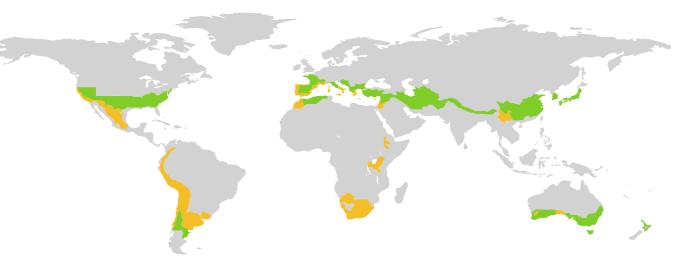
CERTIFICATE

Certified Passive House Component ID: 1625cs04 valid until 31. December 2025



Category Manufacturer Product name **Thermochip SLU** Carballeda de Valdeorras (Ourense) España Thermochip HOUSING SATE-COAT

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

Hygiene criterion

The minimum temperature factor of the interior surface

Comfort criterion

The U-value of the installed windows is

Efficiency criteria

Heat transfer coefficient of building envelope Temperature factor of opaque junctions Thermal bridge-free design for key connection details

An airtightness concept for all components and conn details was provided

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warm, temperate climate



Passive House Institute Dr. Wolfgang Feist 64342 Darmstadt GERMANY

Construction system | Lightweight timber construction

aces is	f _{Rsi=0,25m²K/W} ≥	0.65
	U _{W,i} ≤	1.05 W/(m²K)
Is	U*f _{PHI} ≤ f _{Rsi=0,25m²K/W} ≥ Ψ ≤	0.30 W/(m²K) 0.82 0.01 W/(mK)
nection	warm, temper	ate climate
	CERTI COMPO	FIED

Passive House Institute

Thermochip SLU

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Opaque building envelope

With the Thermochip HOUSING Construction System the wintertime thermal insulation of buildings can be ensured. The system is constructed out of timber studs, beams and an outer sandwich panel. The sandwich panel (12/140/12 mm) comprises a board of fibre cement to the outside, a core of XPS (</=0,036 W/mK) and internal composite board with cellulose fibres. To the interior a service cavity provides a space for the building services and protects the airtightness layer.

The certification does not take into account point thermal bridges caused by structural columns or e.g. balcony connections, which must to be assessed separately. As investigated, the system is deemed suitable 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 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.

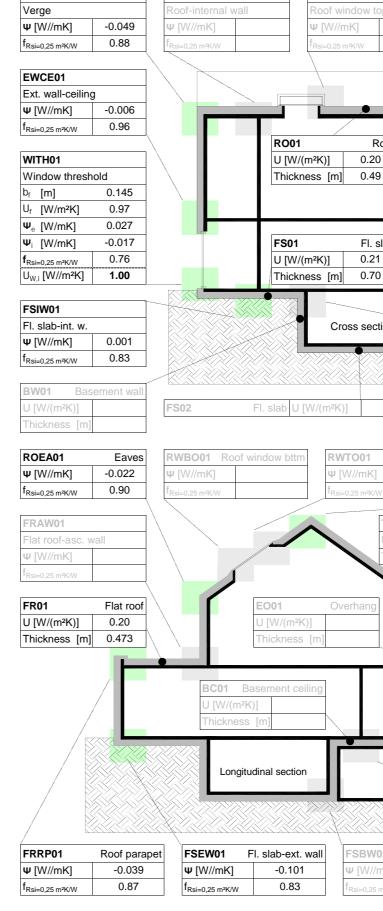
Airtightness concept

Airtightness of the system is achieved in the following way: windows and doors are installed with permanently elastic sealing materials and suitable airtight connection membranes and profiles. The airtight layer is located in the gypsum fibre board in the inner side of the sandwich panel. Joints between panels and connections with other building elements are sealed 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 strin-gent requirements. Their use might make economic sense in certain circumstances.





ROIW01

RWSI01

ROVE01

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	WI	ГО		·	Window to
/	Тур)	01	02	03
	b _f	[m]	0.12		
	U_f		0.99		
/	Ψ_{g}	[W/mK]	0.028		
	Ψ_i	[W/mK]	0.005		
	f _{Rsi⊧}	=0,25 m²K/W	0.80		
	WIE				ndow botton
	b _f	[m]	0.12		
	U _f	[W/m²K]	0.99		
	Ψ_{g}	[W/mK]	0.028		
	$\boldsymbol{\Psi}_{i}$	[W/mK]	0.015		
	f _{Rsi⊧}	=0,25 m²K/W	0.79		
	U _{W,}	[W//m²K]	1.03		
			BWBC	01 Bsmn	t wbsmnt d
			Ψ [\///	mK]	
			f _{Rsi=0,25}	m²K/W	
XXXX		<u> </u>			
	S	×	BWFS	01 Bsm	nnt wfl. sla
	X	Ň	Ψ [\///	mK]	
	Ň	×	f _{Rsi=0,25}	m²K/W	
<u> </u>	X	×			
<u>RRR</u>	X		FSBW	01 Fl.s	lab-bsmnt w
			Ψ [\///	mK1	1
			Ψ [V V //]		
Thickness	[m]		f _{Rsi=0,25}	-	
Thickness	[m]		-	-	
			f _{Rsi=0,25}	m²K/W	
Thickness			f _{Rsi=0,25}	m²K/W	Ridg
			f _{Rsi=0,25} RORI0 Ψ [W//i	1 mK]	-0.015
			f _{Rsi=0,25}	1 mK]	-
oof window side			f _{Rsi=0,25} RORI0 Ψ [W//I f _{Rsi=0,25}	1 m ² K/W m ² K/W	-0.015 0.94
oof window side			f _{Rsi=0,25} RORI0 Ψ [W//i f _{Rsi=0,25}	1 m²K/W m²K/W M	-0.015 0.94
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W/// f _{Rsi=0,25} ROJU(Ψ [W///	1 mK] m¥/W)1 mK]	-0.015 0.94
oof window side			f _{Rsi=0,25} RORI0 Ψ [W//i f _{Rsi=0,25}	1 mK] m¥/W)1 mK]	-0.015 0.94
01 Colo W/(m²K)]			f _{RSi=0,25} RORI0 Ψ [W//t f _{Rsi=0,25} ROJUC Ψ [W//t f _{Rsi=0,25}	1 mK] m²K/W D1 mK] m²K/W	-0.015 0.94 Junction
01 Colo W/(m²K)]			f _{RSi=0,25} RORI0 Ψ [W//i f _{Rsi=0,25} ROJUC Ψ [W//i f _{Rsi=0,25}	1 mK] m²K/W)1 m²K/W)1 Col	-0.015 0.94 Junction
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W//l f _{Rsi=0,25} ROJUC Ψ [W//l f _{Rsi=0,25}	1 mKJ m¥K/W M M M M M Col mKJ	-0.015 0.94 Junction
01 Colo W/(m²K)]			f _{RSi=0,25} RORI0 Ψ [W//i f _{Rsi=0,25} ROJUC Ψ [W//i f _{Rsi=0,25}	1 mKJ m¥K/W M M M M M Col mKJ	-0.015 0.94 Junction
01 Colo W/(m²K)]			f _{RSi=0,25} RORIO Ψ [W//til f _{Rsi=0,25} ROJUC Ψ [W//til f _{Rsi=0,25} TCEAC Ψ [W//til f _{Rsi=0,25}	1 mK] m²K/W D1 mK] m²K/W MK] m²K/W	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			$ \frac{f_{RSi=0.25}}{f_{RSi=0.25}} $	1 mK] m²K/W D1 m²K/W MK] m²K/W MK] m²K/W 01 Ext. w	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W//i f _{Rsi=0,25} ROJUC Ψ [W//i f _{Rsi=0,25} TCEAC Ψ [W//i f _{Rsi=0,25} EWEO Ψ [W//i f _{Rsi=0,25}	1 mKJ mKKW MKJ mRKV MKJ mRKV 01 Ext. w mKJ	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			$ \frac{f_{RSi=0.25}}{f_{RSi=0.25}} $	1 mKJ mKKW MKJ mRKV MKJ mRKV 01 Ext. w mKJ	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			$\label{eq:response} \begin{bmatrix} \mathbf{RORIO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}} \end{bmatrix} \\ \hline \mathbf{ROJUC} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{TCEAO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{EWEO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{EWEO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{EWEO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{EWEO} \\ \mathbf{\Psi} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{EWEO} \\ \mathbf{W} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{W} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{W} [\mathbf{W} / / i \\ \mathbf{f_{Rsi=0,25}}] \\ \hline \mathbf{W} [\mathbf{W} / / i \\ \mathbf{W} / i \\ \mathbf{W} / i \\ \mathbf{W} \\ \hline \mathbf{W} [\mathbf{W} / / i \\ \mathbf{W} / i \\ \mathbf{W} / i \\ \mathbf{W} \\ \mathbf{W} \\ \hline \mathbf{W} \\ \mathbf{W} \\ \hline \mathbf{W} \\ \hline \mathbf{W} \\ \mathbf{W} \\ \hline \mathbf{W} \\ \mathbf{W} $	1 mRKJ mRKJ mRKW 21 mRKJ mRKJ mRKVW 01 Ext. w mKJ mRKJ mRKJ	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			f _{RSi=0,25} RORIO Ψ [W///i f _{Rsi=0,25} ROJUC Ψ [W///i f _{Rsi=0,25} TCEAC Ψ [W//i f _{Rsi=0,25} EWEO Ψ [W//i f _{Rsi=0,25}	1 mK] m%W 01 mK] m%W 01 Ext. w m%KW 02 Ext. w	-0.015
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W///i f _{Rsi=0,25} ROJU0 Ψ [W///i f _{Rsi=0,25} TCEA0 Ψ [W//i f _{Rsi=0,25} EWE0 Ψ [W//i f _{Rsi=0,25}	1 mK] m¥KW)1 mK[m¥KW)1 Col mK] m¥KW 01 Ext. w mK] m²KW 02 Ext. w mK]	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			f _{RSi=0,25} RORIO Ψ [W///i f _{Rsi=0,25} ROJUC Ψ [W///i f _{Rsi=0,25} TCEAC Ψ [W//i f _{Rsi=0,25} EWEO Ψ [W//i f _{Rsi=0,25}	1 mK] m¥KW)1 mK[m¥KW)1 Col mK] m¥KW 01 Ext. w mK] m²KW 02 Ext. w mK]	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W///i f _{Rsi=0,25} ROJU0 Ψ [W///i f _{Rsi=0,25} TCEA0 Ψ [W//i f _{Rsi=0,25} EWE0 Ψ [W//i f _{Rsi=0,25}	1 mK] m¥KW)1 mK[m¥KW)1 Col mK] m¥KW 01 Ext. w mK] m²KW 02 Ext. w mK]	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			f _{Rsi=0,25} RORI0 Ψ [W///i f _{Rsi=0,25} ROJU0 Ψ [W///i f _{Rsi=0,25} TCEA0 Ψ [W//i f _{Rsi=0,25} EWE0 Ψ [W//i f _{Rsi=0,25}	1 m²K/W 1 mK] m²K/W 11 m²K/W 11 Col m²K/W 11 Col m²K/W 01 Ext. w mK] m²K/W 02 Ext. w mK]	-0.015 0.94 Junction d roof-eave
01 Colo W/(m²K)]			$\begin{tabular}{l} \hline f_{RSi=0,25} & \\ \hline f_{RSi=0,25} & \\ \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ f_{RSi=0,25} & \\ \hline \hline w [W//i] & \\ \hline y [W/$	1 mRKJ mRKJ mRKJ mRKJ mRKJ mRKJ mRKJ mRKJ	d roof-eave
01 Colo W/(m²K)]			$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	1 mK] m¥KW 01 mK] m¥KW 01 Ext. w mK] m²KW 02 Ext. w mK] m²KW 02 Ext. w mK] m²KW	d roof-eave
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01 Colo W/(m²K)]			f _{RSi=0,25} RORIO Ψ [W///i f _{Rsi=0,25} ROJUC Ψ [W///i f _{Rsi=0,25} TCEAO Ψ [W///i f _{Rsi=0,25} EWEO Ψ [W///i f _{Rsi=0,25} EWEO Ψ [W//i f _{Rsi=0,25} EWEO Ψ [W//i f _{Rsi=0,25}	1 m²K/W 1 mK] m²K/W 11 m²K/W 11 Col m²K/W 11 Col m²K/W 01 Ext. w mK] m²K/W 02 Ext. w mK] m²K/W 01 Bsmn1 mK/ m²K/W	d roof-eave

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