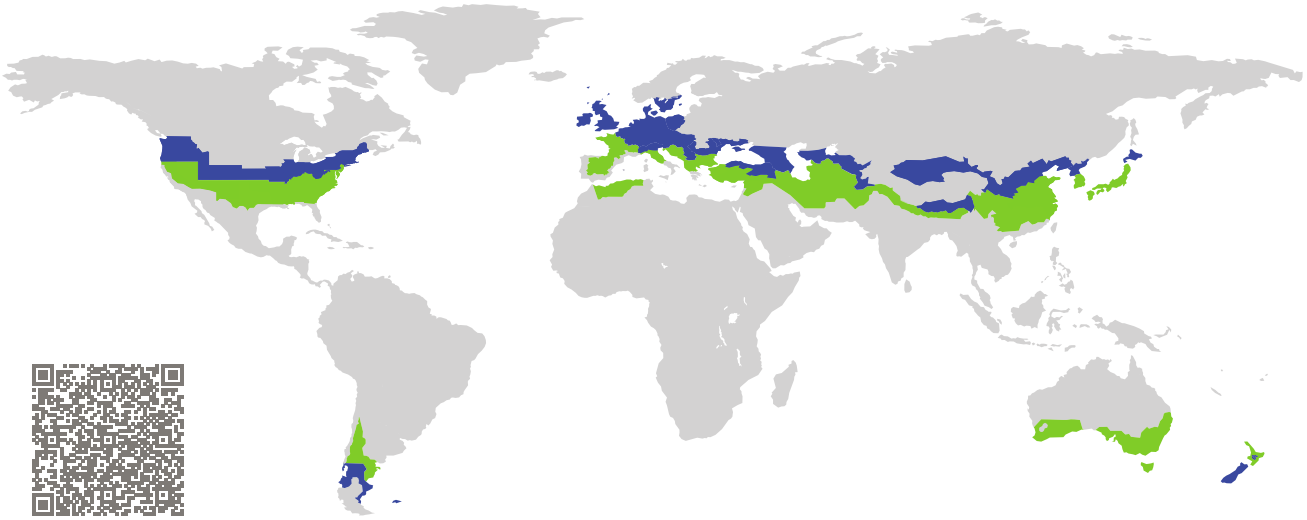
CERTIFICATE

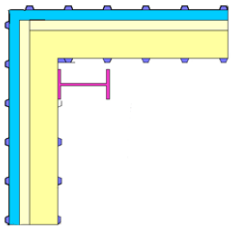
Certified Passive House Component

Component-ID 0782cs03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Construction system**
Manufacturer:	**ABC Building Systems(China)Co.,Ltd, Shanghai, China**
Product name:	**ABC-TM-pGBS-1**



Hygiene criterion

The mininum temperature factor of the interior surfaces is $f_{Rsi=0.25\,m^2\,K/W} \geq 0.70$

Comfort criterion

The U-value of the installed windows is $U_{wi} \leq 0.85\,W/(m^2\,K)$

Efficiency criteria

Heat transfer coefficient of building envelope: $U * f_{PHI} \leq 0.15\,W/(m^2\,K)$

Temperature factor of opaque junctions: $f_{Rsi=0.25\,m^2\,K/W} \geq 0.86$

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.

cool, temperate climate

CERTIFIED COMPONENT

Passive House Institute

ABC Building Systems(China)Co.,Ltd
No. 999 Li An Road, 28th Floor, Asia Financial Center, Minhang District, 201199 Shanghai, China
☎ +86(0)21?62759000 | ✉ wuzw@shabc.com | ☜ http://wwwshabs.com |

Opaque building envelope

Windows

Bausysteme sind nicht an einen bestimmten Fenstertyp gebunden. Deshalb wird für den Nachweis der Fenstereinbausituation im Allgemeinen ein fiktiver Fensterteil verwendet, dessen Rahmen gerade in- nerhalb der Grenze der Zertifizierbarkeit einer Passivhaus Komponente liegt.

Airtightness concept

Das Bausystem ABC pGBS-1 nutzt eine 0,03 cm PE-Folie als wichtiges Element der luftdichten Ebene.
Außenwand: Die PE-Folie ist zwischen Mineralwolle und Metallpaneel angeordnet. Die PE-Folie ist im Bereich des Innenflansches des Wand-Stahlträgers mit 10cm Überdeckung durch doppelseitig klebendes Butylkle- beband verklebt.
Dach: Die PE-Folie ist zwischen Mineralwolle und Metallpaneel angeordnet. Die PE-Folie ist im Bereich des Innenflansches des Dach-Stahlträgers mit 10cm Überdeckung durch doppelseitig klebendes Butylkle- beband verklebt.
Bodenplatte: Die PE-Folie ist zwischen dem extrudierten Polystyrol (XPS) Platten und der Deckschicht an den XPS- Platten im Bereich von 300 cm, mit 10 cm Überdeckung, durch ein doppelseitig klebendes Butylklebe- band verklebt.

Summary of values

Opaque assemblies		U-value W/(m² K)	Thickness mm
basement ceiling	(BC1) 	0.23	330
Basement Exterior Wall	(BEW1) 	0.19	380
exterior wall	(EW1) 	0.12	381
floor slab	(FS1) 	0.24	290
pitched roof	(RO1) 	0.11	429

Frame Cuts with ”Standard window - cool-temperate” from ”dummy window manufacturer” (0002)					
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)		100	0.89	0.028	0.69
Top	(OH1)		100	0.76	0.028	0.71
Lateral	(OJ1)		100	0.76	0.028	0.71
Threshold	(OT1)		100	0.98	0.032	0.65
Spacer: PHI phA Spacer				Secondary seal: Polysulfide		

Junctions		U1 U2 W/(m² K)	Ψ-value Ψ W/(m K)	Temp. factor $f_{Rsi=0.25}$ [-]
Basement interior and interior wall integration into basement ceiling (BC1_BC1_BIW_IW_2)		0.23 0.23	0.000	0.943
Exterior wall plinth on basement ceiling with basement exterior wall (BC1_EW1_BEW_1)		0.23 0.12	–0.009	0.901
Basement exterior wall to exterior wall with basement ceiling integration (BEW1_EW1_BC_1)		0.19 0.12	–0.025	0.905
Ceiling integration into exterior wall (EW1_EW1_CE_1)		0.12 0.12	0.005	0.928
Exterior corner exterior wall (EW1_EW1_ec_1)		0.12 0.12	–0.065	0.968
Interior corner exterior wall (EW1_EW1_ic_1)		0.12 0.12	0.023	0.976
Internal wall integration into exterior wall (EW1_EW1_IW_1)		0.12 0.12	–0.002	0.974
Window bottom operable window in exterior wall (EW1_OB1_1)		0.12 0.89	0.001	0.932
Window head operable window in exterior wall (EW1_OH1_1)		0.12 0.76	0.028	0.933
Window head operable window in exterior wall with shading box (EW1_OH1_sb_1)		0.12 0.76	0.028	0.933
Window jamb operable window in exterior wall (EW1_OJ1_1)		0.12 0.76	0.017	0.953
Window jamb operable window in exterior wall with rail for shading (EW1_OJ1_sb_1)		0.12 0.76	0.017	0.953
Threshold to exterior wall with ceiling integration and balcony connection (EW1_OT1_CE_bc_1)		0.12 0.98	0.011	0.757
Roof eave pitched roof (EW1_RO1_ea_1)		0.12 0.11	–0.039	0.916
Roof ridge monopitched roof (EW1_RO1_ri_1)		0.12 0.11	–0.050	0.922
Roof verge		0.12 0.11	–0.066	0.922

Junctions	U1 U2 W/(m² K)	Ψ-value Ψ W/(m K)	Temp. factor $f_{Rsi=0.25}$ [-]
Exterior wall plinth on floor slab (FS1_EW1_1) 	0.24 0.12	–0.121	0.899
Internal wall integration into floor slab (FS1_FS1_IW_1) 	0.24 0.24	0.000	0.963
Roof ridge pitched roof (RO1_RO1_ri_1) 	0.11 0.11	0.006	0.935

Opaque Assemblies

basement ceiling (BC1)

Material	Lambda W/(m K)	Thickness (mm)
ABC Building Systems(China)Co.,Ltd - Stahlbeto	2.300	140
ABC Building Systems(China)Co.,Ltd - XPS-Platte 2	0.039	150
ABC Building Systems(China)Co.,Ltd -Estrich	1.400	40
	Total thickness: 330 mm	
	Rsi: 0.17 m^2 K/W	
	Rse: 0.17 m^2 K/W	
	U-value: 0.23 W/(m^2 K)	

Basement Exterior Wall (BEW1)

Material	Lambda W/(m K)	Thickness (mm)
ABC Building Systems(China)Co.,Ltd - XPS-Platte 2	0.039	200
ABC Building Systems(China)Co.,Ltd - Stahlbeto	2.300	180
	Total thickness: 380 mm	
	Rsi: 0.13 m^2 K/W	
	Rse: - m^2 K/W	
	U-value: 0.19 W/(m^2 K)	

exterior wall (EW1)

Material	Lambda W/(m K)	Thickness (mm)
ABC Building Systems(China)Co.,Ltd - Stahl	58.200	1
ABC Building Systems(China)Co.,Ltd - XPS-Platte 3	0.037	80
ABC Building Systems(China)Co.,Ltd - Mineralwol 3	0.040	80
ABC Building Systems(China)Co.,Ltd - Mineralwol 2	0.055	220
ABC Building Systems(China)Co.,Ltd - Stahl	58.200	1
	Total thickness: 381 mm	
	Rsi: 0.13 m^2 K/W	
	Rse: 0.04 m^2 K/W	
	U-value: 0.12 W/(m^2 K)	

floor slab (FS1)

Material	Lambda W/(m K)	Thickness (mm)
ABC Building Systems(China)Co.,Ltd - Stahlbeto	2.300	100
ABC Building Systems(China)Co.,Ltd - XPS-Platte 2	0.039	150
ABC Building Systems(China)Co.,Ltd -Estrich	1.400	40
	Total thickness: 290 mm	
	Rsi: 0.17 m^2 K/W	
	Rse: - m^2 K/W	
	U-value: 0.24 W/(m^2 K)	

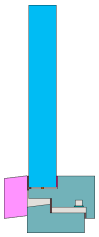
pitched roof (RO1)

Material	Lambda W/(m K)	Thickness (mm)
ABC Building Systems(China)Co.,Ltd - SS360 Dac Paneel	58.200	1
ABC Building Systems(China)Co.,Ltd- Luftschicht	0.130	8
ABC Building Systems(China)Co.,Ltd - XPS-Platte	0.041	180
ABC Building Systems(China)Co.,Ltd -Mineralwol	0.054	240
ABC Building Systems(China)Co.,Ltd - Stahl	58.200	1
	Total thickness: 429 mm	
	Rsi: 0.10 m^2 K/W	
	Rse: 0.04 m^2 K/W	
	U-value: 0.11 W/(m^2 K)	

Frame Cuts with ”Standard window - cool-temperate” from ”dummy window manufacturer” (0002)

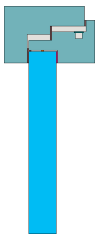
Bottom

b_f = 100 mm
U_f = 0.89 W/(m^2 K)
Ψ_g = 0.028 W/(m K)
f_{Rsi} = 0.69



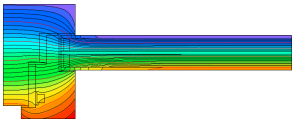
Top

b_f = 100 mm
U_f = 0.76 W/(m^2 K)
Ψ_g = 0.028 W/(m K)
f_{Rsi} = 0.71



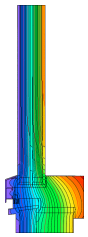
Lateral

b_f = 100 mm
U_f = 0.76 W/(m^2 K)
Ψ_g = 0.028 W/(m K)
f_{Rsi} = 0.71



Threshold

b_f = 100 mm
U_f = 0.98 W/(m^2 K)
Ψ_g = 0.032 W/(m K)
f_{Rsi} = 0.65



Basement interior and interior wall integration into basement ceiling

(BC1_BC1_BIW_IW_2)

U_{BC1} = 0.23 W/(m² K)
U_{BC1} = 0.23 W/(m² K)
Ψ = 0.000 W/(m K)
f_{Rsi} = 0.943

Exterior wall plinth on basement ceiling with basement exterior wall

(BC1_EW1_BEW_1)

U_{BC1} = 0.23 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = –0.009 W/(m K)
f_{Rsi} = 0.901

Basement exterior wall to exterior wall with basement ceiling integration

(BEW1_EW1_BC_1)

U_{BEW1} = 0.19 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = –0.025 W/(m K)
f_{Rsi} = 0.905

Ceiling integration into exterior wall

(EW1_EW1_CE_1)

U_{EW1} = 0.12 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = 0.005 W/(m K)
f_{Rsi} = 0.928

Exterior corner

exterior wall (EW1_EW1_ec_1)

U_{EW1} = 0.12 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = –0.065 W/(m K)
f_{Rsi} = 0.968

Interior corner

exterior wall (EW1_EW1_ic_1)

U_{EW1} = 0.12 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = 0.023 W/(m K)
f_{Rsi} = 0.976

Internal wall integration

into exterior wall (EW1_EW1_IW_1)

U_{EW1} = 0.12 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = –0.002 W/(m K)
f_{Rsi} = 0.974

Window bottom

operable window in exterior wall (EW1_OB1_1)

U_{EW1} = 0.12 W/(m² K)
U_{OB1} = 0.89 W/(m² K)
Ψ = 0.001 W/(m K)
f_{Rsi} = 0.932

Window head

operable window in exterior wall (EW1_OH1_1)

U_{EW1} = 0.12 W/(m² K)
U_{OH1} = 0.76 W/(m² K)
Ψ = 0.028 W/(m K)
f_{Rsi} = 0.933

Window head

operable window in exterior wall with shading box (EW1_OH1_sb_1)

U_{EW1} = 0.12 W/(m² K)
U_{OH1} = 0.76 W/(m² K)
Ψ = 0.028 W/(m K)
f_{Rsi} = 0.933

Window jamb

operable window in exterior wall (EW1_OJ1_1)

U_{EW1} = 0.12 W/(m² K)
U_{OJ1} = 0.76 W/(m² K)
Ψ = 0.017 W/(m K)
f_{Rsi} = 0.953

Window jamb

operable window in exterior wall with rail for shading (EW1_OJ1_sb_1)

U_{EW1} = 0.12 W/(m² K)
U_{OJ1} = 0.76 W/(m² K)
Ψ = 0.017 W/(m K)
f_{Rsi} = 0.953

Threshold

to exterior wall with ceiling integration and balcony connection (EW1_OT1_CE_bc_1)

U_{EW1} = 0.12 W/(m² K)
U_{OT1} = 0.98 W/(m² K)
Ψ = 0.011 W/(m K)
f_{Rsi} = 0.757

Roof eave

pitched roof (EW1_RO1_ea_1)

U_{EW1} = 0.12 W/(m² K)
U_{RO1} = 0.11 W/(m² K)
Ψ = –0.039 W/(m K)
f_{Rsi} = 0.916

Roof ridge

monopitched roof (EW1_RO1_ri_1)

U_{EW1} = 0.12 W/(m² K)
U_{RO1} = 0.11 W/(m² K)
Ψ = –0.050 W/(m K)
f_{Rsi} = 0.922

Roof verge

pitched roof (EW1_RO1_ve_1)

U_{EW1} = 0.12 W/(m² K)
U_{RO1} = 0.11 W/(m² K)
Ψ = –0.066 W/(m K)
f_{Rsi} = 0.922

Exterior wall plinth

on floor slab (FS1_EW1_1)

U_{FS1} = 0.24 W/(m² K)
U_{EW1} = 0.12 W/(m² K)
Ψ = –0.121 W/(m K)
f_{Rsi} = 0.899

Internal wall integration

into floor slab (FS1_FS1_IW_1)

U_{FS1} = 0.24 W/(m² K)
U_{FS1} = 0.24 W/(m² K)
Ψ = 0.000 W/(m K)
f_{Rsi} = 0.963

Roof ridge

pitched roof (RO1_RO1_ri_1)

U_{RO1} = 0.11 W/(m² K)

U_{RO1} = 0.11 W/(m² K)

Ψ = 0.006 W/(m K)

f_{Rsi} = 0.935

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.