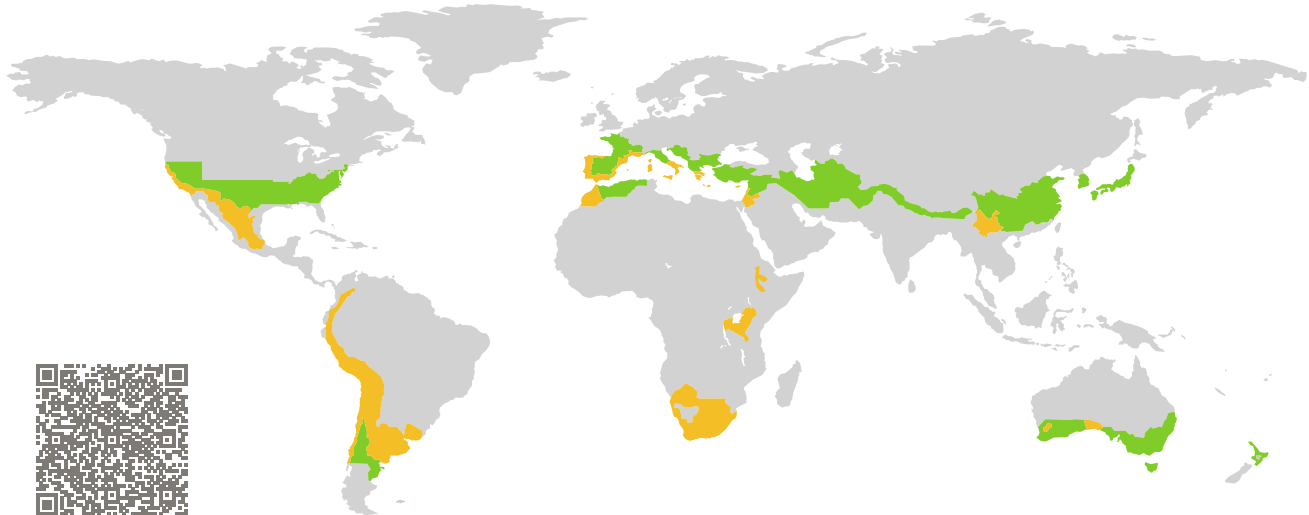


CERTIFICATE

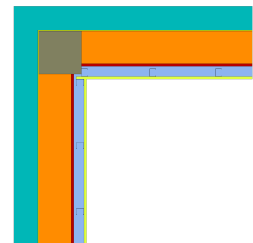
Certified Passive House Component

Component-ID 2284cs04 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category: **Construction system**
Manufacturer: **Consorcio Termoarcilla,
Madrid, Madrid,
Spain**
Product name: **Termoarcilla® EIFS Wall**



Hygiene criterion

The minimum temperature factor of the interior surfaces is

$$f_{Rsi=0.25\text{m}^2 \cdot \text{K/W}} \geq 0.65$$

Comfort criterion

The U-value of the installed windows is

$$U_{wi} \leq 1.05 \text{ W}/(\text{m}^2 \cdot \text{K})$$

Efficiency criteria

Heat transfer coefficient of building envelope:

$$U * f_{PHI} \leq 0.25 \text{ W}/(\text{m}^2 \cdot \text{K})$$

Temperature factor of opaque junctions:

$$f_{Rsi=0.25\text{m}^2 \cdot \text{K/W}} \geq 0.82$$

Thermal bridge-free design for key connection details:

$$\Psi \leq 0.01 \text{ W}/(\text{m} \cdot \text{K})$$

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

It was confirmed that the structure will dry out within 12 months and there is no risk of moisture-related damage.

warm, temperate climate

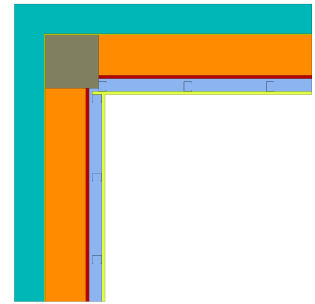


**CERTIFIED
COMPONENT**

Passive House Institute

Opaque building envelope

The system consists of a Termoarcilla® blocks wall with a 15 mm thick interior gypsum plaster, an exterior insulation finishing system (EIFS) 140 mm thick, and a gypsum board on the interior side with a 60 mm thick service cavity between the finish board and the wall. The Termoarcilla® wall is formed by placing the blocks with horizontal mortar joints. The exterior insulation system includes EPS insulation panels (0.035 W/(mK)) fixed to the blocks with adhesive and mechanical fasteners, and a multilayer base coat reinforced with mesh. The interior wall finish is built with a galvanized steel structure on which the gypsum board is screwed. The system has been assessed according to the Passive House Institute's criteria for opaque construction systems, and has been validated as suitable for Passive House projects in the warm-temperate and warm climate zones.



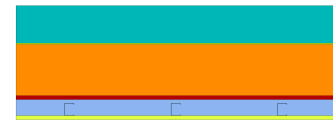
Windows

For the purposes of certification, a standard passive house window ($U_w = 1.00 \text{ W}/(\text{m}^2\text{K})$ with $U_g = 0.90 \text{ W}/(\text{m}^2\text{K})$) 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 $0.05 \text{ W}/(\text{m}^2\text{K})$ greater than the U_w to ensure occupant comfort. This criterion is met with a window installation solution aligned with the exterior thermal insulation. This construction solution is solved with a wooden support profile on the window sill and metal L-profile anchors on the jambs and lintel.







Airtightness concept





The system's airtightness is achieved as follows: the interior gypsum plaster layer serves as the airtight layer of the envelope. For junctions with windows and doors, special airtightness tapes are used on the interior face, maintaining continuity with the gypsum plaster. All junctions with other construction elements use special tapes or airtight paint solutions to ensure the airtightness line of the facade remains consistent in the interior gypsum plaster.



Summary of values



Opaque assemblies		U-value W/(m ² · K)
exterior wall	(EW1) 	0.24
flat roof	(FR1) 	0.17
floor slab	(FS1) 	0.33
pitched roof	(RO1) 	0.20


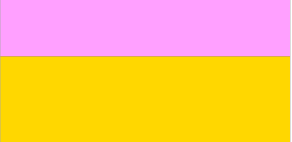
Frame Cuts with "dummy wood window warm-temperate" from "dummy window manufacturer" (0004)


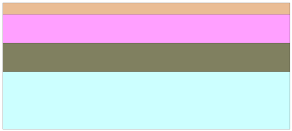
Frame values		Frame width b_f mm	U -value frame U_f W/(m ² · K)	Ψ -glazing edge Ψ_g W/(m · K)	Temp. Factor $f_{RSI=0.25}$ [-]
Bottom	(OB1) 	125	0.92	0.038	0.70
Top	(OH1) 	125	0.92	0.038	0.70
Lateral	(OJ1) 	125	0.92	0.038	0.70
Threshold	(OT1) 	125	0.92	0.038	0.70
		Spacer: PHI phB-Spacer		Secondary seal: Polysulfide	



Junctions		U1 U2 W/(m ² · K)	Ψ -value Ψ W/(m · K)	Temp. factor $f_{Rsi=0.25}$ [-]
ceiling integration 1 (EW1_EW1_CE_1)		0.24 0.24	0.013	0.941
exterior corner (EW1_EW1_ec1)		0.24 0.24	-0.058	0.846
interior corner (EW1_EW1_ic1)		0.24 0.24	0.025	0.947
internal wall integration into exterior wall (EW1_EW1_IW)		0.24 0.24	0.000	0.947
roof parapet 1 (EW1_FR1_rp_1)		0.24 0.17	0.009	0.844
bottom connection operable window 1 (EW1_OB1_1)		0.24 0.92	0.031	0.783
top connection operable window (EW1_OH1_1)		0.24 0.92	0.007	0.802
side connection operable window 1 (EW1_OJ1_1)		0.24 0.92	0.002	0.797
roof eave (EW1_RO1_ea1)		0.24 0.20	-0.001	0.881
roof verge (EW1_RO1_ve1)		0.24 0.20	-0.028	0.862
wall base 2 (FS1_EW1_2)		0.33 0.24	-0.011	0.802
threshold connection to floor slab (FS1_OT1_1)		0.33 0.92	-0.015	0.685

Opaque Assemblies

 exterior wall (EW1)	Material	Lambda	Thickness (mm)
		$W/(m \cdot K)$	
	EPS 035	0.035	140
	cement mortar/plaster, sand	1.000	5
	EQ_EW1 Thermoclay blocks 19 cm + mortar	0.325	190
	gypsum plaster (interior plaster)	0.570	15
	EQ_EW1 Air layer, unvented, horz, thickness 60 m + steel studs	0.361	60
	gypsum board 900 kg/m ³	0.250	15
	U-value: 0.24 W/(m ² · K)		

 flat roof (FR1)	Material	Lambda	Thickness (mm)
		$W/(m \cdot K)$	
	XPS 037	0.037	200
	Clay slab filler block (300 mm; RT 0,32 m2K/W)	0.938	300
	U-value: 0.17 W/(m ² · K)		

 floor slab (FS1)	Material	Lambda	Thickness (mm)
		$W/(m \cdot K)$	
	cement screet	1.400	40
	XPS 037	0.037	100
	concrete (1 % steel)	2.300	100
	EQ_ventilated crawl space	2.300	200
	U-value: 0.33 W/(m ² · K)		

 pitched roof (RO1)	Material	Lambda	Thickness (mm)
		$W/(m \cdot K)$	
	softwood, OSB – perpendicular to grain direction	0.130	19
	Onduline PIR 027	0.027	120
	Clay slab filler block (300 mm; RT 0,32 m2K/W)	0.938	300
	U-value: 0.20 W/(m ² · K)		

Frame Cuts with "dummy wood window warm-temperate" from "dummy window manufacturer"
(0004)



Bottom

$$b_f = 125 \text{ mm}$$
$$U_f = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi_g = 0.038 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.70$$



Top

$$b_f = 125 \text{ mm}$$
$$U_f = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi_g = 0.038 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.70$$



Lateral

$$b_f = 125 \text{ mm}$$
$$U_f = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi_g = 0.038 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.70$$



Threshold

$$b_f = 125 \text{ mm}$$
$$U_f = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi_g = 0.038 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.70$$





ceiling integration 1

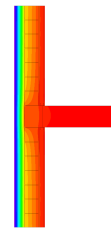
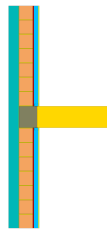
(EW1_EW1_CE_1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.013 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.941$$



exterior corner

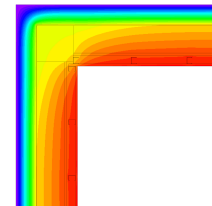
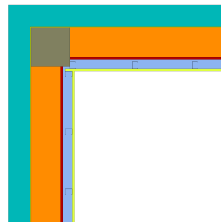
(EW1_EW1_ec1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = -0.058 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.846$$



interior corner

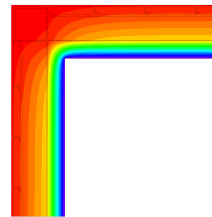
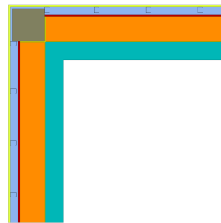
(EW1_EW1_ic1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.025 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.947$$



internal wall integration into exterior wall

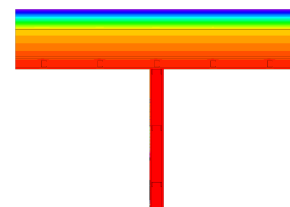
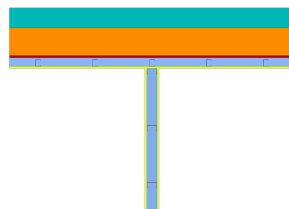
(EW1_EW1_IW)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.000 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.947$$



roof parapet 1

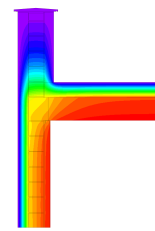
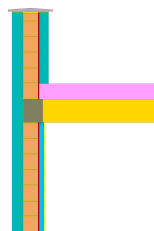
(EW1_FR1_rp_1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{FR1} = 0.17 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.009 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.844$$





bottom connection

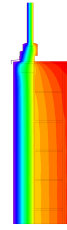
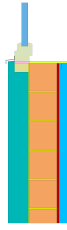
operable window 1 (EW1_OB1_1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{OB1} = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.031 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.783$$



top connection

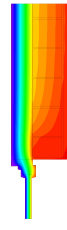
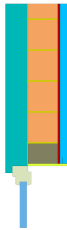
operable window (EW1_OH1_1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{OH1} = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.007 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.802$$



side connection

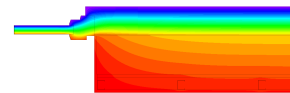
operable window 1 (EW1_OJ1_1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{OJ1} = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = 0.002 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.797$$



roof eave

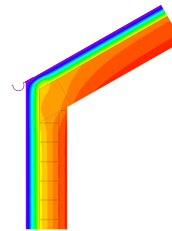
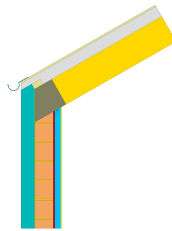
(EW1_RO1_ea1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{RO1} = 0.20 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = -0.001 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.881$$



roof verge

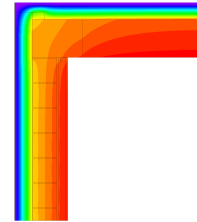
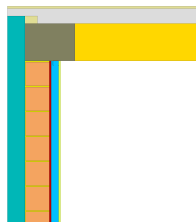
(EW1_RO1_ve1)

$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$U_{RO1} = 0.20 \text{ W}/(\text{m}^2 \cdot \text{K})$$

$$\Psi = -0.028 \text{ W}/(\text{m} \cdot \text{K})$$

$$f_{Rsi} = 0.862$$

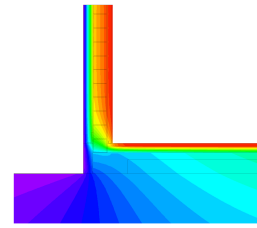
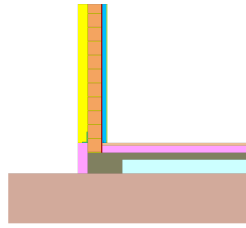




wall

base 2 (FS1_EW1_2)

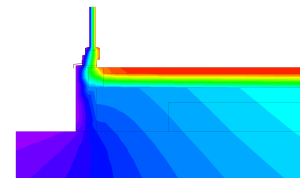
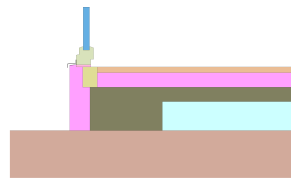
$$U_{FS1} = 0.33 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$U_{EW1} = 0.24 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi = -0.011 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.802$$



threshold connection

to floor slab (FS1_OT1_1)

$$U_{FS1} = 0.33 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$U_{OT1} = 0.92 \text{ W}/(\text{m}^2 \cdot \text{K})$$
$$\Psi = -0.015 \text{ W}/(\text{m} \cdot \text{K})$$
$$f_{Rsi} = 0.685$$



Disclaimer: The Passive House Institute GmbH (PHI) carries out heat transfer analyses according to the standards set out in the document "[Criteria and Algorithms for Certified Passive House Components: Opaque Construction Systems](#)" and based on information provided by the manufacturer. It is the responsibility of the project leader, e.g. the architect to ensure the appropriate assessments have been carried out for specific buildings, which may include more detailed analyses than those carried out for this certification. Use of a certified Passive House component does not guarantee that a construction project will achieve the [Passive House, EnerPHit or PHI Low Energy Building standard](#). In all cases full details are to be made available by the manufacturer on request to the engaged certified Passive House designer or certifier, who will be permitted to check these against the construction information and to perform on-site checks as part of the quality assurance process.