and the whole room. This allows rapid heating and cooling and high thermodynamics. The level of energy efficiency is boosted significantly.

The LITHOTHERM underfloor heating system delivers the full thermal radiation after approx. 25 minutes and creates a comfortable room climate for several hours even after the heating system has been switched off.

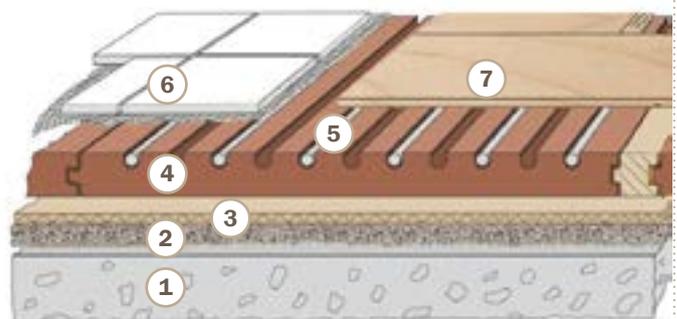
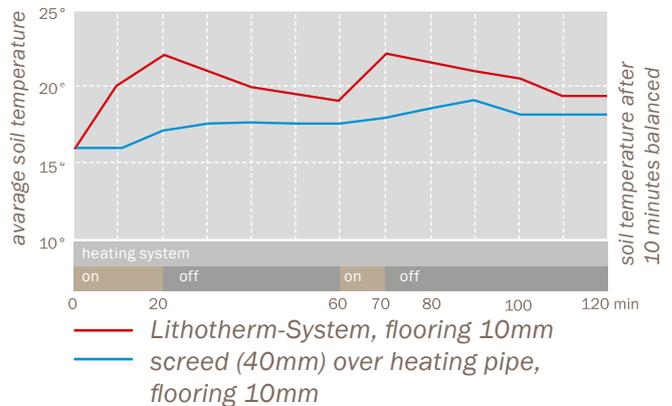
#### Active environmental protection, pleasant room climate

The natural raw materials make a sustainable contribution to reducing CO<sub>2</sub> and create an ideal room climate. Why? The raw materials of clay, wood and lava deliver perfect regulation of heat and moisture. And they are noted for their consistent quality and high strength.



#### Patented and tried and tested

The low temperature heating system has been trialled in practice and is protected by patent. It is suitable for all types of flooring.



#### System sketch:

1. Concrete base.
2. CW 2000 dry fill.
3. Soft wood fibre-board.
4. Lithotherm moulded tile.
5. Heating pipes.
6. Tiles.
7. Wooden flooring

#### PROPERTIES

- ▶ short response time
- ▶ low supply temperature
- ▶ regulates heat and moisture
- ▶ consistent quality
- ▶ high strength
- ▶ low installation height (45mm)
- ▶ ecological
- ▶ durable

#### BENEFITS

- ▶ saves heating costs
- ▶ protects the environment
- ▶ creates a pleasant indoor climate
- ▶ suitable for all types of flooring: tiles, natural stone, parquet, boards, cork, carpet, sports surfaces, etc

# CEMBOT: the indispensable aid

## Levelling and smoothing in one step

### With the CEMBOT levelling device you can process CW 2000 in record time

Following detailed research, we have managed to perfect the product lines from the area of levelling fill. To round off the package on offer, we have also optimised the installation phase for the dry fill. Our latest coup is the CEMBOT. It levels floors and smoothes off dry fills in one step.

Even the adjustment of the levelling device is very straightforward. The adjusting screws are used to balance the device and the laser which is also supplied automatically aligns itself. This means: CEMBOT is ready to be used in a very short space of time.

#### **The strengths of the levelling device are particularly evident in areas which are hard to reach.**

This is because with the narrow "blade" the fill can be spread with millimetre accuracy even between heating pipes. Even large areas can be fitted flush in record time - compared to using a conventional smoothing gauge. That is not all: Even the process of levelling the fill on inclined planes, for example in level-access shower areas, can be carried out without any problems by tilting the laser. And all this is performed adopting a working posture that protects the back.

**The integrated rechargeable battery with a capacity of around 12 hours makes it possible:** the CEMBOT can be transported cordlessly without any need for complicated alterations in the room or building. Then there is also the low overall weight. At just 22 kg, the device made of aluminium can be moved effortlessly.

**What this means in summary:** The fast processing, the low weight and the technology that facilitates work enable a much healthier way of working. And the best bit to finish: the saving on time and costs means that the CEMBOT pays for itself after processing an area of just 1000 m<sup>2</sup>.

#### **AT A GLANCE:**

- ▶ very easy to set up
- ▶ low weight
- ▶ cordless and easy to move
- ▶ rapid installation and smoothing
- ▶ straightforward working
- ▶ back-friendly working method
- ▶ can handle even hard-to-reach areas
- ▶ millimetre-precise distribution
- ▶ reduces working times
- ▶ saves wage costs
- ▶ procurement costs are quickly paid off

#### **WITH CEMBOT YOU SAVE REAL MONEY**

*CEMBOT: the indispensable aid*



# The LITHOWOOD complete system in use

## House, kindergarten or church: LITHOWOOD is the right solution



*The perfect combination: heating coils and moulded tiles from Lithotherm in combination with the Cemwood CW 2000 fill*



*Large-scale building project: floor renovation in a church in London*

*Lithowood in a family house: the component elements make the system ready to be used at any angle.*



# LITHOWOOD

*Warm floors with a system*

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## **DESIGN AND IMPLEMENTATION**

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