



Basis for sustainable and healthy living spaces

Dome houses for permanent living based on prefabricated house kits

- **Quickly**
- **Technologically**
- **Health and environment friendly**
- **Thermoeffectively**



What is a domehouse kit

A domehouse kit is a set of panels of specific sizes and geometry from which the thermal circuit of a house is assembled.

Depending on the layout, window and door openings are prepared in certain places.

A curved lathing is mounted on the outer layer of each panel, providing a ventilation gap.

It is also is a fastener for the base of the roof and creates a spherical geometry of the assembled dome.

Visually, the faces and joints of the dome sectors are absent.



Austria, november of 2020

Addition architectural elemens

The delivery set may include any additional elements as agreed with the client (the supply of any external or internal finishing materials - for example, a wooden larch roofing tiles etc. is available if appropriate).



Austria, 2020

The geometry of the dome, the presence of architectural additions such as dormer windows, canopies, full sector windowing e.t.c. can be customized to any project.



Russia, 2018



Russia, 2016



At the construction site, the house is assembled from panels that have a factory made wall structure ("a wall cake") according to the scheme, similar to a Lego constructor.

It's fast and efficient!

More about kits

Options with wall thickness of 190, 300, 400, 450 mm are available (the choice depends on the size of insulation layer according to the project).

Both non-insulated and house kits with prefabricated insulation

The standart living area (square meters)

5M, 18M²

6M, 28M²

7M, 53M²

8M, 75M²

9M, 95M²

10M, 120M²

11M, 145M²

12M, 170M²



Non-insulated house kits. A model

AM model.

These house kits do not have factory insulation and are intended for insulation with environmentally friendly, organic materials or mineral wool. Ecowool insulation (natural cellulose based blown in insulation with high effectivity. Thermal conductivity $\lambda=0,039$ W/mK.) is recommended. The panels are sheathed on the outside with a waterproofing gas permeable membrane widely used in frame house construction industry. A wooden lathing is installed on the outer layer for fastening the roofing base. The waterproof roofing base is also available optionally.



Non-insulated house kits. A model

AI model.

These house kits do not have factory insulation and are intended for insulation with environmentally friendly, organic materials or mineral wool. The panels are sheathed on the outside with 12 mm gas permeable wind barrier Isoplaat boards (glue-free chipboard produced by diffusion technology). A wooden lathing is installed on the outer layer for fastening the roofing base. The waterproof roofing base is also available optionally.

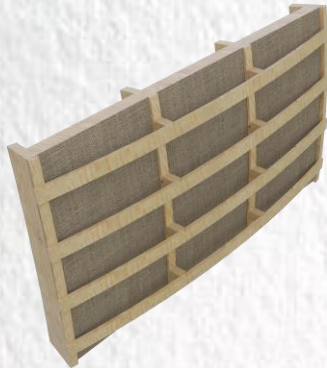
AS model.

These house kits do not have factory insulation and are intended for insulation with Hempcrete. The panels are sheathed on the outside with a linen sacking with density 360 gr/meter. A wooden lathing is installed on the outer layer for fastening the roofing base. The waterproof roofing base is also available optionally.

Domehouse kit A model



Model AI
(isoplaat boards)



Model AS
(linen sacking)



Model AM
(membrane)



Insulated house kits

Our mission as the manufacturer is to create a basis for sustainable and healthy permanent living spaces using resource-saving and green technologies, following the Circular Economy principles and "Green New Deal" worldwide concept.

That's why in the case of factory insulation 2 options are used: insulation with eco-wool (made from recycled materials /produced from paper production waste) - model B. and insulation with rye straw pressed according to invented technology - model C.



Insulated house kits. B model

B model.

House kits of model B are modules of a domehouse that are factory insulated with Ecowool. The load-bearing structures are sheathed on the outside and on the inside with isoplaat sheets 12 mm. The panels inside are filled with ecowool under pressure. This method allows the insulation to maintain its shape, which gives the required thermal efficiency.

An ecowool insulation is used quite often today. It is used for thermal insulation of residential buildings as well as industrial premises, offices, trade pavilions. It is very practical to isolate with this material those rooms where it is constantly humid and there is a high risk of condensation.

80 percent of the volume of ecowool is cellulose fibers made from recycled materials. Another 12 percent belongs to boric acid - a natural antiseptic. This substance is designed to protect the insulation from bacteria and fungi. The remaining 8 percent is the proportion of sodium tetraborate flame retardant. It not only increases the fire resistance of the material, but also adds insecticidal properties to it. When wetted, ecowool becomes sticky. This is due to the lignin contained in them.

Insulated house kits. BC model

The insulation consists of natural wood fibers that have a capillary structure, therefore they are able to hold air in themselves. Most of the volume of the material (from 85 to 92 percent) is occupied by the air gap, which retains heat tremendously. With insulation, all holes, seams and crevices are completely filled. That's why ecowool keeps heat very well. This can be judged by the value of the coefficient of thermal conductivity - it is from 0.032 to 0.041 watts per meter per degree Celsius. In addition, due to the absence of seams, no cold bridges appear in the coating. Ecowool can fill all, even the smallest, cracks and voids, which distinguishes it from other heat insulators.

There are examples of buildings insulated with this material as early as 1900. They stand to this day, perfectly keeping warm.



Domehouse kit BC model





Insulated house kits. BS model

BS model.

Panels of a domehouse are insulated at the factory with pressed straw by specific technology. Insulation thickness – 450 mm. The load-bearing elements of the panels are made of chamber dried coniferous woods. The panels on the outside are covered with an external gas permable plaster based on an organosilicon binder and expanded rocks developed by manufacturer. Clay/sand or gypsum/sand plaster are also available as an option both for covering outside and inside of panels. The structure of the wall in model C optionally can also include the isoplaat boards on the outside, a wooden lathing for fastening the roofing base and hydroisolated roofing base.

The domehouse panels insulated with straw according to this technology are one of the best solutions for sustainable living house. They are devoid of many of disadvantages of classical frame houses, and in some points they are superior to brick houses.



Panels Insulated with pressed straw may be supplied with / without factory plastering





Insulated house kits. BS model

The straw is pressed into the frame by hydraulic equipment up to a density of 150 kg / m³. Thus, it is in the wall in a compressed condition, seeks to expand and this will not allow it to sag in a frame with time. This pressed condition also provides a snug fit of insulation to the frame, which ensures the absence of bridges of cold. The thickness of the straw is 450 mm, which in terms of thermal conductivity can be compared with 4.5m brick wall. Also, a thick layer of insulation gives good noise reduction - sound waves are damped when passing through the straw.

The coefficient of thermal conductivity of a straw insulated panel even without plaster covering is 0.08 that in terms of thermal efficiency exceeds, for example, a silicate brick by 10 times.



Based on BS model domehouse
project by our partner
Gile House company (Lithuania)





Insulated house kits. BS model

The External plaster coating for straw panels is based on organosilicon binder and swollen rocks. It possesses: good elasticity - does not crack during transportation, installation and during micro-movement of the frame subsequently. Good vapor permeability: releases exhaust gas vapors from walls into the ventilation gap and further into the atmosphere.

Protects straw from rodents and insects. Possesses excellent adhesion and does not move away from the frame elements. Due to elasticity and adhesion, it creates excellent wind protection and the most important - protects the insulation and the frame from the effects of fire.



Straw dome 6,5 meters of inner diameter(individual project) near Saint Petersburg, Russia 2016



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