

# Design



Saddle roof



Flat roof

## Roof

The roof part consists of a ceiling and roof. The roof is designed to withstand difficult weather conditions, all over the world. Choose between two different roof designs: a flat roof and a saddle roof. The flat roof consists of hat beams, which separate the roof and the ceiling, allowing for air circulation. The saddle roof consists of roof trusses made of sheet metal. Both roofs are made of ISO 9001 quality-certified Plannjas TRP20 sheet metal, and have flanged sheet metal edge moulding.

## Ceiling

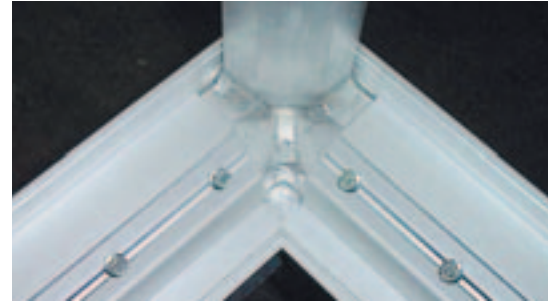
Like the walls, the ceiling is made of panels, which makes assembly easy.

## Floor

The floor consists of sandwich floor blocks. The outer layer of the floor is made of 4 mm thick aluminium plate making it light to transport and assemble. The floor on the inside of flat pack is covered with an anti-slip, weather resistant and water-proof plastic mat. This is also a grounded conductive mat that satisfies the requirements of sensitive electric equipment. The core consists of 50 mm XPS insulation (extruded polystyrene).

## Frame

The frame consists of specially produced aluminium rods, which facilitate assembly, and withstand demanding weather conditions. The rods are assembled with corner joints to create a monolithic design.



Corner joint

The aluminium rods have a 15 m natural oxide layer that resists corrosion. The rods are 100% recyclable. The frame can be equipped with adjustable legs that adjust to uneven surfaces.

## Sealing

All junctions between blocks and the aluminium rods are sealed with EPDM rubber strips, which are resistant to most chemicals and UV light. This ensures that the walls, floors and roof are sealed.



Door assembled on flat pack

## Door

The door and the door frame are made of aluminium of the same high quality as the rods. The door features a sandwich design, making it both lightweight and strong. The door is right handed, opens outward, and is ready for the installation of an alarm. The door measures 700 x 2000 m. Option: Fireproof door is available



## Useful life

The flat pack is made of aluminium rods with a protective oxide layer that withstands corrosion in most environments. The floor, too is made of 4 mm aluminium plate. The wall panels are made of HCFC-free PUR insulation, coated with heat galvanised sheet metal. The roof components are of Plannjas TRP 20 sheet metal. The flat pack is designed to eliminate pockets where water can collect, increasing galvanic corrosion. All this combines to give flat pack a long life in most environments.



Transport crate

Transport by industrial truck

## Transport

Flat pack is delivered in transport crates measuring 3.1 x 1.35 x 1.3 metres, but can also be transported assembled. The flat pack can be lifted by crane, helicopter or tractor.

## Construction time

It takes two men approximately eight hours to build a flat pack, and the only things they need are common

hand tools. All the panels, aluminium rods, strips and roof components are pre-fabricated.



Simple assembly of wall panels

## Dimensions

The standard dimensions of a flat pack are 2.660 x 2.155 x 2.445 metres (length x base x height).

Flat pack is expandable with the help of 1200 mm or 2400 mm panels.

The dead load is approximately 700 kg.

The K value is 0,5 W/m<sup>2</sup>, with 60 mm of insulation.

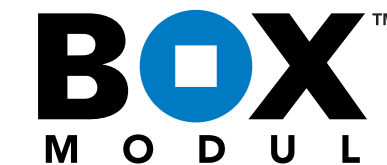
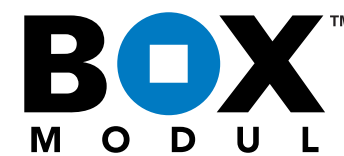
The point load on the floor is 500 kg / dm<sup>2</sup>.

The spread load on the floor is 500 kg / m<sup>2</sup>.

The point load on the roof is 200 kg / m<sup>2</sup>.

## Set up

Various ways to set up flat pack is steel frames, beams and Bases.



Flat Pack - The Smart Solution



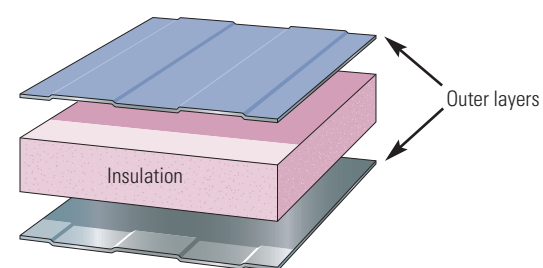
## Flat Pack: The smart solution



Flat pack with a flat roof

### The flat pack is designed to meet the following requirements:

- A lightweight house that can be placed anywhere, for example, on the ground, a roof or a mountaintop.
- Easy to transport and assemble, anywhere in the world
- Disassembled, the flat pack takes little space. It can even fit into a lift.
- Two men can complete the assembly work in less than eight hours.
- Assembly requires only hand tools.
- Sandwich technology ensures the stability and high quality of the house.
- Easy to disassemble when moving.
- Requiring no maintenance



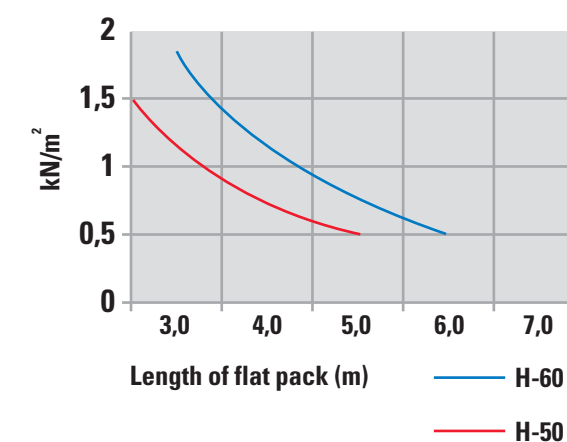
### Sandwich technology

Sandwich design uses elements consisting of two outer layers that are glued to an insulating core, using a two-component adhesive. Together, these components form a strong building element.

### Walls

The walls consist of panels that are designed using the sandwich principle. The panels are ISO 9001 quality-certified. The panel cores contain no HCFCs, and is thus better for the ozone layer. The panels are also highly resistant to corrosion. The outer layer consists of 0.6 mm heat-galvanised, lacquered sheet metal. The panels have been tested, and have withstood the cold of the north and the heat of the south. The panel surfaces are easy to keep clean, and the walls are available in a variety of colours.

### Panel dimensions and wind loads



## Technical data

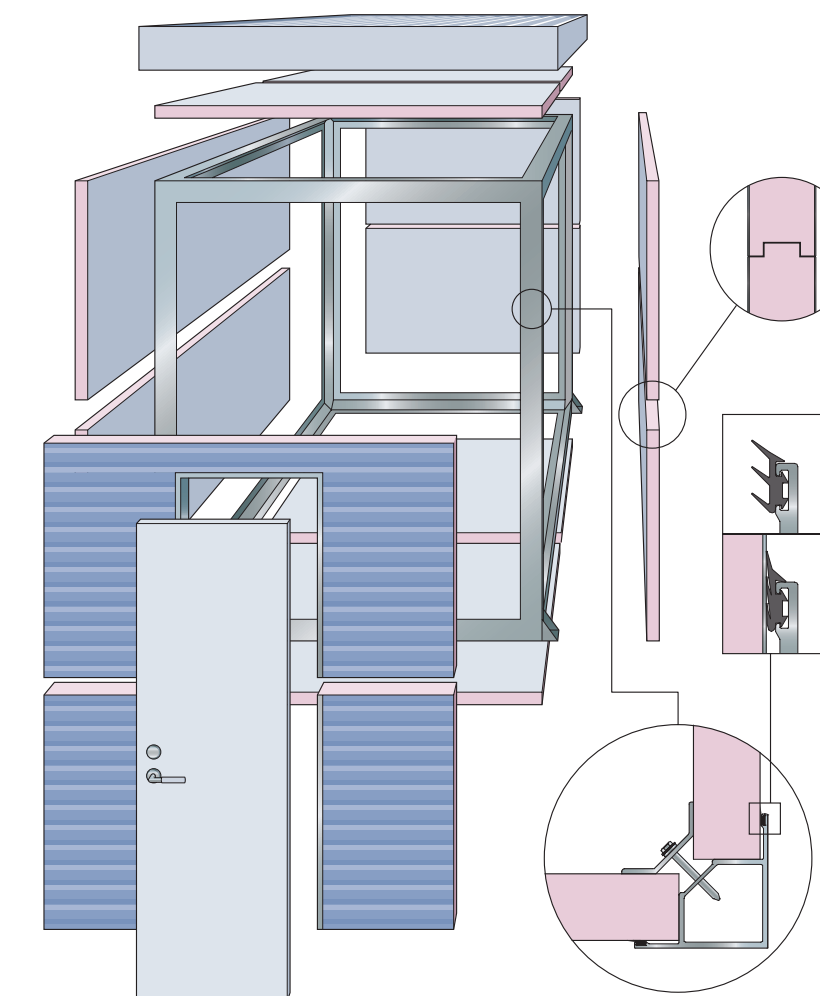
### Technical data panels

Type	K-value: W/m²K	Weight: kg/m²	λ-value	Fire class
EPS/PUR 50	0,46	10	0,033	0
EPS/PUR 60	0,38	10,4	0,033	0
EPS/PUR 70	0,31	10,8	0,033	0
Rockwool 85	0,481	19	0,042	EL 30 - EL 60

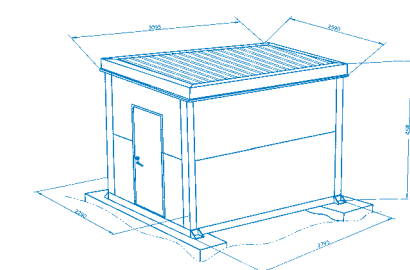
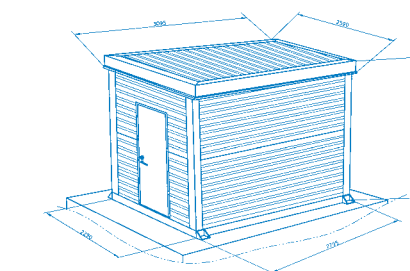
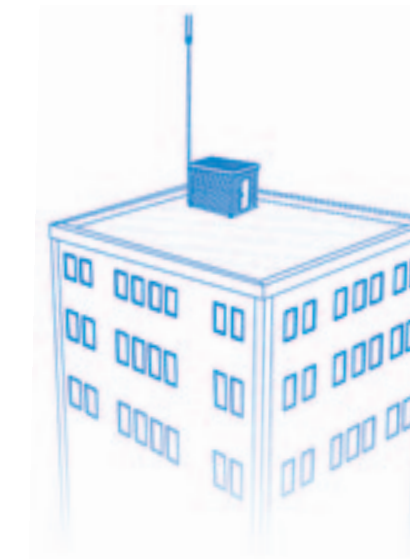
EPS/PUR 60 is the standard wall panel.

## Flat Pack Diagram

The picture below illustrates the major components that come in a flat pack.



## Optional foundation



## References

Examples of Countries and cities that we have delivered FlatPack.

- Angola
- Egypt, Cairo
- Gabon
- Kongo, Kinshasa
- Morocco, Casablanca
- Ivory Coast
- Sweden (mountaintops)