



**PAMAFlex**

*More than Passive!*

**The massive construction elements  
for sustainable housing  
with passive-house-standards**



[www.alphabeton.eu](http://www.alphabeton.eu)  
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BELGIAN BUILDING AWARDS | 13



The construction elements **PAMAflex** developed by Alpha Beton especially takes into account the required properties to achieve the passive-house-standards.

## **PAMAflex** that means:

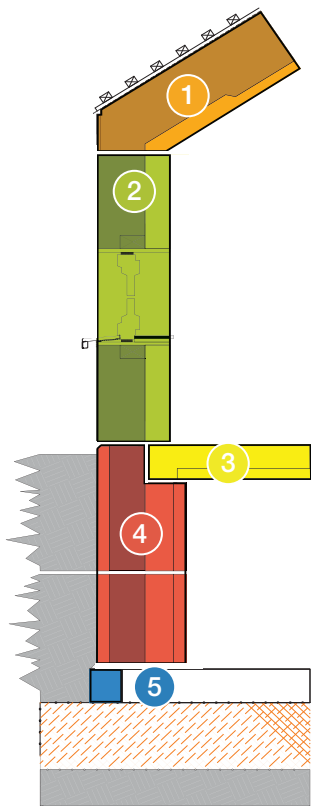
- **PAssiv**: elements designed to achieve passive house standard providing very high insulation.
- **MAssiv**: massive house offering optimal storage of heat and coolness, sustainability and stability.
- **flexibel**: flexible construction system that offers the possibility of individual interior and exterior design.

### 4. The advantages of **PAMAflex**

- Insulation of 27 cm PU. U-value: 0.11 W / m<sup>2</sup>\*K,
- Seamless insulation over the entire element,
- Optimal wind tightness,
- Massive bearing walls,
- Excellent living comfort through storage of warmth and freshness,
- A very good acoustic insulation,
- A high fire resistance,
- High protection against radon gas,
- High resistance to earthquakes,
- High resistance to water damage,
- Made on measure,
- Suitable for all types of facade,
- Production under ideal conditions,
- Permanent quality control,
- Minimal packaging waste and material waste on site,
- Quick mounting, short construction time,
- An advantageous price / performance ratio.



# PAMAflex provides a large range of building elements for high quality insulated houses.



- 1** PAMAflex ROOF
- 2** PAMAflex OUTER WALL
- 3** PAMAflex CEILING ELEMENT
- 4** PAMAflex CELLAR WALL
- 5** PAMAflex ACCESSORIES

## **1** PAMAflex Roof elements

The **PAMAflex** roof element is composed of a concrete shell having a thickness of 6 cm to which is applied in factory a polyurethane foam insulation having a thickness of 35 cm.

The total thickness of the element exclude roofing is 41 cm. The elements have a free span of up to 6 m' - depending on the slope and the snow load. All the bearing elements are integrated in the concrete shell and inside the insulation.

On the outside, there are wooden chevrons integrated on which all types of roofing can be installed like tiles, slates, metal sheets, photo voltaic, green roofing,...



$$U = 0,12 \text{ W/m}^2\text{*K}$$



## 2 PAMAflex Outer wall



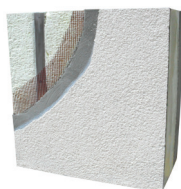
The **PAMAflex** outer wall is composed of a solid concrete wall of 14 cm with an in factory foamed polyurethane insulation layer of 27 cm. So, the wall reaches a U value of 0.11 W/m<sup>2</sup>\*K.

The total thickness of the element exclude the facade is 41 cm. Facade-connection elements are embedded within the **PAMAflex** wall. Because of this patented detail, the **PAMAflex** outer wall can be faced with any type of facade.

The inner surface of the **PAMAflex** outer wall is smooth and doesn't need plastering. The massive concrete wall has a high storage capacity for warmth and freshness.

The **PAMAflex** wall offers excellent acoustic insulation and is fire proof.

Plastering, wood siding, brick or stone siding, metal siding,...



$$U = 0,10 \text{ W/m}^2 \cdot \text{K}$$

## 3 PAMAflex Ceiling elements

The **PAMAflex** ceiling are standard concrete half slab elements in thickness of 5-7 cm. The total thickness of the slab depends on the span and the load to support. The underside is smooth and an ideal basis for a high quality interior work.

It is possible to integrate different accessories (empty pipes, ventilation, attachments, boxes, spots,...).





## 4 PAMAflex Cellar wall

The **PAMAflex** cellar wall is a double wall with a thickness of 40 to 50 cm and with an integrated polystyrene or polyurethane insulation of 10 to 20 cm.

The cavity inside the double wall will be concreted on site after all elements are mounted. The two shells of the double wall are interconnected with rods of high-strength composite material. In this way, conventional thermal bridges are avoided. The built-in insulation is protected by the massive concrete shell against any kind of degradation.

The inner and outer surfaces are smooth. Without additional plastering the cellar rooms can be used for a high value usage

$$U = 0,38 \text{ bis } 0,15 \text{ W/m}^2\text{*K}$$



## 5 PAMAflex Attachments

### a) PAMAflex Formwork for foundation plate

The **PAMAflex** formwork is a prefabricated formwork out of PU-foam with a section of 18/18 cm. The formwork elements are provided with assembly holes for the anchorage of the formwork to the underground.

The **PAMAflex** foundation formwork is easy to use. Because the formwork remains in place, there is no work of unmoulding, and the foundation plate is fully insulated.

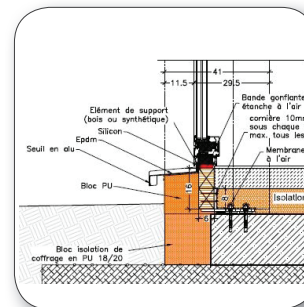


### b) PAMAflex Frame supports

The **PAMAflex** frame supports are designed for the support of passive windows in different mounting positions.

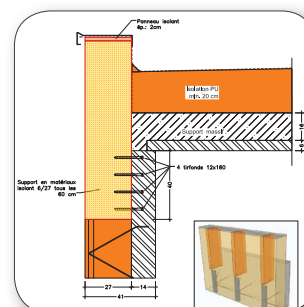
They are made out of a continuous hard compressed PU-element and are fixed pointwise with special designed metal corners.

They enable a window installation with minimal thermal bridge.



### c) PAMAflex Flat roof insulation

The **PAMAflex** flat roof insulation with built-in slope consists of PU-foam blocks of 100 x 200 cm. The thickness of the insulation is variable from 20 cm upwards with a slope of 2%. Special measurements are possible on demand.

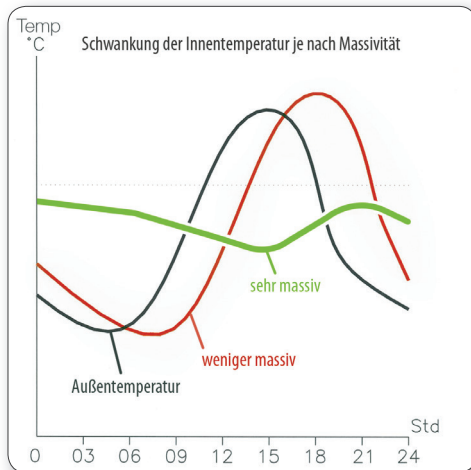


### d) Various

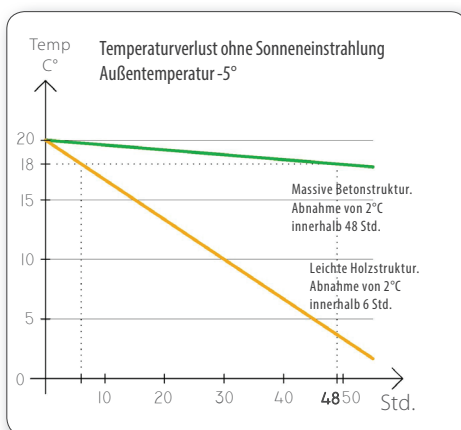
A multitude of accessory parts are available for diverse applications.

# Massive building technologie increases the living comfort of a house.

The massiveness of a construction is very important for a steady living environment, comfort and living quality in a house.



The large storage capacity for warmth and freshness of a massive **PAMAFlex** house results in slight temperature fluctuations in the interior (green curve) even in case of large temperature fluctuation at the outside of the construction.



A **PAMAFlex** house can store up to 10 times more heat in the ceilings and the walls than a comparable light weight construction. This warmth will then be passed on to the inner spaces when the sun is absent. Hence, during the absence of the sun, the massive construction system can bridge a longer period of time without heating than a light weight construction.

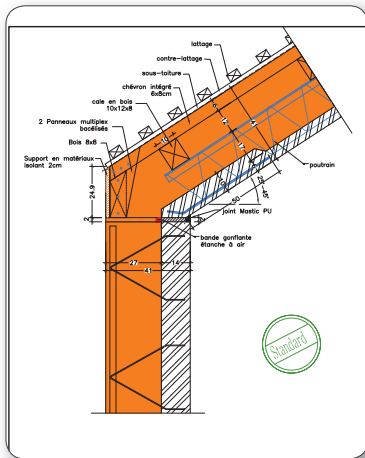
Having an outside temperature of -5° C without any solar radiation during 2 days a **PAMAFlex** massive house loses only about 2° C. The lightweight construction on the other hand will lose 2° C in only 6 hours.

## **PAMAFlex** certified by PHI Prof. Dr. Feist

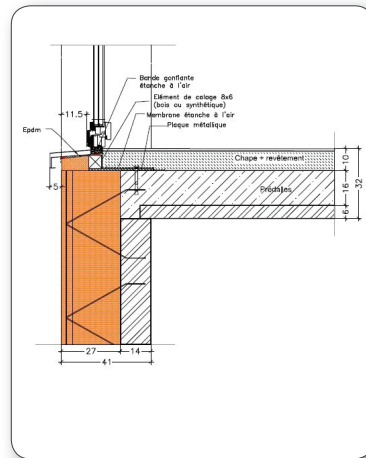
The **PAMAFlex** construction system is the first certified system as massive and passive house components from cellar to the roof by the passive house Institut in Darmstadt, which is lead by Mr. Prof. Dr. Wolfgang Feist.



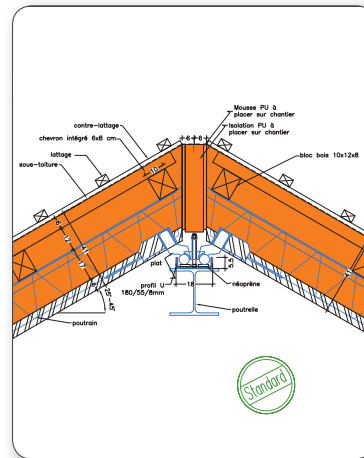
# Technical construction details



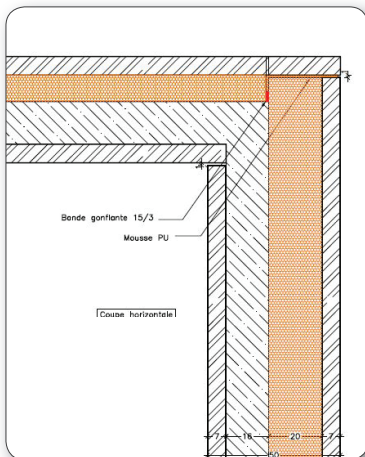
Connection roof - wall



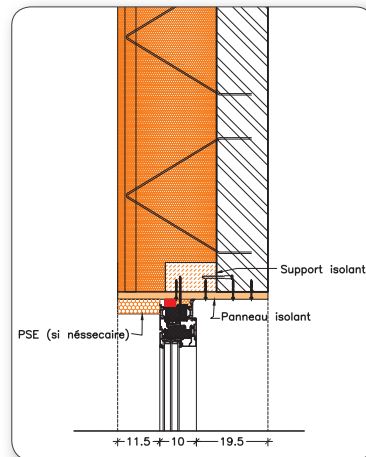
Connection slab - wall



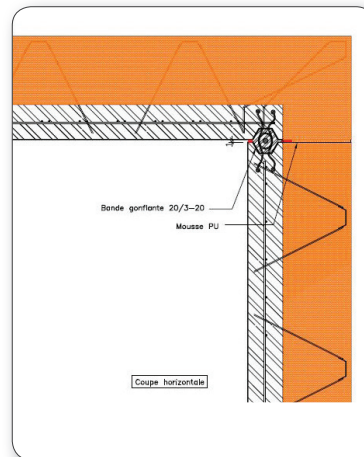
Roof ridge detail



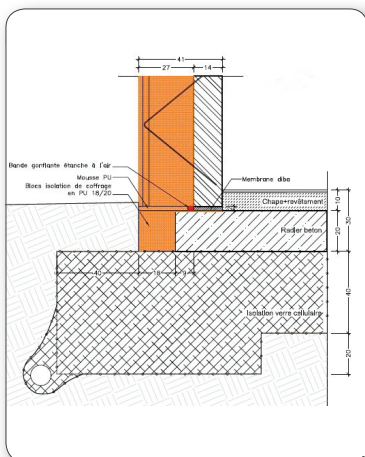
Outer corner junction between two **PAMAFlex** insulated double walls



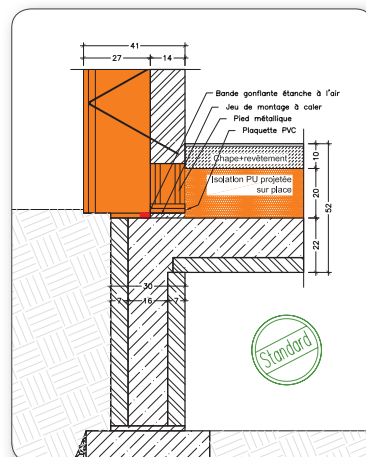
Embrasure in **PAMAFlex** outer wall



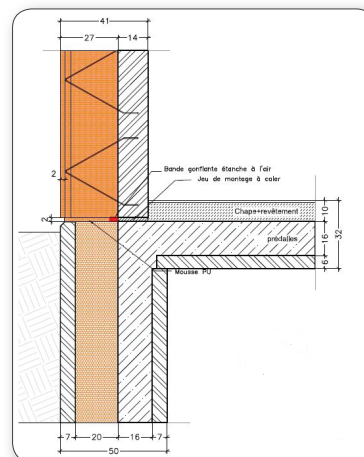
Outer corner junction between two **PAMAFlex** outer walls



**PAMAFlex** outer wall on a foundation plate



**PAMAFlex** outer wall on a crawl space



**PAMAFlex** outer wall on a **PAMAFlex** insulated double wall

# Certified Partner for PAMAFlex passive house construction



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Certified passive house designer



## Manufacturer of the PAMAFlex construction



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212

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336



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