

Panels for low-energy houses

OPS 300 self supporting wall panel



- simple and fast assembly with large variability of constructions
- 10 times less energy consumption
- high fire safety



Low-energy demand of constructions is environmentally friendly

Comparison of buildings according to the energy demand

Older buildings	more than 200	kWh/m ² per year
New buildings	to 100	kWh/m ² per year
Energy efficient houses	50 – 70	kWh/m ² per year
Low-energy houses	15 - 50	kWh/m ² per year
Passive houses	5 – 15	kWh/m ² per year
Zero energy houses	0 – 15	kWh/m ² per year

Advantages

- an enjoyable living with minimal costs for heating
- environmentally friendly
- the fire safety

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Characteristic of the wall panel

The wall panels **OPS 300** are a sandwich construction comprised of an expanded polystyrene (EPS) and the wood cement board Krupinit. The Krupinit creates the cover of the polystyrene core and also ensures the strength of panels and the protection against the fire and a mechanical damage. Its porous structure absorbs the sound perfectly and it is an excellent base for applying plasters. The core of the wall panel, which consists of the expanded polystyrene of the thickness 200 mm, is an ideal heat insulator. The complete wall panel is especially heat insulating, high mechanically resistant, sound insulating and fire safe. Using these wall panels we create the buildings with a long lifetime, hygienically and healthily safe.

Use

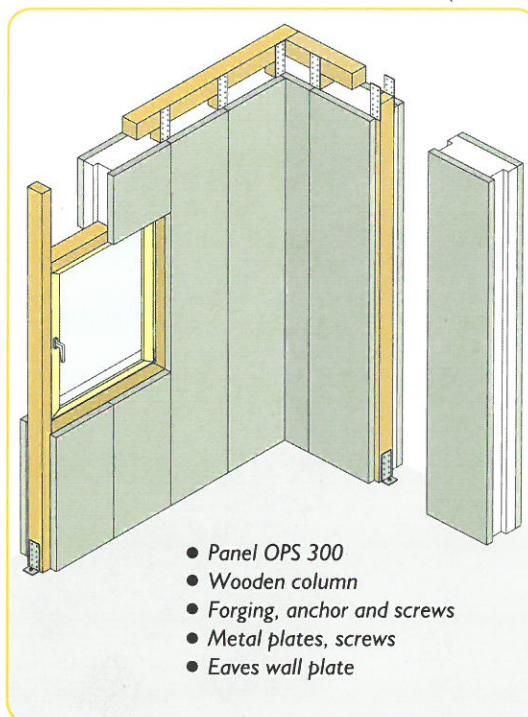
The wall panels **OPS 300** are used for the construction of outer walls of family houses and blocks of flats and civic buildings to the height of 2 floors. They reach double bigger heat insulation parameters of the outer walls than classical materials and therefore they are intended for the construction of low energy houses and passive houses.

Assembly

Constructions are realized with the building system HIPS (Hyper Insulation Panel System) which was established in Slovakia and has used the wall panels **OPS 300** and wooden beam KVH of the cross – section 140 x 80 mm for building of outer walls. The wooden beams ensure the load bearing capacity of the walls. During an assembly they are integrated into the panel grooves and linked to them via the PUR foam. The particular wall panels created a wall as well as the wall panels and the floor are connected with the PUR foam.

Steel anchors, screws and fixings are used to fix wooden beams to the base. The connection of a ceiling with a wall is ensured with interconnection of wooden pillars and a wooden top plate using the screws and steel plates.

As a superficial finishing of panels for interior areas there are used plasterboards panels of 12,5 mm thickness and for external areas there are used mineral plasters of 15 mm thickness.



Technical parametres of the panel

- the dimensions 300 x 500 x 2680 mm
- the weight 70 kg
- the heat resistance $R_{min} = 6,0 \text{ m}^2 \cdot \text{K/W}$, (2 times more than the standard value)
- the acoustic absorbability with plaster – 0,15
without plaster – 0,80
- the air acoustic resistance of the wall $R_w = 44 \text{ dB}$
(it meets the values of the interval from 30 to 45 dB)
- the fire resistance of the wall 120 minutes (4 times more than the standard value)
RE 120 / REI 120 / REW 120
meets the European standards
- the resistance to a crashit

Other parametres

- health propertiesit does not contain any harmful substances to health
- environmental propertiesneither the panels production nor the waste disposal from the panels burden the environment.
The production is not also energy demanding.
It means it is an ecological product.

Advantages

- a perfect heat insulation – very low operating costs
- the low weight and the thickness of the panels (an easy handling without any help of a hoisting mechanism with good using of a built area)
- the fast and reliable application of plasters is thanks to the firm and uneven surface
- the fast, simple and cheap assembly (the rough construction is realized in 21 days)
- the huge variability of constructions (the using of the panels 50 cm in width)
- the resistance to ligniperdous insect, rodents, birds, dry rot fungus and mildew
- the long lifetime of a building (mechanical durability and stability of a building, fire safety provide the long lifetime of buildings)
- harmlessness to human health
- fire safety
- the low investment demands of the heat sources (the power of the sources is in the range from 4 to 6 kW)

Notes

R_w – it is the index of the air acoustic resistance calculated according to STN EN ISO 717-1. It evaluates the acoustic insulating ability of partition walls.

Certificates

Certificate of Conformity C_{uk}

Certificates from the testing

1. the Test Certificate - the number A20 - 1/06
2. the Test Certificate - the number A20 - 2/06
3. the Test Certificate - the number A20 - 3/06
4. FIRES CR 125/05USD
5. FIRES CR 176-06-NUPS
6. 50/160S/12/06
7. 50/161S/12/06
8. 50/162S/12/06

CSK

