CERTIFICATE

Certified Passive House Component

ID: 0903ws03 valid until 31. December 2018

Passive House Institute
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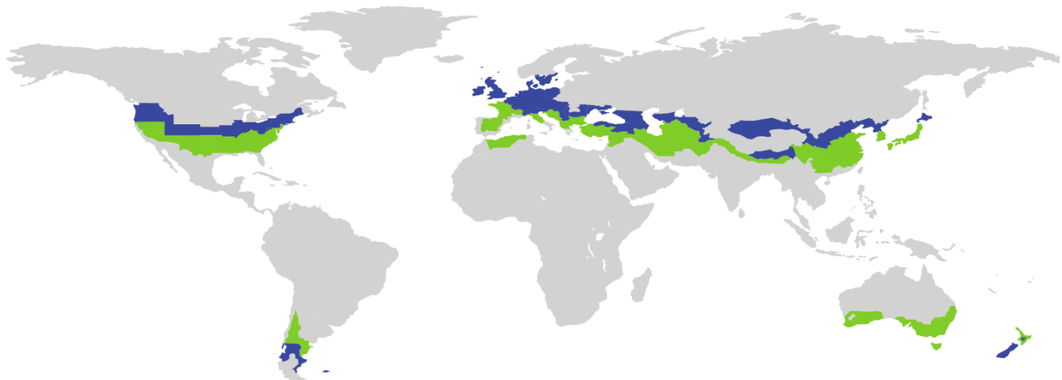
GERMANY

Aditional thermal bridges

Name	Thermal bridge	f_{Rsi}	Description
MRRI	Ψ= -0,132 W/mK	0,89	Monpitch roof ridge



Category **Construction system | Lightweight timber construction**
Manufacturer **MEDITE SMARTPLY**
Waterford
IRELAND
Product name **MEDITE SMARTPLY PROPASSIV - TYPE I**

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	$f_{Rsi=0,25m²K/W}$ ≥	**0,70**

Comfort criterion

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

Efficiency criteria

Heat transfer coefficient of building envelope	$U*f_{PHI}$ ≤	**0,15** W/(m²K)
Temperature factor of opaque junctions	$f_{Rsi=0,25m²K/W}$ ≥	**0,86**
Thermal bridge-free design for key connection details	Ψ ≤	**0,01** W/(m²K)

An airtightness concept for all components and connection details was provided

cool, temperate climate

CERTIFIED COMPONENT
Passive House Institute

Opaque building envelope

The system is a timber-frame with a stud thickness of 220mm, with both external and internal insula-tion. As MEDITE SMARTPLY manufactures the MEDITE VENT and SMARTPLY PROPASSIV products, these are the only products in the sys-tem for which product-specific lambda values have been provided. All other simulated lambda values have been applied based on the specification of MEDITE SMARTPLY, with materials sourced from the Passive House Institute's own database. The use of such generic materials means that consum-ers are free to use, for example, an insulation product of their choosing (such as wood fibre, min-eral wool or EPS), so long as the rated lambda value of the material used is equal to the value stated in this certification report. This value should take any punctual penetrations into account. The system is designed to be constructed with rain-screen cladding.

Windows

Certification was undertaken using a generic, Passive House-standard triple-glazed window unit, featuring Super Spacer Triseal thermal values for the spacer, a polysulfide secondary seal and argon gas filling. Solid timber frames were used throughout. Type 01 refers to outward-opening windows and Type 02 refers to inward-opening windows.

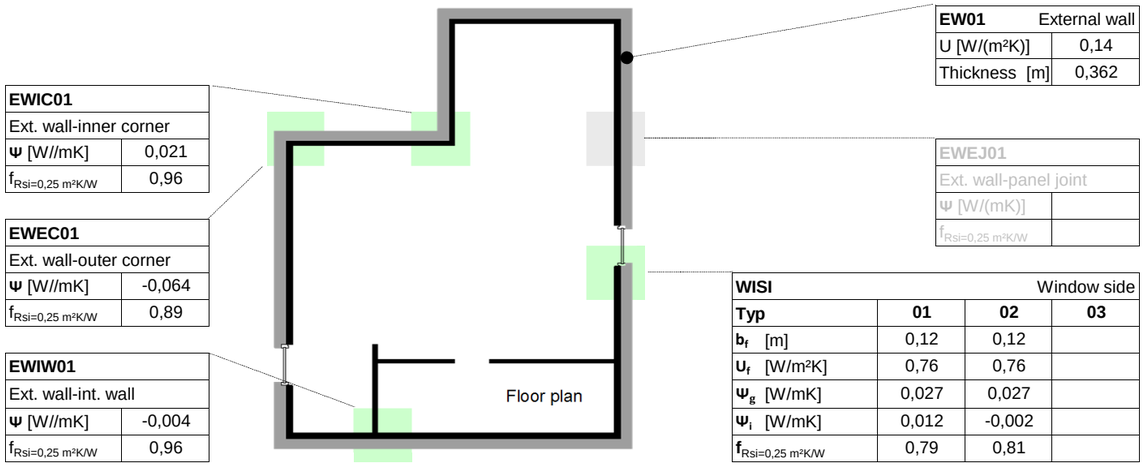
Airtightness concept

The airtightness of the wall systems is achieved mainly with the use of SMARTPLY PROPASSIV airtight OSB panels. SMARTPLY PROPASSIV was evaluated by the Passive House Institute in 2016 and it was concluded that the air leakage rate (q50) was < 0.01 ± 0.04 m³/h/m². For the floor/wall con-nection details an airtight membrane may be used around the floor cassette and taped with specialist airtight tape. The airtight layer is shown on the detail files as a dotted red line.

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]	0,021
$f_{Rsi=0,25\ m²K/W}$	0,96

EWEC01	
Ext. wall-outer corner	
Ψ [W//mK]	-0,064
$f_{Rsi=0,25\ m²K/W}$	0,89

EWIW01	
Ext. wall-int. wall	
Ψ [W//mK]	-0,004
$f_{Rsi=0,25\ m²K/W}$	0,96

EW01 External wall	
U [W/(m²K)]	0,14
Thickness [m]	0,362

EWEJ01	
Ext. wall-panel joint	
Ψ [W/(mK)]	
$f_{Rsi=0,25\ m²K/W}$	

WISI			Window side
Typ	**01**	**02**	**03**
b_f [m]	0,12	0,12	
U_f [W/m²K]	0,76	0,76	
$Ψ_g$ [W/mK]	0,027	0,027	
$Ψ_i$ [W/mK]	0,012	-0,002	
$f_{Rsi=0,25\ m²K/W}$	0,79	0,81	

ROVE01	
Verge	
Ψ [W//mK]	-0,038
$f_{Rsi=0,25\ m²K/W}$	0,93

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. wall-ceiling	
Ψ [W//mK]	0,010
$f_{Rsi=0,25\ m²K/W}$	0,94

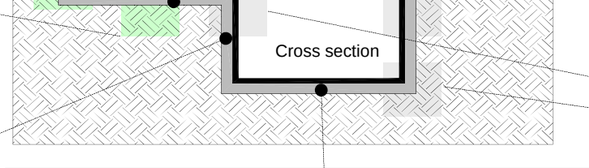
WITH01	
Window threshold	
b_f [m]	0,145
U_f [W/m²K]	0,79
$Ψ_e$ [W/mK]	0,026
$Ψ_i$ [W/mK]	-0,068
$f_{Rsi=0,25\ m²K/W}$	0,72
$U_{w,i}$ [W//m²K]	**0,78**

FSIW01	
Fl. slab-int. w.	
Ψ [W//mK]	-0,002
$f_{Rsi=0,25\ m²K/W}$	0,90

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

RO01 Roof	
U [W/(m²K)]	0,15
Thickness [m]	0,342

FS01 Fl. slab	
U [W/(m²K)]	0,11
Thickness [m]	0,450



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

WITO			Window top
Typ	**01**	**02**	**03**
b_f [m]	0,12	0,12	
U_f [W/m²K]	0,76	0,76	
$Ψ_g$ [W/mK]	0,027	0,027	
$Ψ_i$ [W/mK]	0,02	0,003	
$f_{Rsi=0,25\ m²K/W}$	0,80	0,81	

WIBO			Window bottom
b_f [m]	0,145	0,145	
U_f [W/m²K]	0,79	0,79	
$Ψ_g$ [W/mK]	0,026	0,027	
$Ψ_i$ [W/mK]	0,01	-0,005	
$f_{Rsi=0,25\ m²K/W}$	0,80	0,78	
$U_{w,i}$ [W//m²K]	**0,83**	**0,78**	

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

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

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

ROEA01 Eaves	
Ψ [W//mK]	-0,054
$f_{Rsi=0,25\ m²K/W}$	0,90

RWBO01 Roof window bttm	
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]	-0,165
$f_{Rsi=0,25\ m²K/W}$	0,95

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

TC01 Cold roof	
U [W/(m²K)]	0,09
Thickness [m]	0,450

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

TCEA01 Cold roof-eaves	
Ψ [W//mK]	-0,057
$f_{Rsi=0,25\ m²K/W}$	0,91

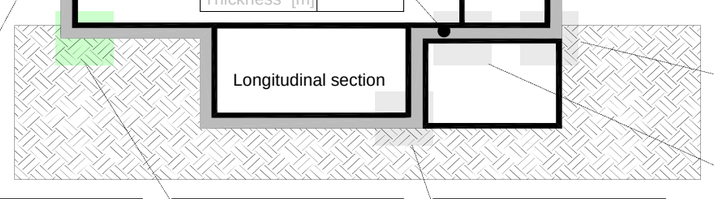
FR01 Flat roof	
U [W/(m²K)]	
Thickness [m]	

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

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

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

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



BCEW01 Bsmnt clg-ext. wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	

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

FSEW01 Fl. slab-ext. wall	
Ψ [W//mK]	-0,014
$f_{Rsi=0,25\ m²K/W}$	0,90

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

BCIW01 Bsmnt clg-int. wall	
Ψ [W//mK]	
$f_{Rsi=0,25\ m²K/W}$	