



EKOPANELY CZ[®]

What is an ekopanel?
...and what are
its features?

ECONOMICAL

How and where
can it be used?



An ekopanel is an ecological, diffuse open construction panel. It is compressed under high temperatures and pressure from wheat straw without using a bonding agent and bound with recycled cardboard.

The first panels were constructed after 1945 in Great Britain. After obtaining the know-how and developing its own technology, the EKOPANELY CZ company began to manufacture this building board from the year 1999 under the Ekopanel brand in Jedousov in Přelouč. In the year 2008 the ekopanel won the **Gold Award of the Czech Construction Academy** as an ecological construction product appropriate for the construction of low-energy and passive wood structures. Part of the ekopanel is exported to **European Union countries and beyond**, for example the Republic of South Africa, Egypt, Algeria, Haiti, Viet Nam and others.

What is an ekopanel?

More information on ekopanel, their features and applications in construction can be found at www.ekopanely.cz

...we shape it according to customer requirements

...but you can also work with it easily using manual tools

100% recyclable and ecological

...and fire resistant



Excellent sound insulation...

Hard, robust, and mechanically durable!

...and what are its features?

The properties of ekopanel reduce construction costs and enable quality and economical accommodations.

A recycled paper surface and a wheat straw filling. Neither material is necessarily high tech, and yet they manage to bestow on ekopanel a range of incredible characteristics.

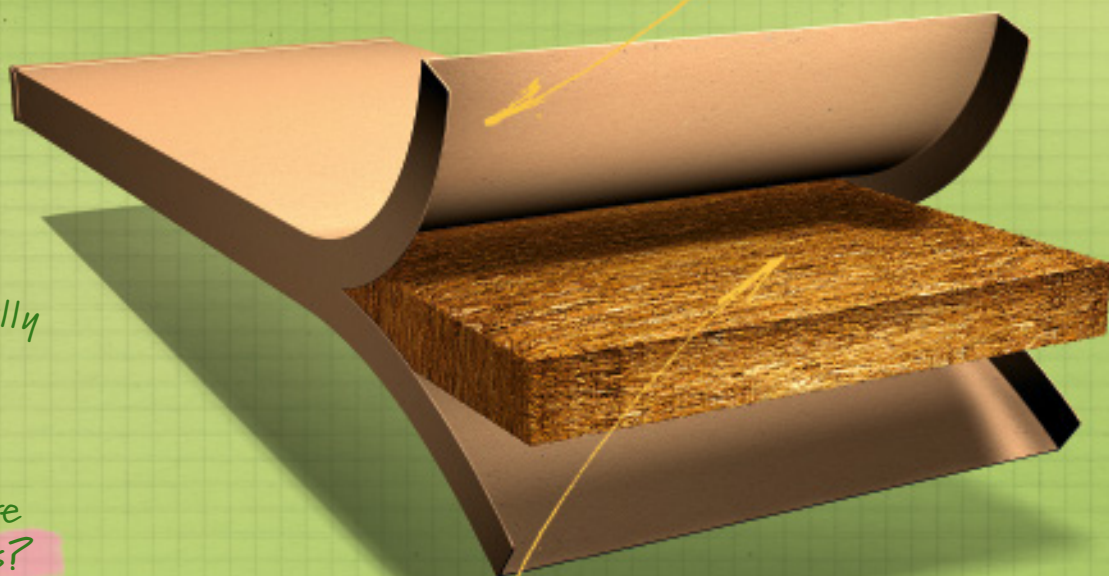
The first of these by far is their **heat accumulation capability**, which significantly reduces heating costs, making ekopanel appropriate for the construction of all kinds of homes.

Their **mechanical properties** enable the construction of self-load bearing walls without additional load-bearing structure or further insulation.

As straw and paper are organic materials which can easily be disposed of after the structure is liquidated, an ekopanel is **completely recyclable**. Ekopanel is delivered to the customer already altered to the required length, thereby reducing waste. After removing surface alterations they can even be composted. The manufacturer even gathers the sawdust from the production process for reuse. All of this

makes ekopanel for all practical purposes a **waste-free construction material**.

Ekopanel transmits water vapour. During periods of increased humidity they absorb moisture into the internal pores of the structure, only to release it again during periods of reduced humidity. This mechanism has a **positive impact on the indoor microclimate**, above all during winter heating.



recycled paper

straw core

Exceptionally accumulates heat ...also insulates well



Use it anywhere you need a quick and simple structure from quality materials.

Ekopanel is intended for construction of all types of wood structures. They are particularly appropriate for the construction of energy-efficient homes. They can be very easily used, for example, to make partitions. They are self-load bearing and therefore it is not necessary to build load-bearing partition structures with insulation. The investor **saves on total costs**.

Due to their heat accumulation capabilities Ekopanel is often used for the **construction of loft spaces**, where they contribute to

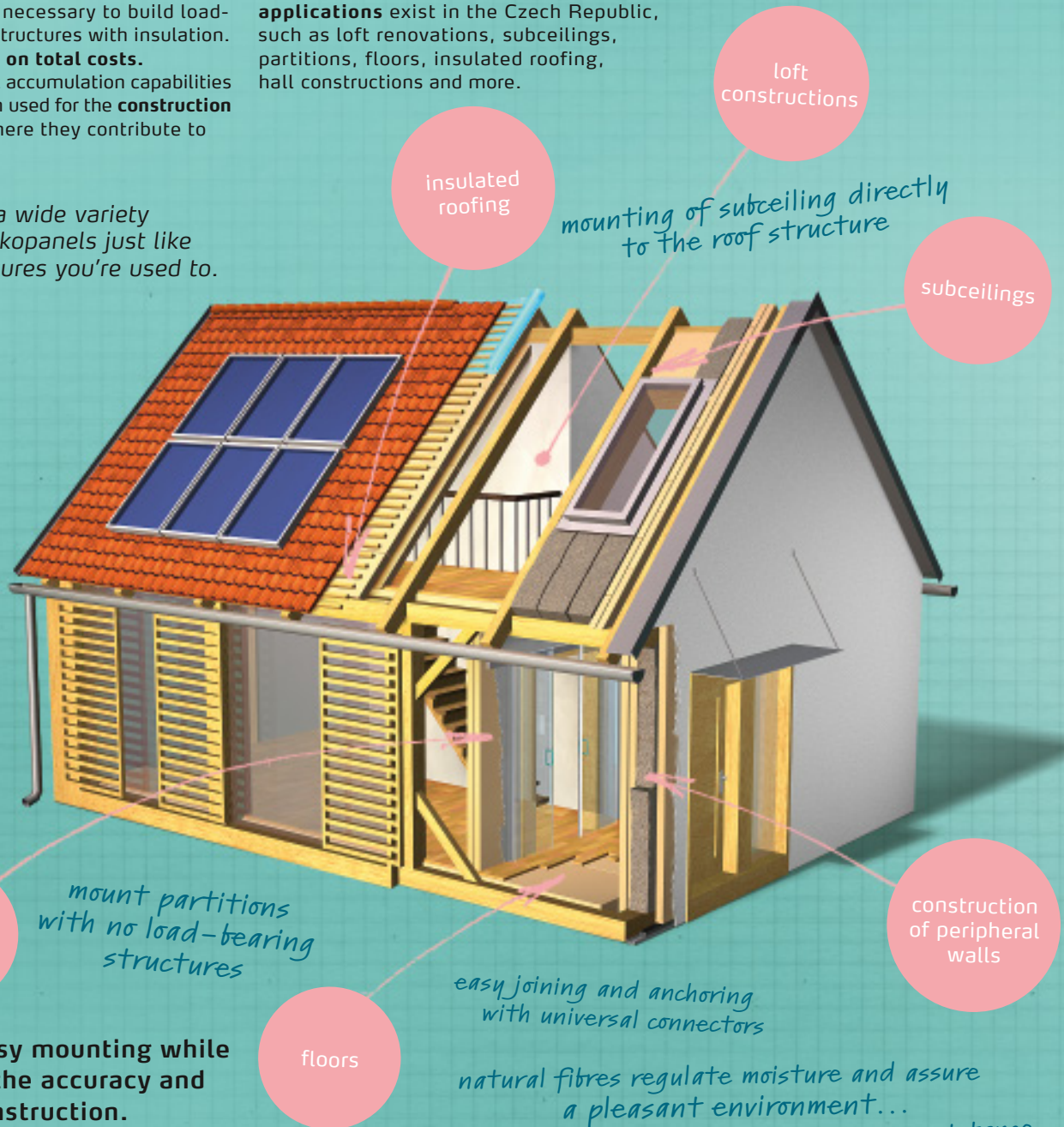
You can apply a wide variety of finishes to ekopanel just like the brick structures you're used to.



COMMON SENSE!

temperature stability. Ekopanel also do not transmit vibrations and structural shifting to the finish. For this reason **no deformation (cracking) of the finish occurs**. At present approximately **400 wood structures and countless independent applications** exist in the Czech Republic, such as loft renovations, subceilings, partitions, floors, insulated roofing, hall constructions and more.

Where and how can it be used?



Quick and easy mounting while maintaining the accuracy and quality of construction.

Whether you're a professional, do-it-yourself, or regardless of your relationship to construction, you are certain to appreciate the simplicity with which you can work on an ekopanel. Working with ekopanel recalls working with wood, and for this reason they can be modified **using common hand tools**, such as a rotary or band saw, drill and slot cutters. For mounting or installing ekopanel, **universal connectors, screws and bolts suffice**. You don't need any special load-bearing structures or machines. Another

advantage is their **high-speed and "dry" mounting process**. You can put the partition together within a mere few minutes.

On the surface of the ekopanel you can apply a wide selection of finishes, such as wallpaper, paint, putty, veneer, etc.

For mounting fixtures **you won't need anchors**. The typical practice is to drive the screw directly into the straw core without drilling a pilot hole. In a subceiling an ekopanel can bear a load weighing up to 75 kg on a 5x100 mm screw.

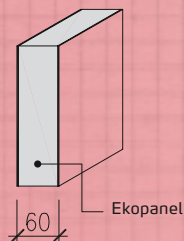
...small diffusion resistance lets the structure breathe

easy
mounting

Ekopanel applications

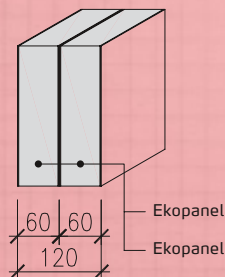
Simple partition

heat penetration coefficient:
 $U = 1,264 \text{ W/m}^2 \text{ K}$
 fire resistance:
 PO = 30 min
 soundproofing:
 $R_w = 33 \text{ dB}$



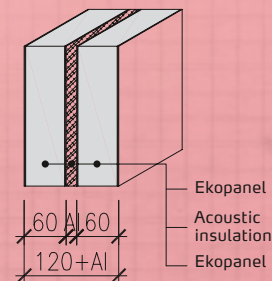
Double partition

soundproofing:
 $R_w = 45 \text{ dB}$



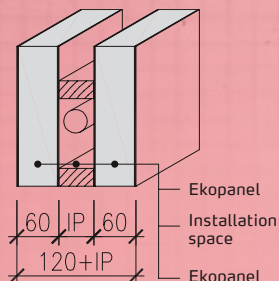
Acoustic partition

heat penetration coefficient:
 $U = 0,716 \text{ W/m}^2 \text{ K}$
 soundproofing:
 $R_w > 45 \text{ dB}$



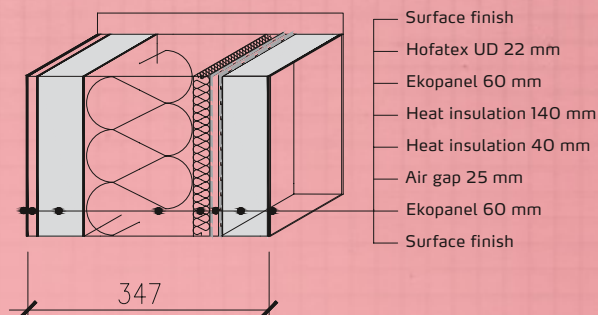
Instalační příčka

heat penetration coefficient:
 $U = 0,675 \text{ W/m}^2 \text{ K}$



Obvodová stěna EKO 2

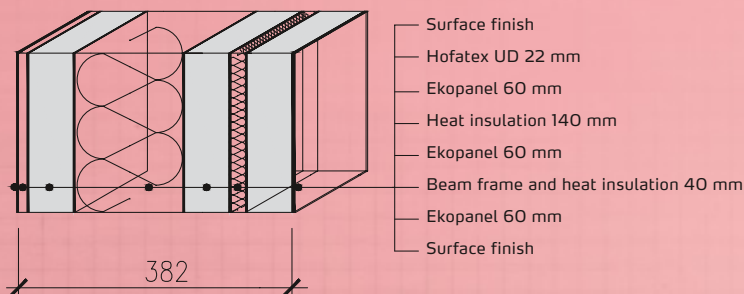
heat penetration coefficient:
 $U = 0,156 \text{ W/m}^2 \text{ K}$



Peripheral wall EKO 3

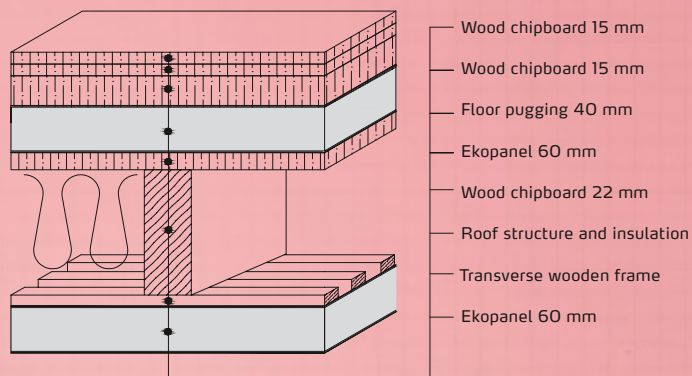
heat penetration coefficient:
 $U = 0,143 \text{ W/m}^2 \text{ K}$

universal



Roof structure

heat penetration coefficient:
 $U = 0,156 \text{ W/m}^2 \text{ K}$



Mechanical/physical properties

Ekopanel is manufactured in two widths, 800 mm and 1200 mm

Dimensions

width 800/1200 mm × thickness 58 mm (+ 2 mm tolerance) × length 1200 – 3200 mm

Ekopanel is formatted to the requirements of the customer

Values of heat insulation magnitude

heat transfer coefficient:

$\lambda = 0,099 \text{ Wm}^{-1} \text{ K}^{-1}$, $R = 0,5858 \text{ m}^2 \text{ KW}^{-1}$

diffusion resistance: $RD = 4,6 * 109 \text{ ms}^{-1}$

diffusion resistance coefficient: $\mu = 9,7$

heat penetration coefficient:

$U = 1,04 - 1,39 \text{ W/m}^2 * \text{K}$

according to the construction layout,
 season, and heat flux

Acoustic dampening values

acoustic dampening of simple partition: 33 dB

acoustic dampening of double partition: 45 dB

Average density

area 19 – 23 kg/m²

volume 379 kg/m³

Fire resistance classification

Simple partition EI 30 D3

Subceiling EI 45 DP3

Load-bearing external wall cladding REI 45

fire response: category E

Your supplier:



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 More information at www.ekopanely.cz

