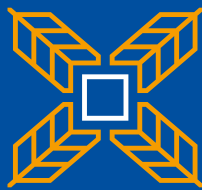


Building ecologically with straw



maxit[®] strohpanel

For drywall construction and insulation



A new take on traditional material

- ✓ **CO₂ absorbing**
- ✓ **Sustainable**
- ✓ **Free of emissions**
- ✓ **Fire resistant**
- ✓ **Tough**



Samples required?
Order more here!

A new take on traditional material

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maxit strohpanels – ecological & innovative

One building material, two uses

maxit strohpanels are a chemical- and plastic-free alternative to conventional building materials. The sustainable straw carrier boards for lime plaster made of natural straw are ideal for drywall construction, while the ecological straw insulating panels can be used for interior and exterior insulation. The process for manufacturing these products is low energy and they are recyclable as well as industrially compostable.



maxit Kalk-Stroh-Putzträgerplatte

For drywall construction

- + Interior applications
- + Made from purely ecological materials
- + Sustainable and low energy manufacturing process
- + Can be used like conventional interior plaster carrier boards

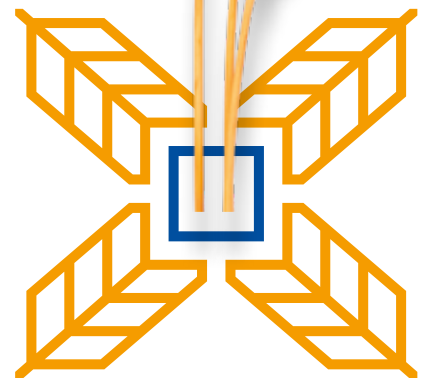


maxit Stroh-Dämmplatte

For insulating solutions

- + Suitable for interior and exterior use
- + Building material provided by nature
- + Completely sustainable and chemical-free manufacture
- + Can be used like conventional insulating panels

maxit strohpanels – building ecologically with straw



Building in harmony with nature

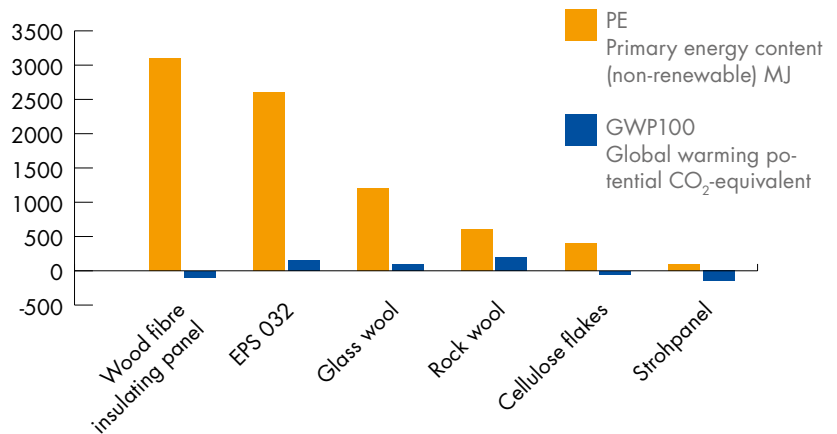
Green building is growing increasingly in importance. Ecological alternatives to conventional building materials are needed not only for new buildings, but also when it comes to energy-related or sustainable refurbishment.

However, not all natural materials are suitable for use in house construction. As with conventional building supplies, it is important that ecological construction materials are both durable and safe.

Straw – the natural building material

To meet the growing demand for natural building materials, the **maxit strohpanel** has now been developed: for both drywalling construction and insulation. maxit uses straw, a traditional building material and an agricultural by-product which is available locally and in large quantities – a decisive advantage, especially in times of raw material shortages. It is estimated that about 20 per

Primary energy content (non-renewable) and global warming potential of selected materials/m³



cent of the straw produced in agriculture remains unused. And straw does not require additional arable land either, so it does not compete with food crops.

For centuries, straw has been used in house construction due to its permeability and robustness. What is more, straw has an outer layer of silica which acts as a natural fire protection. During growth,

straw binds carbon and thus reduces the impact of CO₂ on the atmosphere. 1 tonne of straw stores about 420 kilograms of carbon – an incredible capacity which remains largely unexploited. The great potential of this material, mainly used in animal husbandry today, has now been revived by **maxit** in the form of sustainable plaster carrier boards and insulating panels.



Layers of a maxit strohpanel in drywall applications



Advantages of straw as a building material

- + Ecological, annually renewable natural product
- + Cultivated locally without requiring additional land
- + Readily available
- + Agricultural by-product
- + Cultivation and processing are environmentally sustainable
- + Reduces CO₂ in the atmosphere
- + Natural heat protection
- + Low waste disposal costs
- + Chemical-free
- + Resource-saving
- + Suitable for allergy sufferers
- + Industrially compostable

The manufacturing process

The manufacture of **maxit strohpanel** is 100 per cent ecological. Not only is the raw material itself of natural origin, but a special lime-based binder has also been developed to replace man-made binders such as PU adhesives. The fact that the raw material is locally available means that manufacture is uncomplicated and that quality control and assurance are also straightforward.

Since loose straw is not economical to use as a building material, **maxit** developed a special manufacturing process in which straw is squeezed into shape together with the ecological binder by

applying pressure and heat. This production process requires only a small amount of additional energy, about a mere 5 per cent. Consequently, the entire product – from raw material to finished panel – is manufactured in a completely eco-friendly manner, is industrially compostable, and meets all the requirements for a robust and safe building material.

When the material's positive properties are also taken into account, the contribution **maxit strohpanel** make to climate protection is actually twofold: first, due to the low consumption of energy



during their manufacture and, second, thanks to the use of a carbon-binding material.

maxit strohpanel – uses for drywall construction

Kalk-Stroh-Putzträgerplatte



Kalk-Stroh-Putzträgerplatte – Straw carrier boards for lime plaster

maxit strohpanels are also ideal for interior use as carrier boards for lime plaster and are an ecological alternative to plaster carrier boards made of gypsum. The plaster carrier boards made of straw can be installed and plastered like conventional interior plaster carrier boards.

As they are made of renewable raw materials, they ensure a pleasant and healthy indoor climate. The combination of lime or clay plasters and straw enhances the feeling of comfort in your home and encourages green building methods. Straw is a robust raw material and in conjunction with the specially developed

manufacturing process the resulting plaster carrier board is extremely resistant to age, dimensionally stable, and boasts a high level of durability. The boards should only be used on the inner sides of outer walls with prior constructional approval. They are not suitable for use in rooms with a high level of humidity.



100 per cent sustainable

Stud frames made of wood or metal are suitable substrates for the straw carrier boards for lime plaster. It is essential that the stud frame is level, stable, load-bearing, and suitable for holding the mounting components.

Dimensions

- Width: 625 mm
- Length: 1250 mm
- Thicknesses: 10/22/30/40/50 mm
- Board surface area: 0.78 m²

Constructional properties

Bulk density	220 kg/m ³ (+/- 15 kg/m ³)	
Thermal conductivity reading	0.059 W/(m·K)	
Rated thermal conductivity value λ_B	0.069 W/(m·K)	
Reaction to fire	E according to DIN EN 13501 (normal flammability according to German federal state building regulations)	
Bending strength/modulus of elasticity based on DIN EN 310: Board thickness N/mm ² *	10 mm	1.39
	22 mm	1.17
	30 mm	0.95
	40 mm	0.69
	50 mm	0.42
Transverse tensile strength based on DIN EN 319: Board thickness N/mm ² *	10 mm	0.0072
	22 mm	0.0062
	30 mm	0.0052
	40 mm	0.0040
	50 mm	0.0029
Thickness swelling based on DIN EN 317: Board thickness %*	10 mm	57.8
	22 mm	52.8
	30 mm	47.8
	40 mm	41.5
	50 mm	35.2
Moisture content	max. 13 M %	

*interpolated values



Kalk-Stroh-Putzträgerplatte – one building material, a host of advantages



Raw material

- + Annually renewable
- + Resource-saving
- + Agricultural by-product
- + No additional arable areas
- + Available in large quantities

Properties

- + Easy installation
- + Low weight
- + Stability
- + Industrially compostable

CO₂ reduction

- + Local raw materials
- + Straw stores carbon and removes CO₂ from the atmosphere

Fire safety

- + Natural fire protection due to silica layer
- + Oxygen is squeezed out during manufacture
- + No smouldering behaviour
- + Self-extinguishing
- + Classified according to German federal state building regulations as normally flammable (B2 according to DIN 4102-4 or E according to DIN EN 13501)

Sustainable manufacture

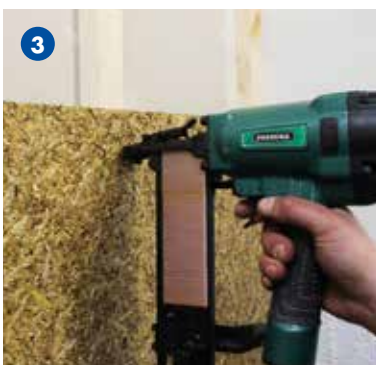
- + Short transport distances
- + No chemicals or plastics used
- + Uncomplicated quality assurance and control

Healthy living

- + Optimal humidity regulation
- + Protects against overheating
- + Suitable for allergy sufferers
- + Ensures a healthy indoor climate
- + Free from solvents and formaldehydes
- + Emission tested according to the AgBB evaluation scheme (test report number L 4284 FM) by Bremer Umweltinstitut (Bremer Environmental Institute)



New building material, familiar installation process



Order as usual

You can get our innovative Kalk-Stroh-Putzträgerplatten (straw carrier boards for lime plaster) together with all system components from your local specialist building materials supplier.

Grown first, then mounted

- 1 Drywall constructions made of wood or metal must always be dry as well as plumb and flush.
- 2 Simply cut the plaster carrier board to the desired size using standard cutting equipment (jigsaws, band and circular saws; straight and angled cuts are possible).
- 3 Then fasten the plaster carrier board to the stud frame or sub-structure using wide crown staples or flat head phosphate coated screws.
- 4 Cut out openings for possible installation parts such as flush-mounted sockets using a suitable tool.
- 5 Both lime- and clay-based plasters can be used for plastering.
- 6 After the waiting time specified for the clay or lime plaster has been observed, the plaster carrier board can be coated (optional) with a permeable limewash (for example **maxit** kreasil 5020 and **maxit** kreacal 5030).

maxit strohpanel – for interior and exterior insulation

Stroh-Dämmplatte



Coming soon!

Die Stroh-Dämmplatte – Straw Insulating panels

Completely toxin free and needing little primary energy but providing an excellent level of insulation – all this hardly seemed possible until now. Insulating panels based on **maxit strohpanel** are 100 per cent renewable, ideal for interior and exterior use and will offer a particularly ecological option in future.

For a direct comparison with traditional insulation methods based on polystyrene, the straw insulation was subjected to practical tests in cooperation with Hof University of Applied Sciences. Two test houses with extensive measuring technology ultimately delivered convincing results.

maxit strohpanel for use as insulating panels are available soon.

Insulate and protect the environment



Sustainable

- + Resource-saving
- + Excellent LCA
- + Carbon neutral and industrially compostable

Fire safety

- + Classified as normally flammable
- + No smouldering behaviour
- + Self-extinguishing
- + Silica layer protects against combustion
- + Use in closed render/plaster systems
- + Classified according to German federal state building regulations as normally flammable (B2 according to DIN 4102-4 or E according to DIN EN 13501)

Raw material

- + Binds carbon while growing
- + Not needed agricultural by-product
- + Available in large quantities
- + Annually renewable
- + No additional cultivation areas

Sustainable manufacturing process

- + No chemicals or plastics used
- + Low energy requirement
- + Local raw materials
- + Straightforward quality assurance and control

Indoor climate

- + Improved drying behaviour
- + Prevents growth of mould and algae
- + Healthy indoor environment
- + Suitable for allergy sufferers
- + Free from solvents and formaldehydes

Insulation

- + No overheating in summer
- + Stores heat during winter
- + Noise and sound protection
- + Very good thermal insulation value

For more information visit www.maxit-strohpanel.de

More innovative insulating solutions



 **ecosphere**
technology by maxit

www.maxit-ecosphere.de

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