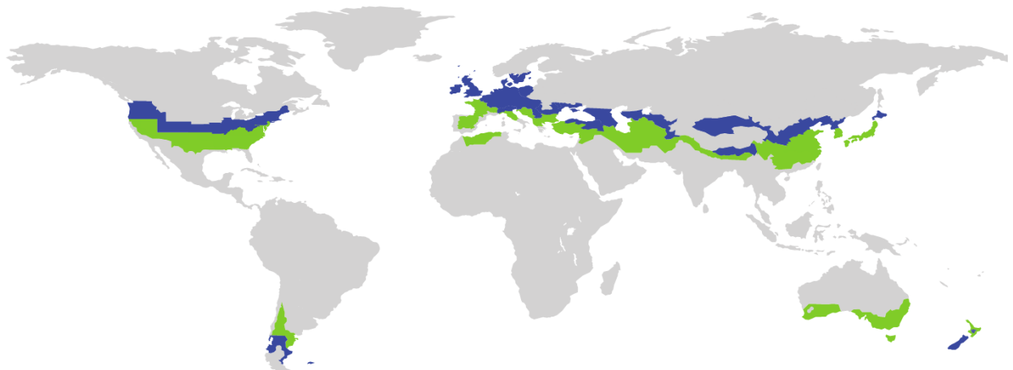
CERTIFICATE

Certified Passive House Component

ID: 0923cs03 valid until 31. December 2025

Passive House Institute
Dr. Wolfgang Feist
64342 Darmstadt
GERMANY



Category	**Construction system | Lightweight timber Construction**
Manufacturer	**Build Smart North America** **Lawrence, Kansas** **UNITED STATES OF AMERICA**
Product name	**Build SMART**

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

Build Smart North America
3741 Greenway Circle, 66046 Lawrence, Kansas, United States of America
Phone: | +1 (888) 376-3424 | info@buildsmartna.com | www.buildsmartna.com

Opaque building envelope

The Build Smart lightweight timber construction system comprises pre-fabricated structural panels that include an air barrier, continuous exterior insulation, a water-resistive barrier and pre-installed, air-tightened windows and doors. The system comprises EPS and cellulose insulation, sandwiched between timber and gypsum panels fixed to vertical timber supports. The system is intended to be used with rainscreen cladding. Thermal conductivity values are taken from the relevant international standard.

Windows

Certification was undertaken using Munster Joinery PassiV Future Proof uPVC frames, which are supplied as part of the system. The windows are triple-glazed and use Super Spacer TriSeal / T-Spacer Premium thermal values for the spacer, polyurethane secondary seals and argon-filled chambers. The frames use EPDM gasket seals, multiple chambers filled with air and EPS insulation, and a steel locking system.

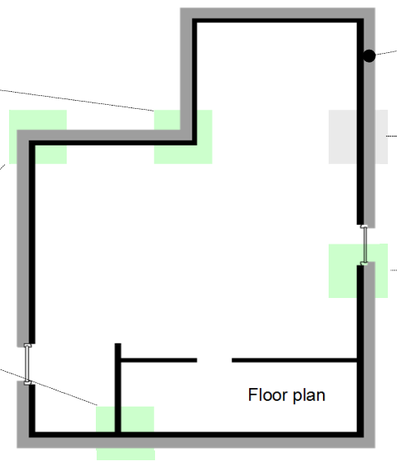
Airtightness concept

Air tightness is ensured by a combination of OSB panels within the wall structure, and air tightness tape at junctions between panels and around window and door reveals.

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
Efficieny criteria not achieved
Hygiene- or comfort criterion not achieved



EWIC01	
Ext.w.-inner corner	
Ψ [W//mK]	0,024
$f_{Rsi=0,25\ m^2K/W}$	0,95

EWEC01	
Ext.w.-outer corner	
Ψ [W//mK]	-0,049
$f_{Rsi=0,25\ m^2K/W}$	0,89

EWIW01	
Ext.w.-internal wall	
Ψ [W//mK]	0,000
$f_{Rsi=0,25\ m^2K/W}$	0,95

EW01	External wall
U [W/(m²K)]	0,15
Thickness [m]	0,264

EWEJ01	
Ext.w.elem. junction	
Ψ [W/(mK)]	
$f_{Rsi=0,25\ m^2K/W}$	

WISI			Window side
Typ	01	02	03
b_f [m]	0,102		
U_f [W/m²K]	0,76		
$Ψ_g$ [W/mK]	0,024		
$Ψ_i$ [W/mK]	0,007		
$f_{Rsi=0,25\ m^2K/W}$	0,73		

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

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

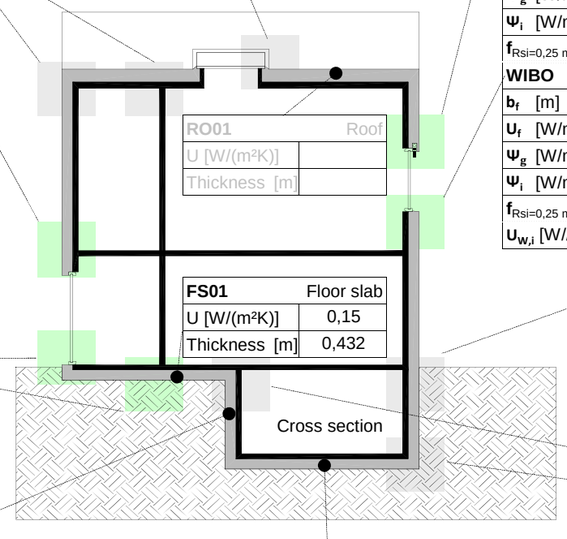
RWSI01	
Roof window top	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

EWCE01	
Ext.w.-ceiling	
Ψ [W//mK]	-0,004
$f_{Rsi=0,25\ m^2K/W}$	0,91

WITH01	
Window threshold	
b_f [m]	0,120
U_f [W/m²K]	0,76
$Ψ_e$ [W/mK]	0,027
$Ψ_i$ [W/mK]	0,038
$f_{Rsi=0,25\ m^2K/W}$	0,81
$U_{w,i}$ [W//m²K]	**0,80**

FSIW01	
Fl.slab-intern.w	
Ψ [W//mK]	0,003
$f_{Rsi=0,25\ m^2K/W}$	0,89

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



RO01	Roof
U [W/(m²K)]	
Thickness [m]	

FS01	Floor slab
U [W/(m²K)]	0,15
Thickness [m]	0,432

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

WITO			Window top
Typ	01	02	03
b_f [m]	0,102		
U_f [W/m²K]	0,76		
$Ψ_g$ [W/mK]	0,024		
$Ψ_i$ [W/mK]	0,013		
$f_{Rsi=0,25\ m^2K/W}$	0,73		

WIBO			Window bottom
b_f [m]	0,102		
U_f [W/m²K]	0,75		
$Ψ_g$ [W/mK]	0,024		
$Ψ_i$ [W/mK]	0,009		
$f_{Rsi=0,25\ m^2K/W}$	0,73		
$U_{w,i}$ [W//m²K]	**0,80**		

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

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

FSBW01	Fl.slab-basem.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 bottom
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 r. - asc. wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

TC01	Top ceiling
U [W/(m²K)]	0,06
Thickness [m]	0,724

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

TCEA01	Top ceiling - eaves
Ψ [W//mK]	-0,085
$f_{Rsi=0,25\ m^2K/W}$	0,90

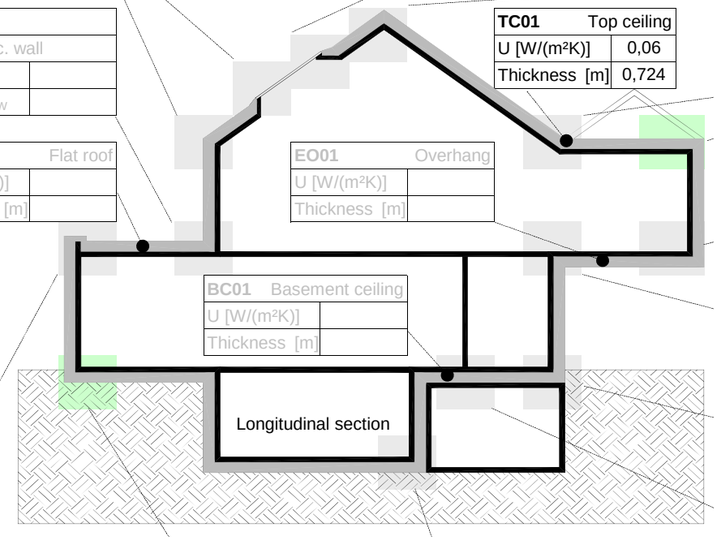
FR01	Flat roof
U [W/(m²K)]	
Thickness [m]	

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

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

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

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



BCEW01	Basem.ce.-EW
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	

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

FSEW01	Floor slab-ext.w.
Ψ [W//mK]	0,001
$f_{Rsi=0,25\ m^2K/W}$	0,89

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

BCIW01	Basem.ce.-IW
Ψ [W//mK]	
$f_{Rsi=0,25\ m^2K/W}$	