

SIKANEWS

SIKA AIMS TO PRESERVE THE ENVIRONMENT WITH HEMP-BASED MORTAR

Sika is committed to sustainability and has developed a hemp-based facade mortar. The product is designed to lower the use of cement in construction, and to reduce CO₂ emissions. After the successful launch in France, the product will now also be marketed in other European countries.



Hemp-based facade mortar Parnatur®

Sika is committed to sustainability and wants to achieve a 12 % reduction of CO₂ emissions per ton sold by 2023. Furthermore, a key focus of R & D is on developing sustainable products. Every new product must combine higher performance with additional sustainability benefits.

A hemp-based facade mortar with the brand name Parnatur® is one of Sika's latest sustainable products developed by the former Parex Group, which was taken over by Sika in 2019. It is the first "easy-to-spray" thermal and phonic insulation hemp-based mortar. In comparison with conventional cement-based mortars, its production is far more environmentally friendly, and its good insulation properties help to reduce energy consumption. Following seven years' development work and a successful market launch in France, Sika will now introduce the mortar in other countries.

REDUCTION OF CONSTRUCTION INDUSTRY'S CO₂ FOOTPRINT

The objective of the R & D team was to replace cement in the new facade mortar with renewable raw materials and to make the production process more environmentally friendly.



"We were quite serious about the use of alternative materials in mortars. Hemp has long been well-known in the construction sector as a good insulation material, although it was not previously used on an industrial scale."

Evelynne Prat, Corporate Technology Head for Cementitious Technology, and former Head R & D at Parex Group

REDUCING ENERGY CONSUMPTION IN BUILDINGS BY USING HEMP-BASED MORTARS

As with conventional facade mortar, the mixture of hemp and a binding agent is stirred, sprayed onto the wall and smoothed. A protective layer is then applied over the top. The hemp mortar can also be used in interiors for insulation from heat, cold, and noise.

BENEFITS OF THE HEMP-BASED SOLUTION

Hemp-based mortar is a 100% natural solution with a high CO₂ storage coefficient and is fully recyclable. Thermal conductivity achieved by PARNATUR® is very low: 0,066 W/m.K (at 23°C - 50% relative humidity). The main characteristics of hemp-based mortar in this application are:

- PROVIDES THERMAL AND PHONIC INSULATION BENEFITS THANKS TO THE CONTINUOUS ENVELOPE THAT PREVENTS THERMAL LEAKAGE
- SUITABLE FOR BOTH NEW CONSTRUCTIONS AND FOR RENOVATION OF EXISTING BUILDINGS
- PERFECT FOR RENOVATION AND LEVELING OF UNEVEN SURFACES SINCE THICKNESS OF THE COAT CAN BE ADAPTED
- RESPECTS THE BREATHABILITY OF OLD WALLS PROVIDING OPTIMUM AIR INTERIOR COMFORT
- LOW CARBON FOOTPRINT MATERIAL. CONSISTENCY OF THERMAL INSULATION THANKS TO AN EVEN DISTRIBUTION OF HEMP AGGREGATES IN A CONTINUOUS LIGHT WEIGHT CEMENTITIOUS MATRIX
- EASY TO APPLY WITH A STANDARD SPRAYING MACHINE
- QUICK SETTING AND HARDENING, ALLOWING STRUCTURES TO BE SECURED VERY EARLY ON

For the new product, the stem of the hemp plant is used which is finely chopped beforehand. "What we use is actually waste", says Evelyne Prat.

Sika also seeks to use the spraying process developed for the hemp mortar for other materials. In the USA, where the cultivation of hemp is limited, finely-chopped maize plants could be used instead. In Asia, waste from rice production would make a good substitute for hemp scraps.

Demand for environmentally friendly building materials is particularly strong in China. "China is trying to limit CO₂ emissions", Evelyne Prat explains. In southern countries, she says, hemp mortar could

also be used to cool spaces: "When it's very hot, hemp gives off moisture which has a cooling effect. This could substantially reduce the use of air conditioning."

RENOVATION WILL FURTHER BOOST DEMAND

It is likely that the EU's plans to make the renovation of buildings more protective of the environment will further boost demand. "If buildings are better insulated", says Evelyne Prat, "they consume less energy. That will increase the demand for products like this one."

Sika's goal is to broadly market the new product and build up a volume business.



Parnatur® is easy to apply with a standard spraying machine

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FURTHER INFORMATION

- [Find out more about Sika's hemp-based mortar Parnatur®](#)