CERTIFICATE

Certified Passive House Component

ID: 0867ws03 valid until 31. December 2025

Passive House Institute
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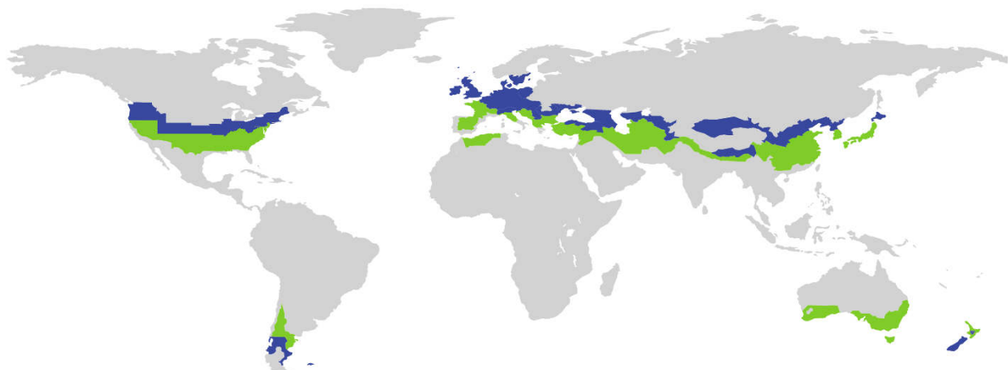
Germany



Category	**Construction system | Lightweight timber construction**
Manufacturer	**EcoCocon s.r.o.** **Bratislava** **SLOVAKIA**
Product name	**ECOCOCON Straw Panels**

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

Comfort criterion

The U-value of the installed windows is	$U_{W,i} \leq$	**0,85** W/(m²K)

Efficiency criteria

Heat transfer coefficient of building envelope	$U*f_{PHI} \leq$	**0,15** W/(m²K)
Temperature factor of opaque junctions	$f_{Rsi=0,25m^2K/W} \geq$	**0,86**
Thermal bridge free design for key connection details	$\Psi \leq$	**0,01** W/(m²K)

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

cool, temperate climate

CERTIFIED COMPONENT
Passive House Institute

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Opaque building envelope

Modular straw-timber frame construction. The thickness of the straw panels is always 400mm. The straw is pressed homogenously at 110kg/m³ in a double wooden loadbearing timber frame 45x95mm. The top and bottom of the panels are covered with plywood. The flat, cut straw surface is visible inside and outside and when connecting the panels to each other. Clay plaster can be applied directly to the straw on the inside. The outside is covered with an airtight membrane (see below) and a wood fiber board. The wood fiber board can be plastered or a ventilated facade can be installed. The system is based on an external insulated floor slab.

Windows

The certification was undertaken with the window Smartwin Solar I, which is a very slim phA-class window with triple 18mm argon glazing, Swisspacer Ultimate spacer bar and PU secondary seal. In No. 01, the window is installed in the center of the wall. In No. 02, it is installed flush with the exterior plaster. In No. 03, the windows are installed at the inner edge; see certification report.

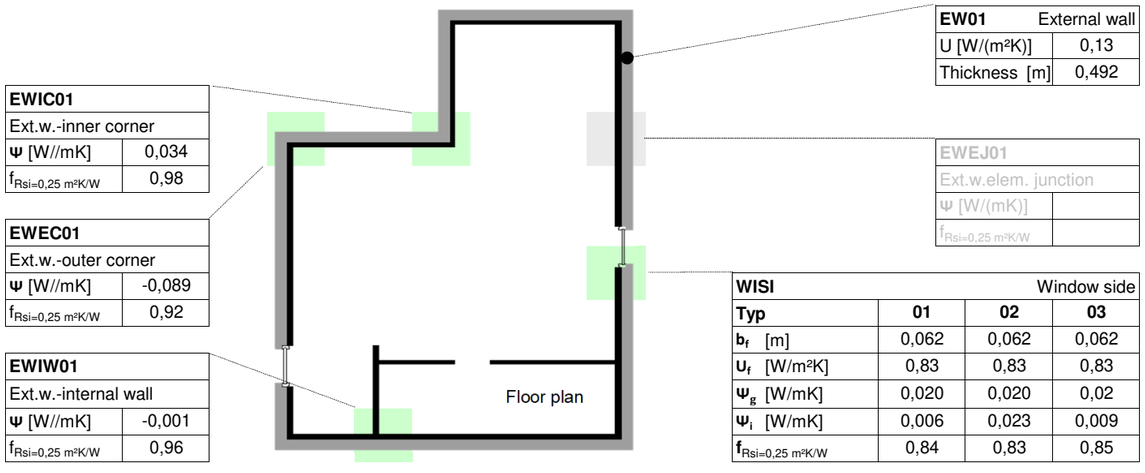
Airtightness concept

A diffusion open, but airtight membrane with sd <0,2m is wrapped on the outside of the straw during construction. This method is approved by both, hydrothermal simulation as well as in the field. The manufacturer provides additional information on his website. The membrane doubles as quick weather protection during construction. The membrane is taped to the airtight layer of the floor and roof. The membrane is later covered with wood fibre boards. It is pulled to the inside at the window openings; windows are then taped to the membrane.

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 be reasonable from the economic point of view.

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



EWIC01	
Ext.w.-inner corner	
Ψ [W//mK]	0,034
$f_{Rsi=0,25\ m²K/W}$	0,98

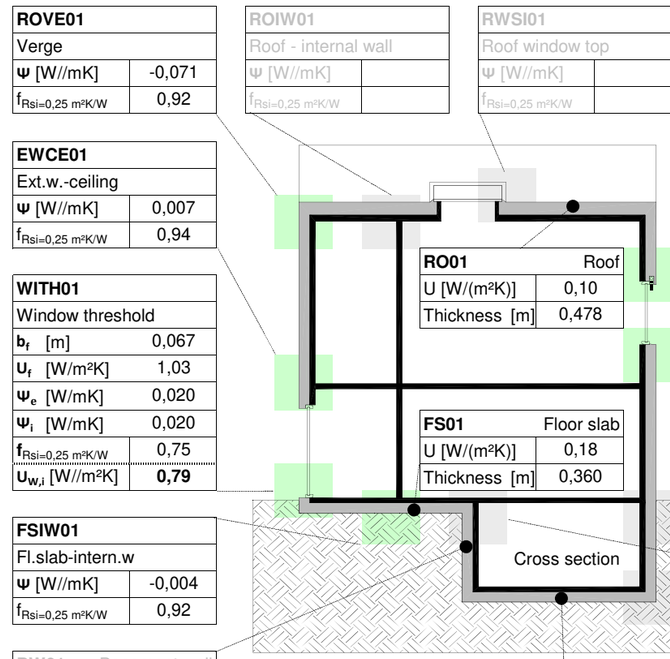
EWEC01	
Ext.w.-outer corner	
Ψ [W//mK]	-0,089
$f_{Rsi=0,25\ m²K/W}$	0,92

EWIW01	
Ext.w.-internal wall	
Ψ [W//mK]	-0,001
$f_{Rsi=0,25\ m²K/W}$	0,96

EW01	External wall
U [W/(m²K)]	0,13
Thickness [m]	0,492

EWEJ01	
Ext.w.elem. junction	
Ψ [W/(mK)]	
$f_{Rsi=0,25\ m²K/W}$	

WISI			Window side
Typ	**01**	**02**	**03**
b_f [m]	0,062	0,062	0,062
U_f [W/m²K]	0,83	0,83	0,83
$Ψ_g$ [W/mK]	0,020	0,020	0,02
$Ψ_i$ [W/mK]	0,006	0,023	0,009
$f_{Rsi=0,25\ m²K/W}$	0,84	0,83	0,85



ROVE01	
Verge	
Ψ [W//mK]	-0,071
$f_{Rsi=0,25\ m²K/W}$	0,92

ROIW01	
Roof - internal wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

RWSI01	
Roof window top	
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

EWCE01	
Ext.w.-ceiling	
Ψ [W//mK]	0,007
$f_{Rsi=0,25\ m²K/W}$	0,94

RO01	Roof
U [W/(m²K)]	0,10
Thickness [m]	0,478

WITH01	
Window threshold	
b_f [m]	0,067
U_f [W/m²K]	1,03
$Ψ_e$ [W/mK]	0,020
$Ψ_i$ [W/mK]	0,020
$f_{Rsi=0,25\ m²K/W}$	0,75
$U_{w,i}$ [W//m²K]	**0,79**

FS01	Floor slab
U [W/(m²K)]	0,18
Thickness [m]	0,360

FSIW01	
Fl.slab-intern.w	
Ψ [W//mK]	-0,004
$f_{Rsi=0,25\ m²K/W}$	0,92

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

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

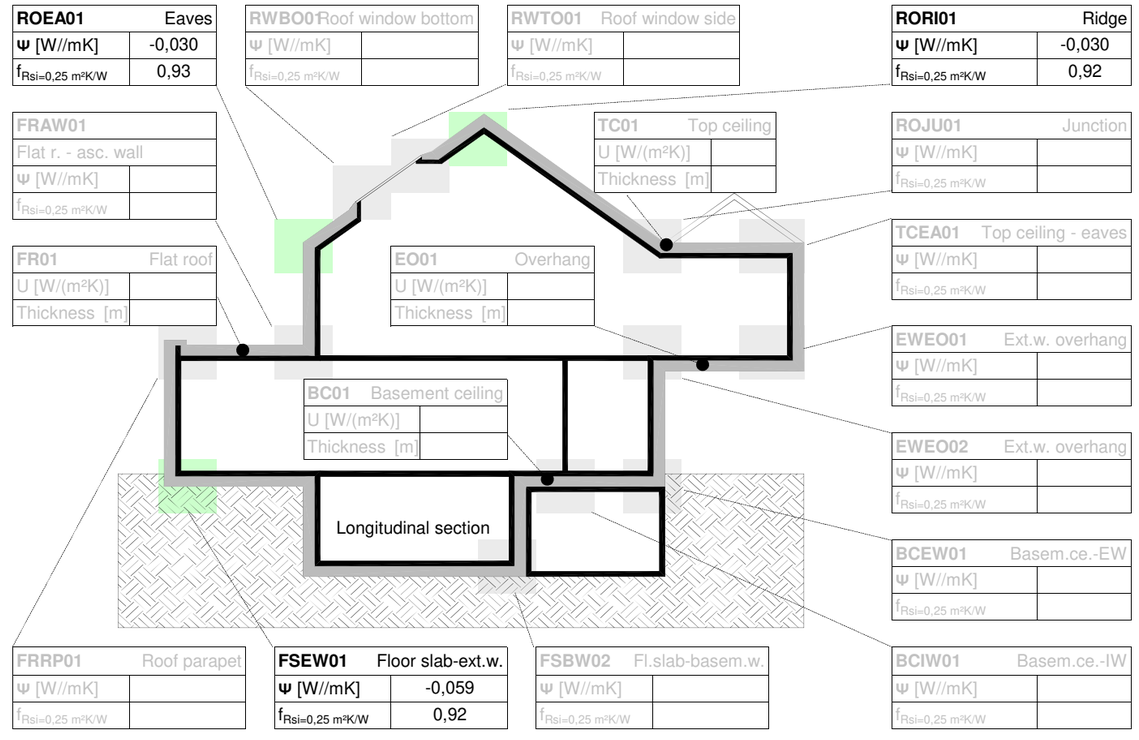
WITO			Window top
Typ	**01**	**02**	**03**
b_f [m]	0,062	0,062	0,062
U_f [W/m²K]	0,83	0,83	0,83
$Ψ_g$ [W/mK]	0,020	0,020	0,020
$Ψ_i$ [W/mK]	0,009	0,025	0,011
$f_{Rsi=0,25\ m²K/W}$	0,84	0,83	0,85

WIBO			Window bottom
b_f [m]	0,062	0,062	0,062
U_f [W/m²K]	0,93	0,93	0,93
$Ψ_g$ [W/mK]	0,020	0,020	0,020
$Ψ_i$ [W/mK]	0,026	0,034	0,034
$f_{Rsi=0,25\ m²K/W}$	0,84	0,81	0,81
$U_{w,i}$ [W//m²K]	**0,81**	**0,86**	**0,86**

BWBC01	Basem.w.-basem.c.
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

BWFS01	Basem.w.-floor slab
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

FSBW01	Fl.slab-basem.w.
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	



ROEA01	Eaves
Ψ [W//mK]	-0,030
$f_{Rsi=0,25\ m²K/W}$	0,93

RWBO01	Roof window bottom
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

RWTO01	Roof window side
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

RORI01	Ridge
Ψ [W//mK]	-0,030
$f_{Rsi=0,25\ m²K/W}$	0,92

FRAW01	
Flat r. - asc. wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

TC01	Top ceiling
U [W/(m²K)]	
Thickness [m]	

ROJU01	Junction
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

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

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

TCEA01	Top ceiling - eaves
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

EWEO01	Ext.w. overhang
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

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

EWEO02	Ext.w. overhang
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

BCEW01	Basem.ce.-EW
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

FRRP01	Roof parapet
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

FSEW01	Floor slab-ext.w.
Ψ [W//mK]	-0,059
$f_{Rsi=0,25\ m²K/W}$	0,92

FSBW02	Fl.slab-basem.w.
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

BCIW01	Basem.ce.-IW
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	