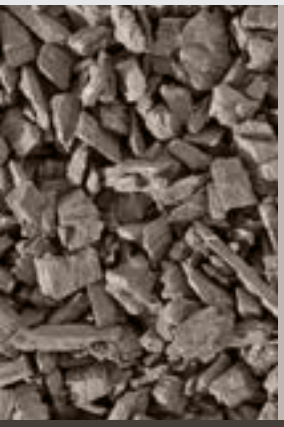
CEMWOOD

Mineral coated wood chips



LOAD ABSORBING LEVELLING FILL

CW 2000

- **Cost-effective and time-saving**
- **Stable and absorbs loads**
- **No risk of subsequent undulations, cracks and depressions in the floor**

MINERALISED WOOD

natural like wood
resistant like stone

TECHNICAL SPECIFICATION

Dated: March 2013

CW 2000

Is a fill made of wood shavings with a mineral coating and defined cubic chip form. The special material combination lets the positive properties of wood and mineral substances be practically combined.

FIELDS OF APPLICATION

The special product properties enable the product to be installed with high stability

- ► under dry screed
- ► under wet screed and
- ► under mastic asphalt screed

without the risk of subsequent undulations, cracks or depressions in the floor.

BENEFITS

Due to its settling behaviour, the levelling fill CW 2000 is classified as a “compound form” and

- ► absorbs a high degree of impact sound
- ► absorbs loads
- ► saves costs thanks to its rapid installation without water and without drying times
- ► can be immediately walked on and extended
- ► is permeable
- ► has been inspected for building hygiene according to AgBB (German Committee for the Health-Related Evaluation of Building Products)
- ► and is resistant to pests, fungal attack, rot and mould

Approved by Deutschen Institut für Bautechnik
DIBt-No. Z-23.11-1852

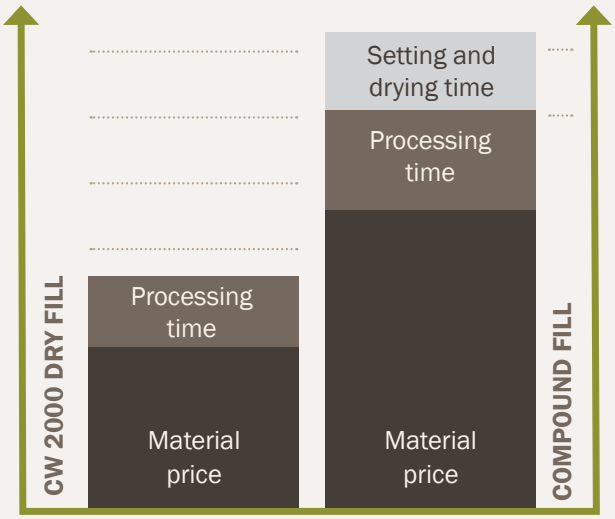
TECHNICAL DATA

Chip size	mm	4 to 8
Fire behaviour	Class	B2
Thermal conductivity	W/mK	0.075
Impact-soundreduction	dB	18
Bulk density	kg/m³	approx. 370
Minimum installation	mm	10
Packaging unit	litres	50

MATERIAL REQUIREMENT

Installation height	cm	1
Material requirement	l/m²	10
Uniform load distribution	kg/m²	3.7

TIME AND COST COMPARISON



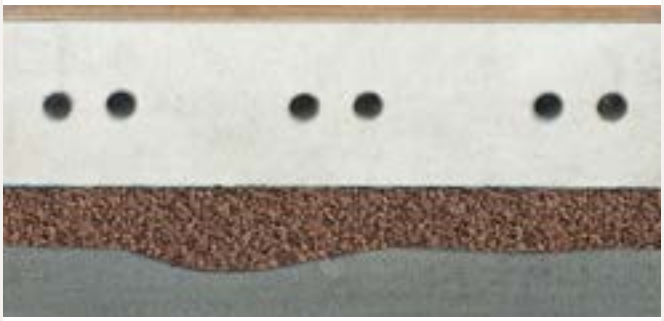
Compound fills require water to set and so require a long drying phase. For CW 2000, in contrast, no drying is required. Other work can carry on right after the filling is installed.

CW 2000
EXAMPLE APPLICATIONS
INSTALLATION OPTIONS

SOLID CEILING

Wet screed

a) Flooring*
b) Wet screed construction **
c) Synthetic coated paper (foil)
d) Levelling fill CW 2000
e) Solid ceiling***



Solid ceiling with wet screed

Dry screed

a) Flooring*
b) Dry screed element**
c) Levelling fill CW 2000
d) Solid ceiling***

Solid ceiling with dry screed (floating)

Fibreboard

a) Boarding*
b) Fibreboard cover plate**
c) Levelling fill CW 2000
d) Solid ceiling***

Solid ceiling with fibreboard

Wooden beam ceiling

a) Flooring*
b) Dry screed**
c) Levelling fill CW 2000
d) Load-bearing substrate with trickle protection
e) Cavity fill (e.g. CW 1000 from CEMWOOD)
f) Wooden beam ceiling with trickle protection***

Wooden beam ceiling

* *boards, tiles, parquet, carpeting, etc.*
** *according to manufacturer specifications*
*** *with edge insulation strips from the top edge of solid ceiling to the top edge of the structure*

SEAMLESS COATING

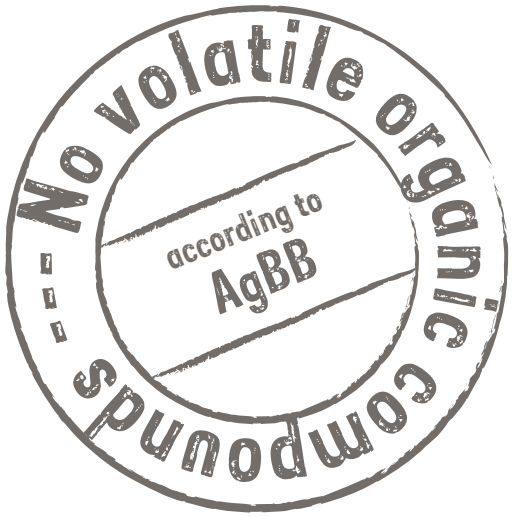
Every chip of the CW 2000 fill is coated in a high-strength mineral shell that provides effective protection against pests, mould, fungal attack and rot.

HIGH LOAD ABSORPTION, LOW DEFORMATION

The optimal stability of the fill enables subsequent work steps to be performed immediately once the chips have been properly installed. The fill is effectively prevented from migrating. Test results confirm the extraordinarily high load-absorbing properties with marginal deformation.

EASY TO INSTALL AND REMOVE

The CW 2000 fill is installed as a dry product, while the special grain shape and grain size distribution allows heating pipes and other components to be embedded easily and accurately, while unevenness in the substrate can also be levelled out. Installation runs smoothly and efficiently.

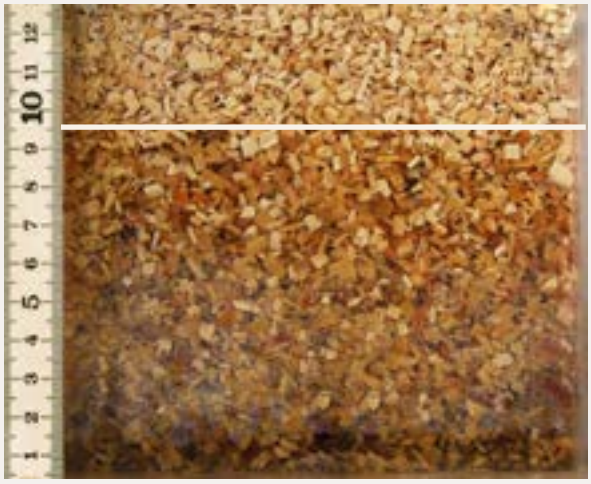


NO CHEMICAL ADDITIVES

Chemical additives of every type are specifically avoided in the manufacture of CW 2000. Only wood chips from native, sustainable forestry and select mineral binders are used. This is reflected in the classification of the product as a soil additive and in the building hygienic clearance certificate.

A COMPLETE SYSTEM THAT REDUCES IMPACT SOUND

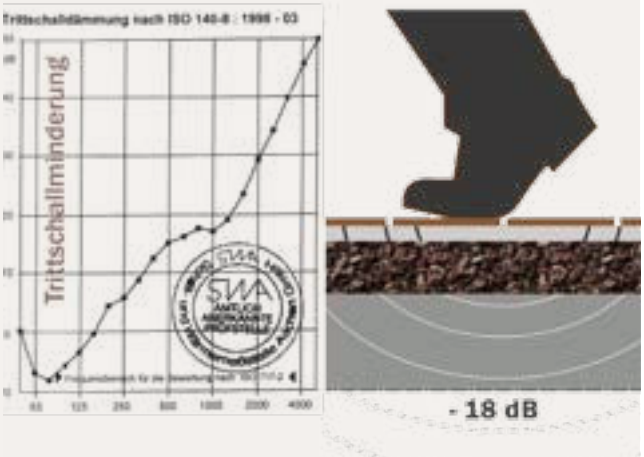
A special feature of CW 2000 fill is its outstanding ability to reduce impact sound. This is due to the unique material combination of the chips, which consist of a soft, springy core and solid shell.



95 mm water level after 7 days for untreated chips (top), 10 mm water level for chips with mineral coating (bottom)

NO WATER ABSORPTION

CW 2000 fill is capillary-breaking. No water is passed on to neighbouring chips. Wet chips dry quickly and keep their material properties.



Extract from the test report, with thanks to the SWA (Sound and Heat Metering Body, Aachen)

INDUSTRY AWARD: BEST OF 2012

The combination of durability, ecology and outstanding product properties didn't just impress our satisfied customers.
The expert jury of the Lower Saxon Ministry for Economy, Labour and Transport and the Association of German Engineers (VDI) distinguished our CW 2000 with the BEST OF 2012 award.

Test **GRAIN STRENGTH**

Test standard DIN EN 13055-1, Annex A, Process 2

Test result With a result of 15.3 N/mm², mineral-coated wood chips achieved an extremely high compressive strength of the grain, especially with regard to their low gross density of 710 kg/m³.

Test **COMPRESSIBILITY OF AN NON-COMPACTED FILL**

Test standard Based on DIN 18560-2

Test result The non-compacted fill of mineral-coated wood chips recorded a compressibility of 0.3 mm for a vertical uniform load distribution of 5 kN/m². The recorded value was therefore 10 times lower than the maximum value of 3.0 mm permitted by the standard.

Test **IMPACT SOUND IMPROVEMENT**

Test standard DIN 52210-PF-D

Test result An impact sound improvement of 18 dB was measured for a construction of 40 mm chips with mineral coating as a loose fill under 40 mm of AE screed

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Test **FIRE BEHAVIOUR**

Test standard DIN 4102-1

Test result The smoke development of the chips was classified as low, no dropping of combustible parts was detected and the flames self-extinguished, resulting in a rating of building material class B2.

Test **FROST/DE-ICING SALT RESISTANCE**

Test standard DIN EN 1367-1, Annex B

Test result The investigated chips provided an average loss of mass of 5.9 %. This is below the limit value of 8.0 % for normal aggregates. Mineral-coated wood chips are therefore classified as resistant even when applying the strict criteria for normal aggregates.

Test **THERMAL CONDUCTIVITY**

Test standard DIN EN 12667

Test result The thermal conductivity of the mineral-coated wood chip fill was λ_{10} = 0.075 W/mK. The mineral coating does have an impact, but this is not considered significant.

Test **RELEASE OF VOLATILE ORGANIC COMPOUNDS**

Test standard DIN EN 16000-5

Test result A fill of mineral-coated wood chips releases 0.045 mg/m³ of volatile organic compounds (VOC), which is significantly under the limit value of 8.0 mg/m³. From a health perspective, therefore, the fill is also suitable for use in residential buildings.

Test **TERMITE RESISTANCE**

Test standard DIN EN 117

Test result Termites are unable to exploit mineral-coated wood chips. As expected, the insects attacked only the comparison sample of untreated chips.

Test **RESISTANCE AGAINST BROWN ROT**

Test standard DIN EN 113

Test result No loss of mass resulting from destructive basidiomycetes was detected in the mineral-coated wood chips, while the comparison sample of untreated chips lost between 24% and 42% of its mass.

Test **MOULD RESISTANCE**

Test standard DIN EN 60068-2-10

Test result No mould growth was recorded under the relevant temperature-controlled test conditions for wood chips with mineral coatings. Mould was clearly visible on over 25% of the material surface of untreated chips.

Test **WATER ABSORPTION**

Test standard Based on DIN EN 1097-6

Test result The mass-related water absorption was reduced in mineral-coated wood chips, when compared with untreated chips, from 188 % to 65 %.

Test **CAPILLARY WATER ABSORPTION**

Test standard Based on DIN EN ISO 15148

Test result While mineral-coated wood chips are classified as water-repellent with a water absorption coefficient of 0.28 $kg/(m^2 h^{0.5})$, untreated wood chips, with a water absorption coefficient of 2.24 $kg/(m^2 h^{0.5})$are classified as very absorbent.

Test **DRYING BEHAVIOUR**

Test standard Based on DIN EN ISO 15148

Test result Water-saturated mineral-coated wood chips achieved the equilibrium moisture content in the same
time as water-saturated untreated chips.

Test **SHRINKING AND SWELLING**

Test result Radial swelling of 6.1 percent was recorded for untreated wood chips in a microclimate chamber. For mineral-coated wood chips, the characteristic swelling fell to 0.6 percent.

Test **MINERALOGICAL COMPOSITION OF THE WOOD CHIPS**

Test result Energy-dispersive x-ray spectroscopic investigations and scanning electron microscope recordings showed a considerable content of various mineral phases in the wood microstructure. The deposition of the minerals improved the properties of the wood, including its durability, water absorption and hygric deformation.

We recommend adjusting the installation process with the relevant local conditions and, if necessary, installing a sample to confirm the suitability of our product.

PUBLISHER AND MANUFACTURER

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