



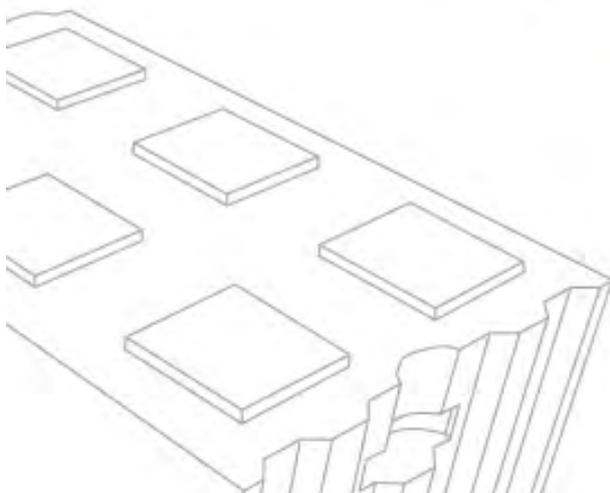
Szerelvénybolt Kft.
ÉPÍTELMÉPÉSZETI ÉS FŰTŐSZERKE SZAKÁRHÁZ
SZERELVENYBOLT.HU



Superbránis



ENERGY-SAVING
BUILDING STRUCTURE



More than a block...

ABOUT US

Our company is concerned in manufacturing and trading revolutionary products providing solution to the major challenges of the construction industry throughout the world. Polystyrene concrete in panel and in bulk forms, and Sixbau “**block**” are suitable for the construction of buildings with **AA*** classification; also, polystyrene concrete in panel and in bulk forms offers a solution for the **modernization of old buildings**.

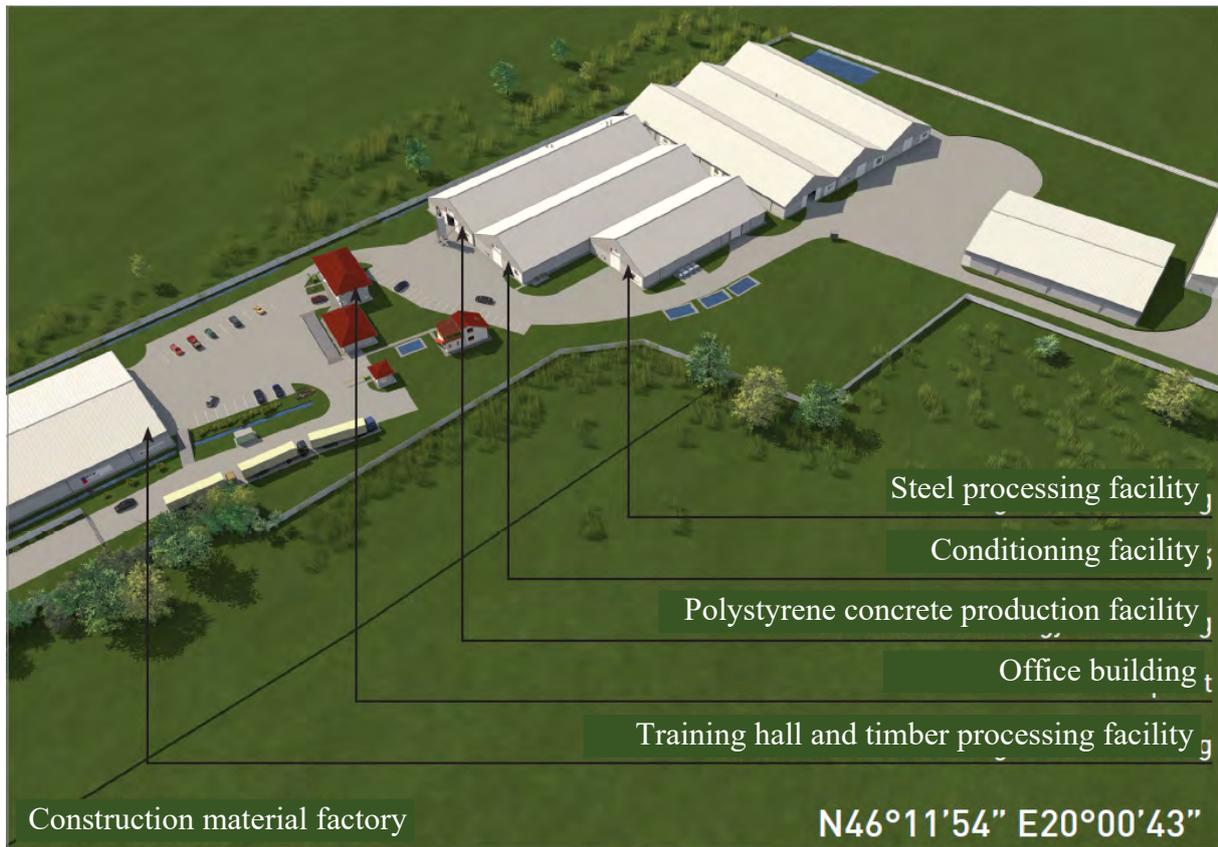


SZERELVÉNYBOLT KFT. CONSTRUCTION MATERIAL PLANT IN RÖSZKE

One of our main activities is construction material manufacturing performed at our site in Rösztke. Raw material production is intended to serve the needs of the domestic market and those of the nearby countries. These primarily include satisfying the basic raw material needs for buildings constructed using Wyw Block and Sixbau technology.

Moreover, the training of designers, contractors and sales persons is also performed here, where participants are informed about the particularities of the above mentioned technologies.

Furthermore, research-development are also performed here as we are aware of the fact that continuous renewal is necessary in our fast-changing world together with the development of newer and newer, better and better products.



*for classification, please, ask for assistance from a building energy expert

POLYSTYRENE CONCRETE PRODUCTION FACILITY

Within the factory polystyrene concrete is produced and processed here, panelled and bulk polystyrene concrete, and Sixbau “block” are also produced here. Furthermore, the recycling of polystyrene packaging material and left-over insulating materials is also possible.



CONDITIONING FACILITY

Newly produced polystyrene concrete is placed here until reaching the state when it becomes suitable for processing.



OFFICE BUILDING

The office building provides place for theoretical training related to Löglen and WYW Block technologies. Furthermore, planning and administration activities are performed here, and also lectures and meetings can be held here.



TRAINING HALL AND TIMBER PROCESSING FACILITY

As the name says Wyw Block and Sixbau technology-related practical training is performed here, and this hall also provides place for processing timber for roof structures, and assembly works of nail board roof structures on a special workbench.



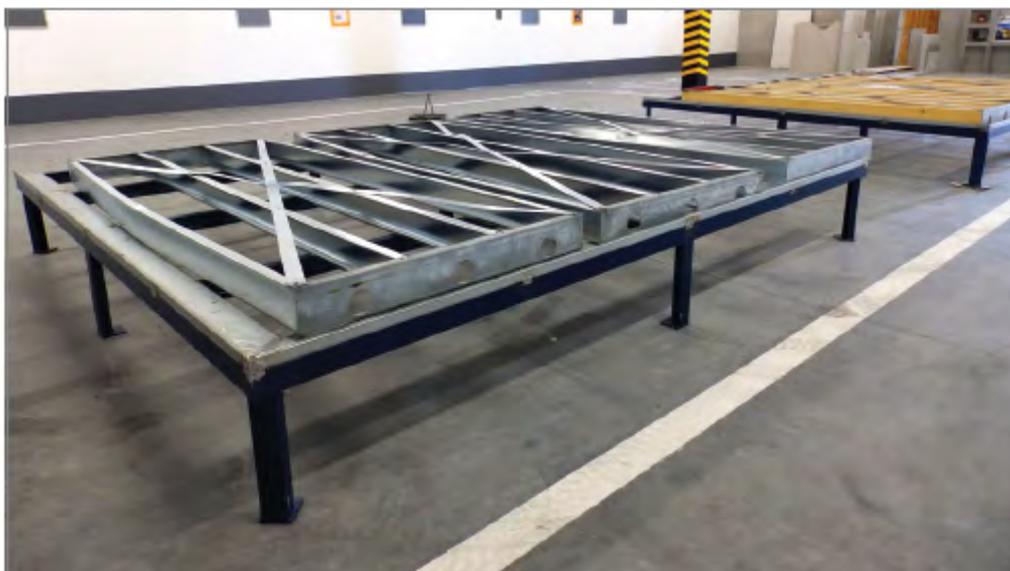
STEEL PROCESSING FACILITY

Steel structures used for Löglen and WYW Block construction systems are manufactured here.



FURTHER CAPACITY

The factory complex of Szerelvénybolt Kft. in Rösztke provides place for storage, workshop pre-assembly of building structures, and it also has capacity for starting further activities.



POLYSTYRENE CONCRETE

Polystyrene concrete has been on the building industry market for several decades, however, its use has not spread worldwide. Polystyrene is used for building insulation as it provides a cheap solution, but from a fire protection aspect it is a great disadvantage that toxic smoke is generated when the material burns. On the contrary, polystyrene concrete is basically non-combustible, it provides extremely good fire-protection, and releases minimum smoke when burning.

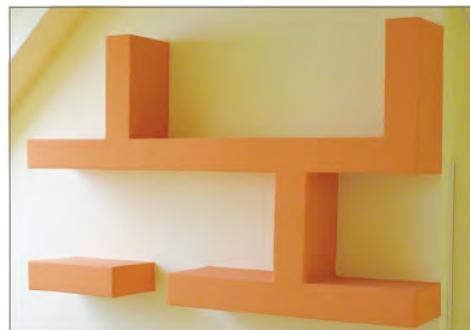
Conventional concrete is applicable primarily for constructing load-bearing structures, while the building structure constructed of polystyrene concrete also has excellent heat-insulating capacity, it does not require further thermal insulation. The two technologies combine well as polystyrene concrete can be used as infilling wall with a reinforced concrete pillar framework, and the pillars can also be insulated using polystyrene concrete panels, avoiding the formation of thermal bridges. The durability of polystyrene concrete rivals that of conventional concrete.

To make polystyrene concrete cement and water are mixed with EPS balls, therefore it basically differs from conventional concrete by the use of EPS balls instead of gravel and sand. It also provides for the advantages of the material, that is its heat-insulating and fire-protection capacity, and significantly lower bulk density compared to conventional building material. The bulk density of polystyrene concrete is 300 kg/m^3 , allowing for producing building elements of larger size, making implementation works faster.

Polystyrene concrete is easy to process, it can be cut to size using simple tools, making grooves for pipes or wires is extremely fast and easy to carry out.

Polystyrene concrete is excellent for posterior thermal insulation of already existing buildings, and for forming dividing walls, space dividers, shelf-systems, or other indoor or outdoor decor elements, loft conversion, forming the sloping layer of flat roofs. Its application is similar to that of plasterboard assembly systems.

Since it is very easy to work with this material, and due to its bulk density larger elements can be formed, it allows for faster construction, and due to its easy processing simpler works can be performed even with one's own hands.



Using polystyrene concrete allows for constructing a so-called thermo-house, which is a result of a “breathing” construction system free of thermal bridges, which reserves energy, provides a healthy and natural atmosphere for the people living in the house.

PRODUCTS

Polystyrene concrete heat-insulating panel

Our polystyrene concrete thermal insulation panels Sixbau Profi Panels (using original EPS pearls) and Sixbau Green Panels (using recycled EPS pearls) are manufactured at the polystyrene concrete production facility of our company, based on national technical assessments A-133/2014 and A-152/2014 issued by *ÉMI Nonprofit Kft.* These products are available with the following dimensions:

Length: 1500 mm, 3000 mm
Width: max. 600 mm
Thickness: 30-200 mm

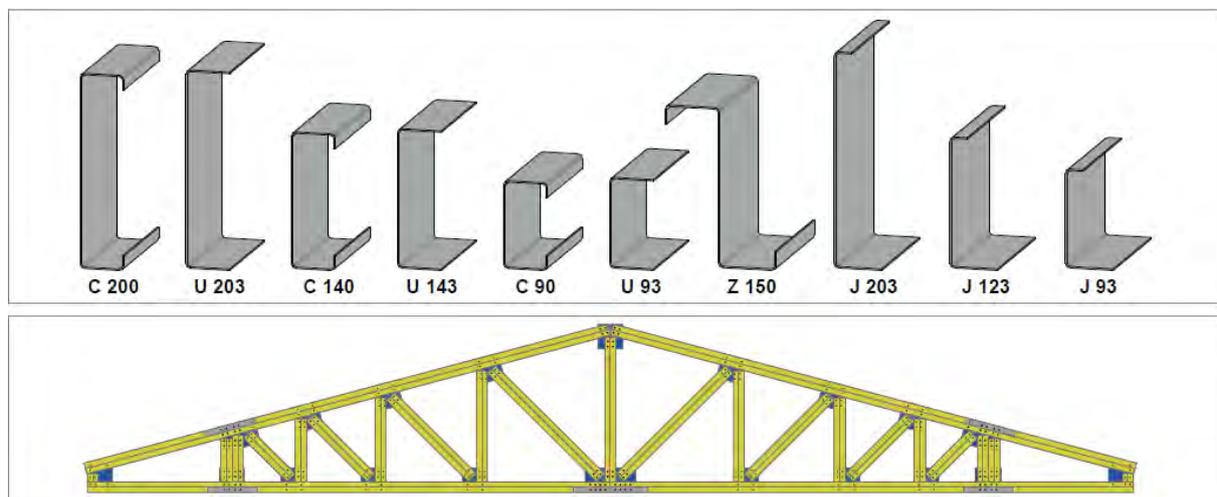
Polystyrene concrete heat-insulating panels are excellent for forming outdoor or indoor stuccos, thermal insulation, lodgement, unilateral or bilateral formwork, attic walls, dividing walls or as a heat-insulating layer on flat roofs.

Timber structures

Our timber processing facility provides place for cutting to size elements required for manufacturing timber roof structures, and if necessary, they are treated with special purpose timber protecting agent. Elements cut to size are used to manufacture prefabricated nail board roof structure elements according to standard MSZ EN 14250:2010. Manufacturing is carried out based on the technical drawings of the required roof structure. For detailed information, please, visit the website: sixbau.hu.

Steel products

“U”, “C”, “Z”, “J” profile cold-bent steel products and steel structures made of them are manufactured at our steel processing facility according to standard MSZ EN 1090-1:2009+A1:2011. Wall panels, floor beams, truss girders of roof structures required for building structures are prefabricated from steel profiles, on workbenches.



CHOOSING THE OPTIMUM SOLUTION

Would you like to build a detached house? Are you planning to build a multi-storey apartment block? Would you like to commence constructing a frame-structure office building?

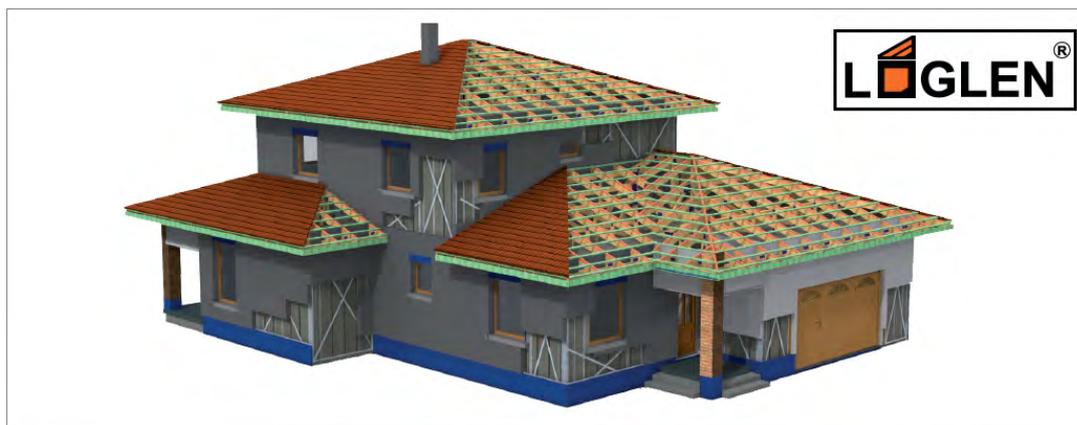
The Löglen technology can provide an ideal solution for the construction of detached houses, office and community buildings, and based on statistical calculations, multi-storey apartment blocks. Moreover, it can be a good option for farm buildings (for animals) constructed taking thermal properties into account, and also for the implementation works of cold-storage warehouse frameworks.

The Löglen technology combines the load-bearing capacity of a steel or timber framework with the excellent properties of polystyrene concrete. The result is a low-maintenance, healthy, safe and viable home.

The combination of a Sixbau “block” as infilling wall and a pillar framework structure can provide you an ideal solution. Furthermore, Sixbau “block” is an effective building element of single-storey or multi-storey residential buildings.

LÖGLEN TECHNOLOGY

A building constructed using the Löglen technology looks exactly as if it was constructed of conventional building materials, however, due to its properties it provides much more. Buildings constructed using the Löglen technology comply with the requirements set out for the **AA** energetic classification of building structures, without any added thermal insulation. The maintenance cost is low, the lifetime is minimum 50 years in case of a steel framework, making it a good choice on the long run as the durability of polystyrene concrete rivals that of conventional concrete.



LOAD-BEARING STEEL FRAMEWORK

Load-bearing steel frameworks are made from 1.5 mm thick dip-galvanised steel “U” (93; 143; 203) and “C” (90; 140; 200) profiles.

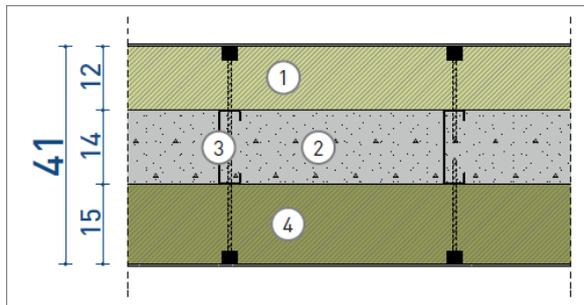
LOAD-BEARING TIMBER FRAMEWORK

Load-bearing timber frameworks are made from 60x140 mm end-to-end glued, dried, multi-layered timber, using steel “U” profiles at the bottom and top of the wall modules.

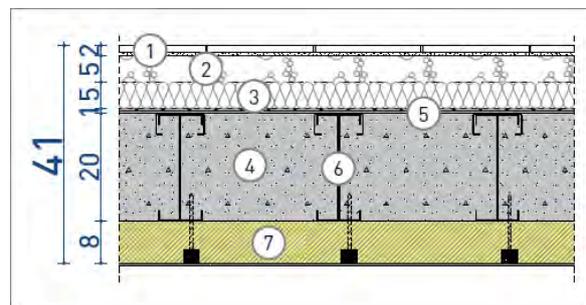


STEEL FRAMEWORK STRUCTURE ELEMENTS

STEEL FRAMEWORK LOAD-BEARING WALL STRUCTURE



STEEL FRAMEWORK LOAD-BEARING FLOOR STRUCTURE



1, 12 cm	Polystyrene concrete panel
2, 14 cm	Cast polystyrene concrete
3, 14 cm	Steel wall pier
4, 15 cm	Polystyrene concrete plate
Weight:	145 kg/m ²
Thermal characteristics:	U=0.21 W/m ² K

Fire-retardant values:	(REI 90) A2* ¹
	(REI 240) A2* ²
	(REI-M 240) A1* ³

Acoustic proofing: 38 dB

*¹ simple steel framework

*² double steel framework

*³ double steel framework + 6 cm fire-protective overcasting

1, 2 cm	Covering
2, 5 cm	Estrich
3, 5 cm	Step sound insulation
4, 20 + 1 cm	Cast polystyrene concrete
5,	Load-distributing grid
6, 20 cm	Steel beam

7, 8 cm	Polystyrene concrete plate
Weight:	250 kg/m ²
Load capacity:	395 kg/m ²
Fire-retardant values:	(REI-120) A2* ⁴

Span: Max. 6.00 m

*⁴ C90 profile reinforced floor

LÖGLEN CONSTRUCTION TECHNOLOGY APPLICATION

Löglén construction technology includes the construction of the building structure. The process does not include foundation and finishing works necessary for turnkey status. To use Löglén construction technology steel and timber framework construction element sets manufactured by *Szerelvénybolt Kft.* are necessary. The element sets are subject to the European Technical Assessment No. ETA-16/0953 issued by *ÉMI Nonprofit Kft.*

Below the construction process of a house with a floor space of 100-120 m² is shown using Löglén construction technology.

MANUFACTURING AND FACTORY PREFABRICATION

During the foundation works the wall modules and the roof structure are preassembled at the *Szerelvénybolt Kft.* plant in Rösztke, including manufacturing, preparation of the polystyrene concrete products necessary for constructing the building structure, and the procurement and arrangement of other necessary auxiliary materials.



ASSEMBLY ON SITE

Upon curing of the building foundation the assembly works of the building structure can commence on site. This includes the following processes:

Erecting preassembled steel structure 2 days



Roof structure assembly on site 3 days



Screwing on polystyrene concrete panels 4 days



Internal dividing wall assembly 1 day



Polystyrene concrete casting 3 days day



Surface sanding 1



Roof structure lathing, sheeting 2 days**Building structure total 16 days**

In ideal circumstances the building structure of a house with a floor space of 100-120 m² is finished within 16 days. During the on-site assembly the engineering works can be commenced, so this technology reduces the time necessary for the construction works of the building.

WYW BLOCK CONSTRUCTION SYSTEM

The basic element of our construction system is the Sixbau “block” masonry unit made of polystyrene concrete.

Sixbau Block has only inherited the form of its conventional companions. Parameters of the Sixbau Block are much better, due to its size the implementation is faster, and on the other hand, its weight provides for easy handling.

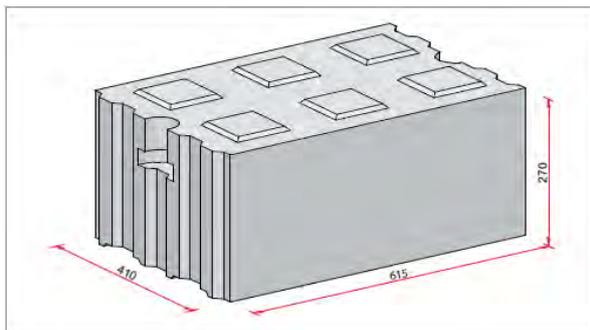
This construction system is perfectly suitable for constructing single-storey or multi-storey houses, and also for constructing infilling walls of framework buildings, allowing for creating a building with excellent thermal insulation and fire-protection values.

The WYW Block construction system allows for a faster completion of higher buildings, larger apartment blocks compared to conventional technologies, and to construct energy-saving buildings with **AA** energetic classification.

A great advantage of the system is that, compared to the competition, it is capable of providing the required thermal insulation values without any posterior thermal insulation. This allows for saving time, space and money.

The basic element sets of the system are the Sixbau Profi or Green Block 41 masonry unit, and the Sixbau Profi or Green Block 34 masonry unit.

The masonry units are post-processed solid units cast of polystyrene concrete, with the following dimensions:



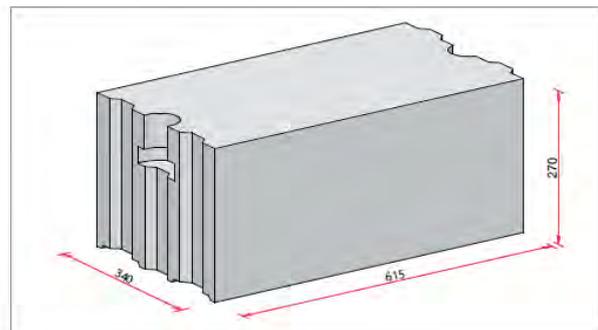
41

Length: 615 mm

Width: 410 mm

Height: 270 mm

Prescribed weight: 20.13 kg



34

length: 615 mm

width: 340 mm

height: 270 mm

prescribed weight: 16.79 kg

The products are manufactured using original (Profi) or recycled (Green) EPS pearls.

Sixbau masonry units are provided with a national technical assessment number issued by *ÉMI Építésügyi Minőségellenőrző Innovációs Nonprofit Kft.*, No. A-37/2015.



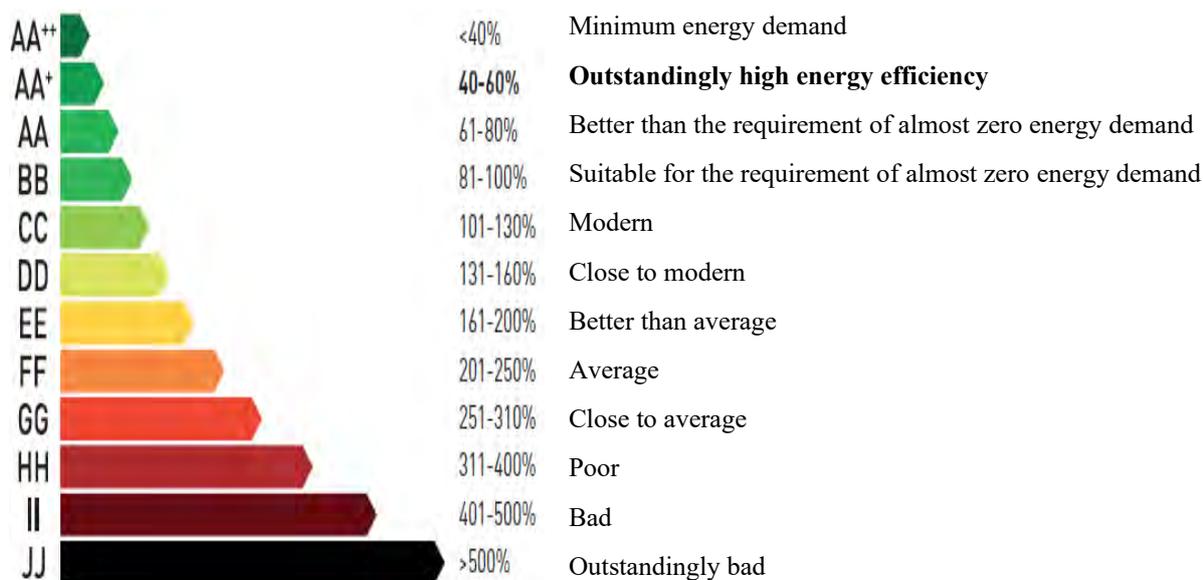
Based on the assessment, besides low bulk density (300 kg/m³) it has an excellent thermal insulation capacity (41 cm thick wall U=0.18 W/m²K). Moreover, it is fireproof for 240 minutes without any additional layers. The fire protection class of the masonry units is A2 (s1, d0), therefore they are non-combustible.

No need to worry about mildew or fungi as the wall is **vapour permeable and free of thermal bridges**, so the installation of air-handling units is not in all cases necessary.

The masonry units are easily conjoined and fixed using adhesive foam minimizing water usage and the amount of moisture penetrating the building material. Therefore, the construction works are not dependent on the season or the weather, it can be used up to -10°C.

Compared to the weight of conventional building materials **Sixbau** block is lighter, and due to its large size it allows for **fast and easy** construction works; furthermore, it makes the weight of the building structure less, allowing for reducing the dimensions of the building foundation and supporting structure, achieving significant savings.

Also due to its material most of the waste generated during the production and the use of the **Sixbau** masonry unit is **recyclable**. It contributes to the **environment friendly** nature of the product and the technology, which requirement is outstandingly important nowadays.



OTHER FIELDS OF USE

- Lower cost implementation of fire protection and thermal insulation for industrial halls.
- Flat roof insulation of industrial halls, department stores.
- Restoration of historic buildings, façade design (due to its low weight and formability).
- Timber floor replacement by light construction floor, saving time and money.
- Suspended ceiling construction.
- Decoration installation.



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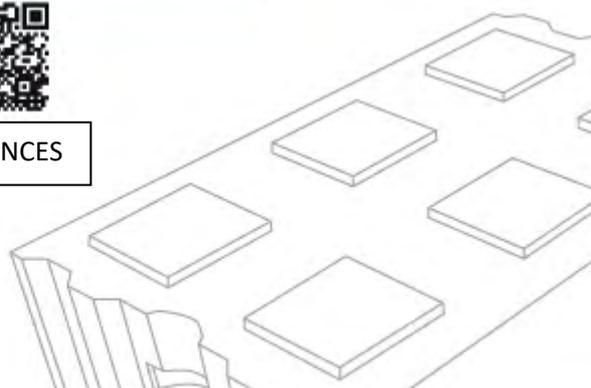
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REFERENCES



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