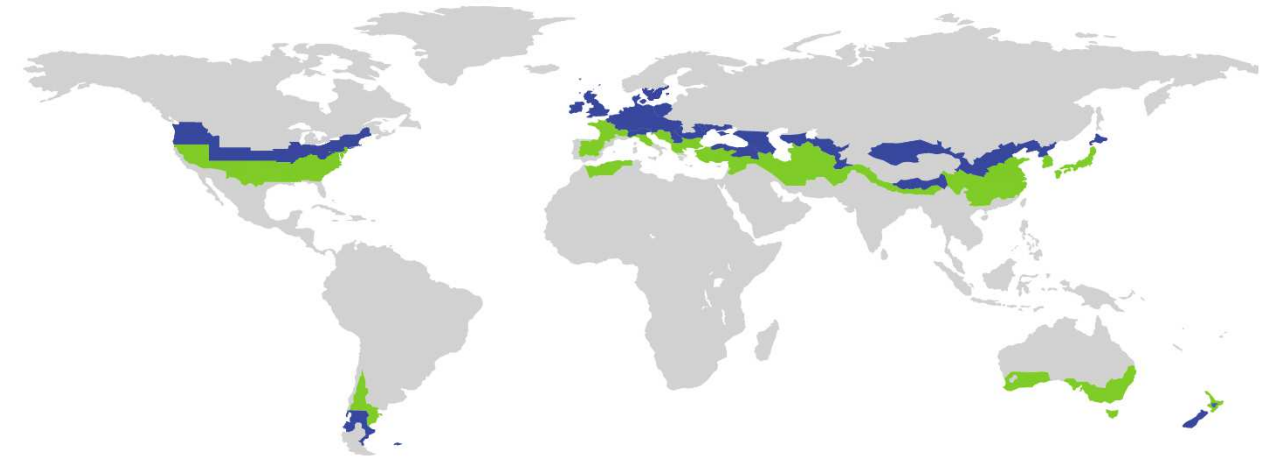


CERTIFICATE

Certified Passive House Component

ID: 1074cs03 valid until 31. December 2018

Passive House Institute
Dr. Wolfgang Feist
64342 Darmstadt
GERMANY



Category **Construction system | Insulated Formwork blocks**
Manufacturer **Villa Nova Bouw bv
Rijssen
NETHERLANDS**
Product name **Villa Nova Bausystem**

This certificate for the cool, temperate climate zone was awarded based on the following criteria

Hygiene criterion

The minimum temperature factor of the interior surfaces is

$$f_{R_{si}=0,25m^2K/W} \geq 0,70$$

Comfort criterion

The U-value of the installed windows is

$$U_{w,i} \leq 0,85 W/(m^2K)$$

Efficiency criteria

Heat transfer coefficient of building envelope

$$U \cdot f_{PHI} \leq 0,15 W/(m^2K)$$

Temperaturfactor of opaque junctions

$$f_{R_{si}=0,25m^2K/W} \geq 0,86$$

Thermal bridge free design for key connection details

$$\Psi \leq 0,01 W/(m^2K)$$

An airtightness concept for all components and connection details was provided.



Opaque building envelope

The lightweight timber construction system with a cavity wall as exterior shell is installed on a HECTAR floorslab system, which is form poured concrete on a layer of 20cm EPS insulation.

Mineral wool with a thermal conductivity of 0.035 W / (mK) is installed as a thermal insulation for the exterior walls in the 24 cm thick stud construction as well as in the 10 cm thick installation level. The reinforcement is ensured by an OSB board between the supporting and installation level. A plasterboard plate forms the inner layer of the installation level.

The roof construction consists of wooden racks with the same insulation. On the outside, the insulation is finished with OSB panels; a membrane is arranged as a steam brake on the room side. Below this steam brake follows a 6 cm thick installation level, which is also equipped with the mentioned insulation. On the inner side, the construction is finished by a plaster board.

Windows

The calculations were carried out using the certified Aluplast Energeto 8000 window system. This is an insulated vinyl window system in which the reinforcement is made by glass fiber reinforced plastic webs. A 48 mm glazing (4/18/4/18/4) with the Swisspacer Ultimate spacer was used. The Ug value of the reference glazing was 0.70 W / (mK); for real life, glasses with lower U values are recommended.

Airtightness concept

The OSB plate between the load bearing and installation level, in conjunction with various adhesive tapes, forms the air-tight plane of the walls. The connection to the membrane, which represents the airtight level of the roof (between the rafters and the installation level), is also made with a permanently elastic adhesive tape. The windows are connected to the airtight level of the wall by means of membranes in conjunction with suitable adhesive tapes.

Explanatory notes

The Passive House Institute has defined international component criteria for seven climate zones based on hygiene-, comfort- and affordability criteria. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. This use might make sense in certain circumstances.

Thermal bridge not calculated
Criteria achieved

Efficiency criteria not achieved
Hygiene- or comfort criterion not achieved

