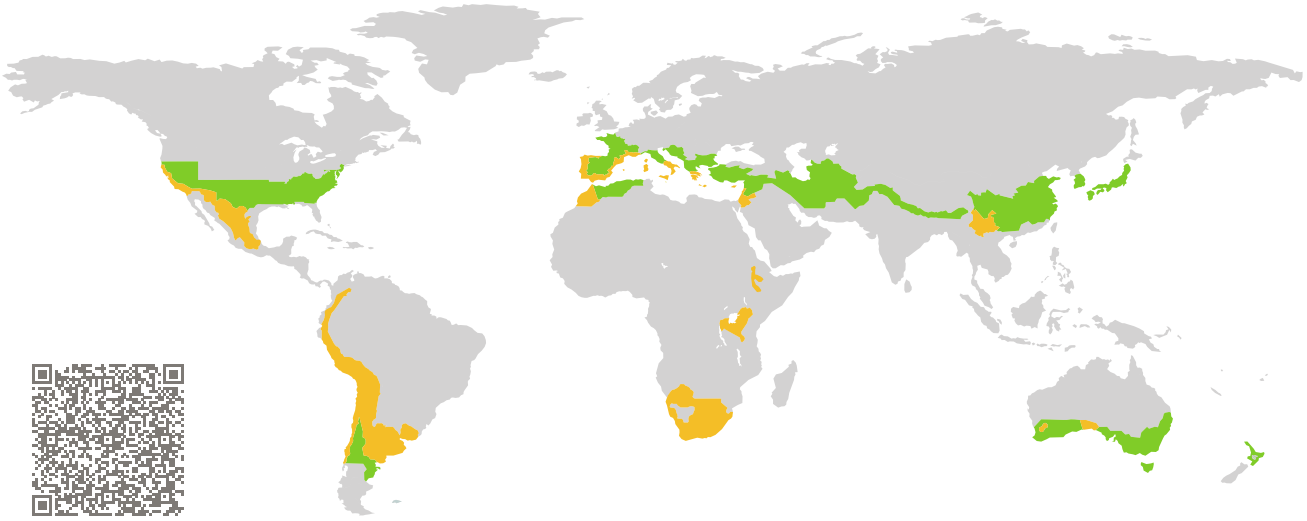
CERTIFICADO

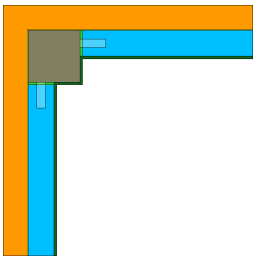
Componente certificado Passive House

ID del componente 2323cs04 válido hasta el 31 de diciembre de 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Alemania



Categoría:	**Construction system**
Fabricante:	**XELLA Thermopierre S. A., Bourgoin-Jallieu Cdx, France**
Nombre del producto:	**YTONG - URSA External Wall Ventilated Façade System**



Hygiene criterion

The mininum temperature factor of the interior surfaces is $f_{Rsi=0{,}25\,m^2\,K/W} \geq 0{,}65$

Comfort criterion

The U-value of the installed windows is $U_{wi} \leq 1{,}05\,W/(m^2\,K)$

Efficiency criteria

Heat transfer coefficient of building envelope: $U * f_{PHI} \leq 0{,}25\,W/(m^2\,K)$

Temperature factor of opaque junctions: $f_{Rsi=0{,}25\,m^2\,K/W} \geq 0{,}82$

Thermal bridge-free design for key connection details: $\Psi \leq 0{,}01\,W/(m\,K)$

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

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Opaque building envelope

Se trata de un sistema constructivo para fachadas ventiladas, que combina bloques de hormigón celular Ytong de densidad 500kg/m3 en espesor 15cm como soporte del cerramiento, junto con una capa de lana mineral Ursa Terra Vento Plus T0003 de 14cm de espesor. Como piel de acabado exterior, una fachada ventilada cuya sujeción se resuelve con fijaciones tipo Ejot anclados al soporte de Ytong y manteniendo una cámara de aire de 3cm entre la lana mineral y la solución exterior de la fachada ventilada. Conseguimos una fachada ligera, eficiente y de rápida ejecución, muy aislante y con muchas posibilidades de acabados estéticos.

Ventanas

La certificación se llevó a cabo con una ventana estándar apta para Passivhaus, que tiene un valor Uw de 1,00 W/(m²K), utilizando un valor Ug de 0,90 W/(m²K). La ventana se instala en la capa estructural, en lugar de en la capa de aislamiento, lo que no es típico de la construcción Passivhaus. Esto es factible en este caso, ya que los bloques estructurales YTONG también tienen un fuerte efecto aislante, debido a su baja conductividad térmica (0,16 W/(mK)).

Airtightness concept

Los bloques Ytong han sido ensayados y garantizan la hermeticidad al aire, pero la hermeticidad entre las juntas depende mucho de la instalación, y para asegurar un comportamiento hermético del conjunto, recomendamos que se aplique una capa hermética con 1,5cm de yeso en los paramentos por la cara interior. También aplicar membrana líquida en los encuentros entre paramentos más susceptibles de que haya movimientos, y la utilización de láminas de estanqueidad en los encuentros con la carpintería exterior, además de asegurar el sellado de todos los pasos de instalaciones con collarines aptas para ese fin.

Summary of values

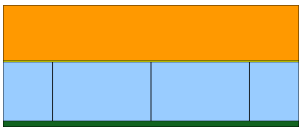
Opaque assemblies		U-value W/(m² K)	Thickness mm
exterior wall	(EW1) 	0,18	310
techo plano	(FR1) 	0,23	440
solera	(FS1) 	0,31	390

Frame Cuts with ”dummy wood window warm-temperate” from ”dummy window manufacturer” (0004)					
Valores del marco			Ancho del marco b_f mm	Valor- U marco U_f W/(m² K)	Valor-Ψ intercalario Ψ_g W/(m K)	Factor de temperatura $f_{Rsi=0,25}$ [-]
Inferior	(OB1)		125	0,92	0,038	0,70
Superior	(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
Intercalario: PHI phB-Spacer				Sellado secundario: Polisulfuro		

Junctions	U1 U2 U3 W/(m² K)	Ψ-value Ψ W/(m K)	Temp. factor $f_{Rsi=0,25}$ [-]
Construction beam in exterior wall (EW1_EW1_cb_1) 	0,18 0,18	0,016	0,954
ceiling integration 1 (EW1_EW1_CE_1) 	0,18 0,18	0,017	0,951
exterior corner (EW1_EW1_ec_1) 	0,18 0,18	–0,022	0,895
interior corner (EW1_EW1_ic_1) 	0,18 0,18	0,024	0,955
internal wall integration into exterior wall (EW1_EW1_IW_1) 	0,18 0,18	0,000	0,955
roof parapet 1 (EW1_FR1_rp_1) 	0,18 0,23	–0,022	0,863
bottom connection operable window 1 (EW1_OB1_1) 	0,18 0,92	0,040	0,793
top connection operable window (EW1_OH1_1) 	0,18 0,92	0,017	0,819
side connection operable window 1 (EW1_OJ1_1) 	0,18 0,92	0,011	0,816
Threshold to floor slab (FS1_EW1_OT1_1) 	0,31 0,18 0,92	–0,057	0,768
wall base to floor slab 1 (FS1_EW1_1) 	0,31 0,18	–0,022	0,872

Opaque Assemblies

exterior
wall (EW1)



Material	Lambda W/(m K)	Thickness (mm)
Plaster (ISO 10456)	0,800	15
Ytong blocks (plus mortar, equivalent value)	0,164	150
Mortar (ISO 10456)	1,000	5
URSA TERRA Vento Plus mineral wool (rated valu according to DIN 4108)	0,033	140

Total thickness: 310 mm
Rsi: 0,13 m^2 K/W
Rse: 0,13 m^2 K/W
U-value: 0,18 W/(m^2 K)

techo plano (FR1)

Material	Lambda W/(m K)	Thickness (mm)
Ceramic floor slab (lambda value calculation acc ding to Energiehaus)	1,237	300
URSA XPS N-III (rated value according to DIN 410	0,036	140

Total thickness: 440 mm
Rsi: 0,10 m^2 K/W
Rse: 0,04 m^2 K/W
U-value: 0,23 W/(m^2 K)

solera (FS1)

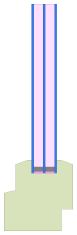
Material	Lambda W/(m K)	Thickness (mm)
Plastic floor covering (ISO 10456)	0,250	20
Underlay, porous rubber or plastic (ISO 10456)	0,100	15
Cement screed (DIN 4108)	1,400	55
Concrete with 1 % steel (ISO 10456)	2,300	200
URSA XPS N-V L (rated value according to DI 4108)	0,037	100

Total thickness: 390 mm
Rsi: 0,17 m^2 K/W
Rse: - m^2 K/W
U-value: 0,31 W/(m^2 K)

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

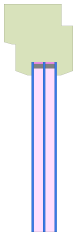
Inferior

b_f = 125 mm
U_f = 0,92 W/(m² K)
Ψ_g = 0,038 W/(m K)
f_{Rsi} = 0,70



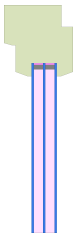

Superior

b_f = 125 mm
U_f = 0,92 W/(m² K)
Ψ_g = 0,038 W/(m K)
f_{Rsi} = 0,70



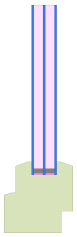

Lateral

b_f = 125 mm
U_f = 0,92 W/(m² K)
Ψ_g = 0,038 W/(m K)
f_{Rsi} = 0,70




Threshold

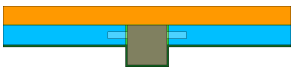
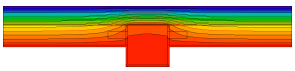
b_f = 125 mm
U_f = 0,92 W/(m² K)
Ψ_g = 0,038 W/(m K)
f_{Rsi} = 0,70




Construction

beam in exterior wall (EW1_EW1_cb_1)

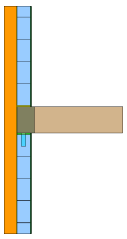
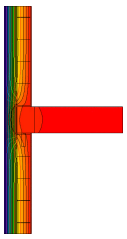
U_{EW1} = 0,18 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
Ψ = 0,016 W/(m K)
f_{Rsi} = 0,954

ceiling integration 1

(EW1_EW1_CE_1)

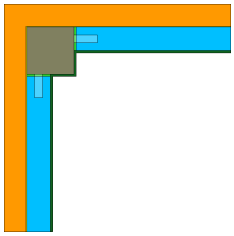
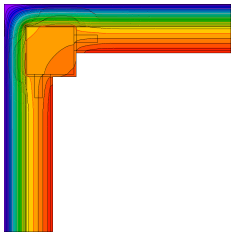
U_{EW1} = 0,18 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
Ψ = 0,017 W/(m K)
f_{Rsi} = 0,951

exterior corner

(EW1_EW1_ec_1)

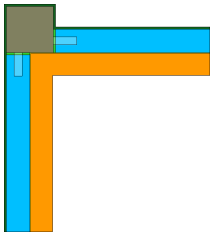
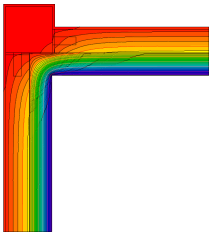
U_{EW1} = 0,18 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
Ψ = –0,022 W/(m K)
f_{Rsi} = 0,895

interior corner

(EW1_EW1_ic_1)

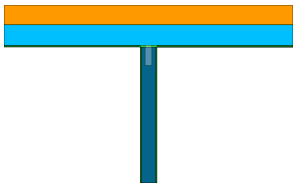
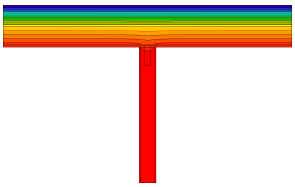
U_{EW1} = 0,18 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
Ψ = 0,024 W/(m K)
f_{Rsi} = 0,955

internal wall integration into exterior wall

(EW1_EW1_IW_1)

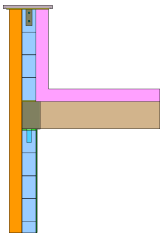
U_{EW1} = 0,18 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
Ψ = 0,000 W/(m K)
f_{Rsi} = 0,955

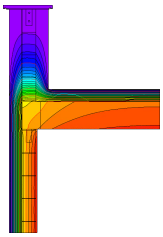



roof parapet 1

(EW1_FR1_rp_1)

U_{EW1} = 0,18 W/(m² K)
U_{FR1} = 0,23 W/(m² K)
Ψ = –0,022 W/(m K)
f_{Rsi} = 0,863

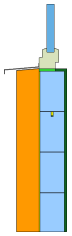


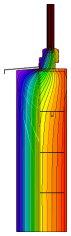


bottom connection

operable window 1 (EW1_OB1_1)

U_{EW1} = 0,18 W/(m² K)
U_{OB1} = 0,92 W/(m² K)
Ψ = 0,040 W/(m K)
f_{Rsi} = 0,793

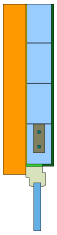




top connection

operable window (EW1_OH1_1)

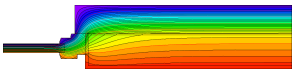
U_{EW1} = 0,18 W/(m² K)
U_{OH1} = 0,92 W/(m² K)
Ψ = 0,017 W/(m K)
f_{Rsi} = 0,819



side connection

operable window 1 (EW1_OJ1_1)

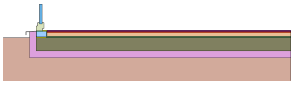
U_{EW1} = 0,18 W/(m² K)
U_{OJ1} = 0,92 W/(m² K)
Ψ = 0,011 W/(m K)
f_{Rsi} = 0,816

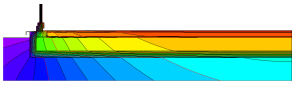


Threshold

to floor slab (FS1_EW1_OT1_1)

U_{FS1} = 0,31 W/(m² K)
U_{EW1} = 0,18 W/(m² K)
U_{OT1} = 0,92 W/(m² K)
Ψ = –0,057 W/(m K)
f_{Rsi} = 0,768





wall base

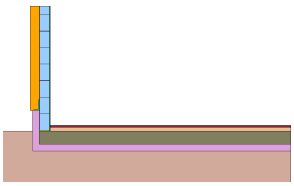
to floor slab 1 (FS1_EW1_1)

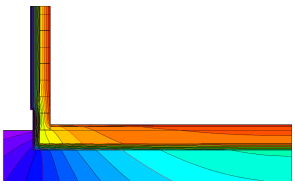
U_{FS1} = 0,31 W/(m^2 K)

U_{EW1} = 0,18 W/(m^2 K)

Ψ = –0,022 W/(m K)

f_{Rsi} = 0,872





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.