CERTIFICATE

Certified Passive House Component

ID: 1868cs04 valid until 31. December 2025

Passive House Institute
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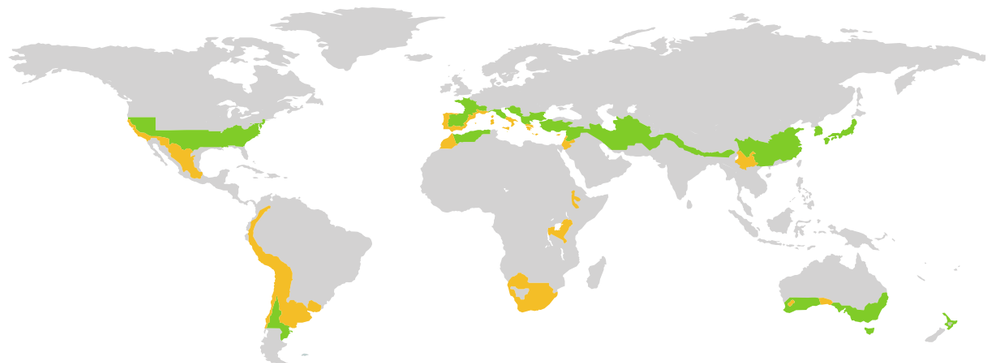

Category	**Wall System | Mixed construction**
Manufacturer	**Hormipresa Nec Sl** **El Pla De Santa Maria, Tarragona** **SPAIN**
Product name	**ARCTIC WALL**

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

Hygiene criterion

The minimum temperature factor of the interior surfaces is	$f_{Rsi=0,25m^2K/W} \geq$	**0.65**

Comfort criterion

The U-value of the installed windows is	$U_{w,i} \leq$	**1.05** W/(m²K)

Efficiency criteria

Heat transfer coefficient of building envelope	$U*f_{PHI} \leq$	**0.30** W/(m²K)
Temperature factor of opaque junctions	$f_{Rsi=0,25m^2K/W} \geq$	**0.82**
Thermal bridge-free design for key connection details	$\Psi \leq$	**0.01** W/(mK)

An airtightness concept for all components and connection details was provided

warm, temperate climate

CERTIFIED COMPONENT
Passive House Institute

Hormipresa Nec SI
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Opaque building envelope

Hormipresa Arctic Wall is a fully industrialised construction system, certified for passive houses in the warm-temperate climate zone, as the regular U-values of the exterior components are below 0,25 W/m²K and the connections meet the criteria of 'thermal bridge free'.
The system consists of 9cm of PIR thermal insulation, sandwiched between a 15cm reinforced concrete layer internally and a 6cm white concrete layer externally. The two concrete layers are held together with a galvanized steel lattice system with wall ties that minimise heat transmission while providing mechanical strength. Additionally, 4cm of mineral wool insulation is installed internally in the service void. For the purpose of certification, a three-dimensional simulation was carried out to determine the thermal effect of the steel wall ties and lattice system that penetrate the insulation layer. The roof consists of a prestressed concrete hollow core slab with 14cm of XPS insulation. For the ground floor detail, 10cm of XPS insulation is placed on top of the concrete slab.
The surface temperature of all connections meet the hygiene requirements.

Windows

For the purposes of certification a standard passive house window (Uw = 1,00 W/m²K with Ug = 0,90 W/m²K) was used. The overall U-value of the installed window of standard size (1,23 m wide by 1,48 m tall) should be no more than 0,05 W/m²K greater than the Uw to ensure occupant comfort - this criteria is met in this instance.

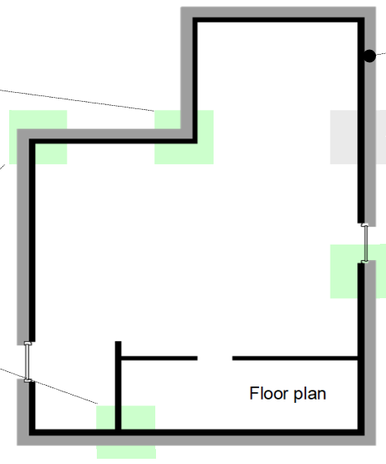
Airtightness concept

Airtightness of the system is achieved in the following way: windows and doors are taped with Iso-Connect Inside Blue Line airtight tapes. The airtight layer of the wall and floor slab is the rein-forced concrete layer. In the roof, the airtight layer is the hollow-core slab. Joints between panels and connections with other building elements are sealed with Sikaflex 11-FC elastomeric sealant and painted with Soudal Soudatight SP airtight paint.

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. Their use might make economic sense in certain circumstances.

- Thermal bridge not calculated
- Criteria achieved
- Efficieny criteria not achieved
- Hygiene or comfort criterion not achieved



EWIC01	
Ext. wall-inner corner	
Ψ [W//mK]	0.052
$f_{Rsi=0,25\ m^2K/W}$	0.91

EWEC01	
Ext. wall-outer corner	
Ψ [W//mK]	-0.098
$f_{Rsi=0,25\ m^2K/W}$	0.84

EWIW01	
Ext. wall-int. wall	
Ψ [W//mK]	-0.012
$f_{Rsi=0,25\ m^2K/W}$	0.89

EW01	External wall
U [W/(m²K)]	0.248
Thickness [m]	0.383

EWEJ01	
Ext. wall-panel joint	
Ψ [W/(mK)]	
$f_{Rsi=0,25\ m^2K/W}$	

WISI			Window side
Typ	01	02	03
b_f [m]	0.12		
U_f [W/m²K]	0.99		
$Ψ_g$ [W/mK]	0.028		
$Ψ_i$ [W/mK]	0.005		
$f_{Rsi=0,25\ m^2K/W}$	0.82		

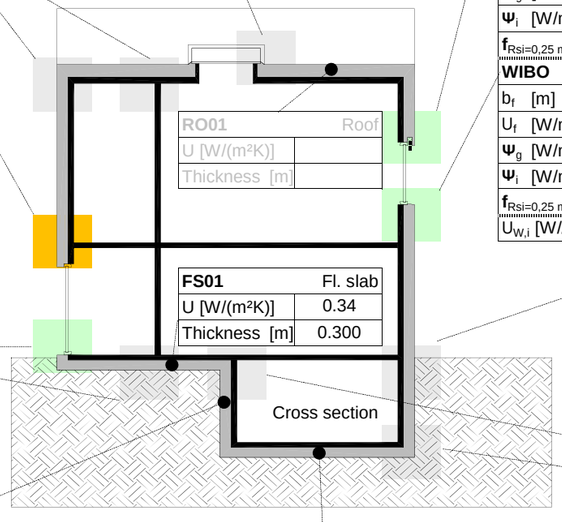
ROVE01	
Verge	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

ROIW01	
Roof-internal wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

RWSI01	
Roof window top	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

EWCE01	
Ext. wall-ceiling	
Ψ [W//mK]	0.027
$f_{Rsi=0,25\ m^2K/W}$	0.90

WITH01	
Window threshold	
b_f [m]	0.145
U_f [W/m²K]	0.97
$Ψ_e$ [W/mK]	0.027
$Ψ_i$ [W/mK]	-0.080
$f_{Rsi=0,25\ m^2K/W}$	0.81
$U_{W,i}$ [W//m²K]	**0.95**



RO01	Roof
U [W/(m²K)]	
Thickness [m]	

FS01	Fl. slab
U [W/(m²K)]	0.34
Thickness [m]	0.300

FSIW01	
Fl. slab-int. w.	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

BW01	Basement wall
U [W/(m²K)]	
Thickness [m]	

FS02	Fl. slab	U [W/(m²K)]		Thickness [m]	

WITO			Window top
Typ	01	02	03
b_f [m]	0.12		
U_f [W/m²K]	0.99		
$Ψ_g$ [W/mK]	0.028		
$Ψ_i$ [W/mK]	0.006		
$f_{Rsi=0,25\ m^2K/W}$	0.82		
WIBO			Window bottom
b_f [m]	0.12		
U_f [W/m²K]	0.99		
$Ψ_g$ [W/mK]	0.028		
$Ψ_i$ [W/mK]	0.012		
$f_{Rsi=0,25\ m^2K/W}$	0.81		
$U_{W,i}$ [W//m²K]	**1.02**		

BWBC01	Bsmnt w.-bsmnt c.
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

BWFS01	Bsmnt w.-fl. slab
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

FSBW01	Fl. slab-bsmnt w.
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

ROEA01	Eaves
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

RWBO01	Roof window bttm
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

RWTO01	Roof window side
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

RORI01	Ridge
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

FRAW01	
Flat roof-asc. wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

TC01	Cold roof
U [W/(m²K)]	
Thickness [m]	

ROJU01	Junction
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

TCEA01	Cold roof-eaves
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

FR01	Flat roof
U [W/(m²K)]	0.23
Thickness [m]	0.795

EO01	Overhang
U [W/(m²K)]	
Thickness [m]	

EWEO01	Ext. wall-overhang
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

BC01	Basement ceiling
U [W/(m²K)]	
Thickness [m]	

EWEO02	Ext. wall-overhang
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

BCEW01	Bsmnt clg-ext. wall
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

FRRP01	Roof parapet
Ψ [W//mK]	-0.082
$f_{Rsi=0,25\ m^2K/W}$	0.89

FSEW01	Fl. slab-ext. wall
Ψ [W//mK]	-0.019
$f_{Rsi=0,25\ m^2K/W}$	0.86

FSBW02	Fl. slab-bsmnt w.
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

BCIW01	Bsmnt clg-int. wall
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	