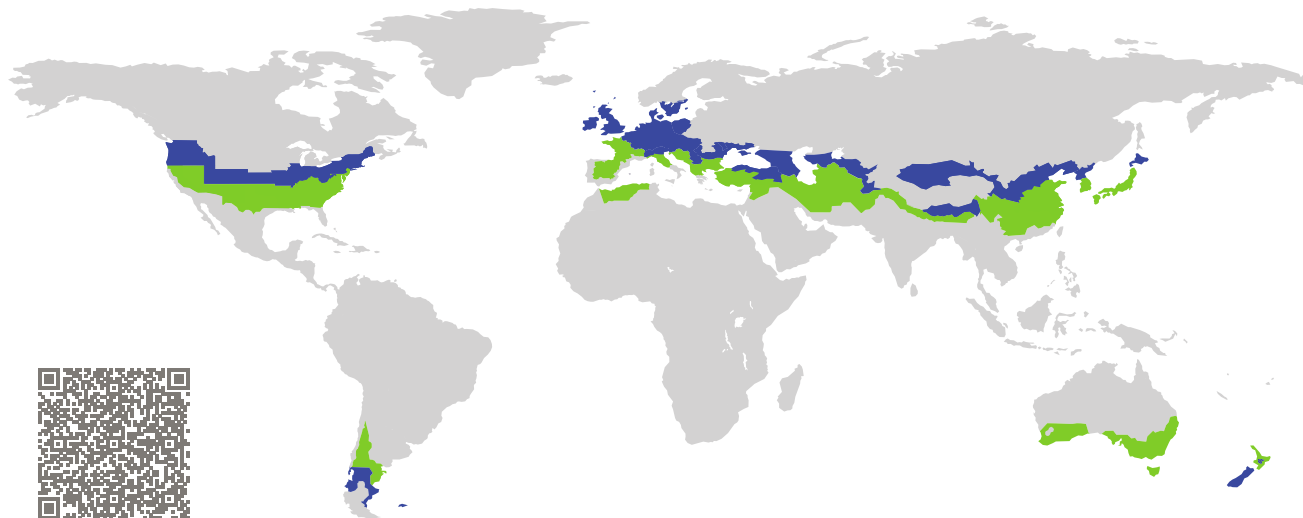


CERTIFICATE

Certified Passive House Component

Component-ID 1706ds03 valid until 31st December 2022

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



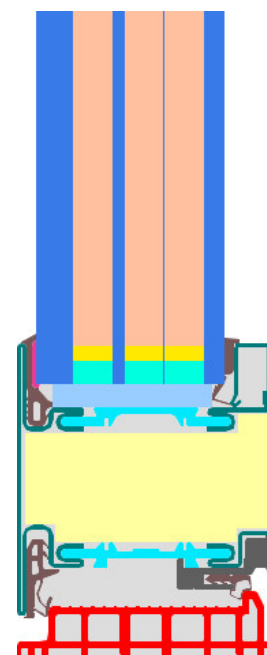
Category: **Entry door**
Manufacturer: **NEOS Protect Ltd.
Newcastle
United Kingdom**
Product name: **NEOS HI Entrance Door (Pilot
Certification)**

**This certificate was awarded based on the following
criteria for the cool, temperate climate zone**

Comfort $U_D = 0.77 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$
 $U_{D,\text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$
with $U_g^1 = 0.33 \text{ W}/(\text{m}^2 \text{ K})$

Hygiene $f_{Rsi=0.25} \geq 0.70$
Airtightness $Q_{100} = 2.25 \leq 2.25 \text{ m}^3/(\text{h m})$

¹Fully glazed door



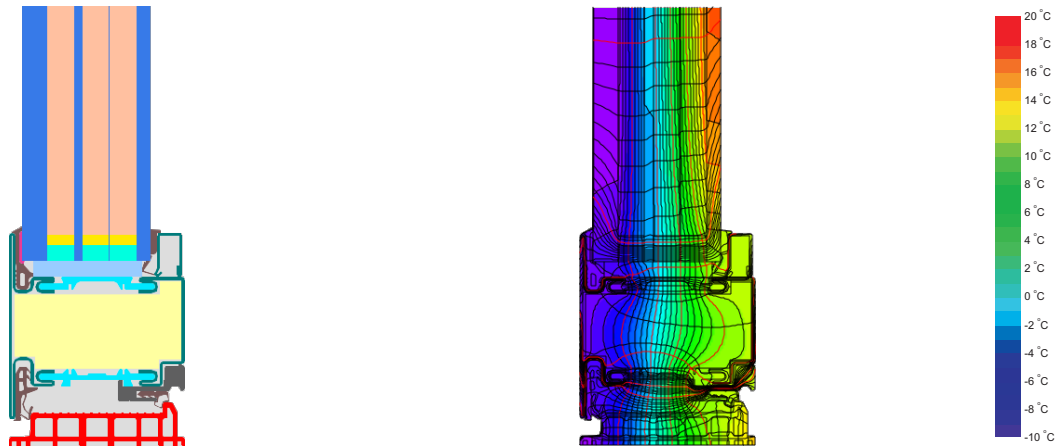
(Outward open)

cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute



Calculation model

Isothermal

Description

Steel frame security door with phenolic foam insulation (Kingspan Kooltherm, 0,022 W/(mK)). The door is certified using quadruple glazing with $U_g = 0,33 \text{ W/(m}^2\text{K)}$ with 11,5 mm LSG / 12 mm kr90 / 4 mm toughened glass / 12 mm kr90 / CUIN low-e transparent film / 12 mm kr90 / 6,4 mm LSG. Spacer: SuperSpacer Premium with butyl secondary seal. Airtightness class 4 according to EN 12207 is achieved. Pilot certification; the U_d -value depends on the use of a very low U_g -value IGU with a proprietary coated film, the service life of which is yet to be fully demonstrated.

Explanation






The U-values of the door apply to a door 1.10 m wide by 2.20 m tall.


A detailed report of the calculations performed in the context of certification is available from the manufacturer.

Unless stated otherwise, the air tightness was determined according to EN 1026 with respect to the joint length under climate load in conjunction with EN 1121 for the closed, non-locked door. The result corresponds at least to air-tightness class 3 according to EN 12207.


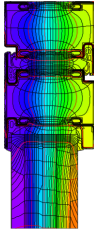
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.


Further information relating to certification can be found on www.passivehouse.com and passipedia.org.

Frame values			Frame width b_f mm	U -value frame U_f W/(m ² K)	Ψ edge Ψ_g W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Top	(to)		130	1.38	0.035	0.75
Threshold	(th)		97	1.57	0.033	0.72
Hinge side door	(hs)		130	1.38	0.035	0.75
Lock side Door	(ls)		130	1.64	0.030	0.70
Mullion flying (wing)	(fm)		220	1.34	0.018	0.71
			Spacer: Super Spacer® Premium		Secondary seal: Butyl	

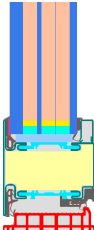
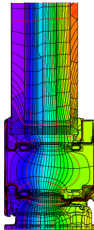
 **Top**


$b_f = 130.00 \text{ mm}$
 $U_f = 1.38 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.035 \text{ W/(m K)}$
 $f_{Rsi} = 0.75$

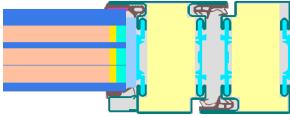
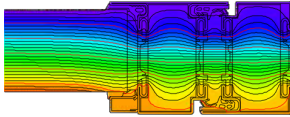
 **Threshold**


$b_f = 97.00 \text{ mm}$
 $U_f = 1.57 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.033 \text{ W/(m K)}$
 $f_{Rsi} = 0.72$

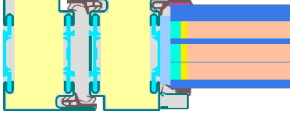
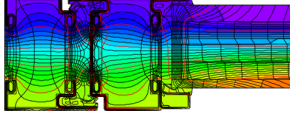
 **Hinge side
door**

$b_f = 130.00 \text{ mm}$
 $U_f = 1.38 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.035 \text{ W/(m K)}$
 $f_{Rsi} = 0.75$

 **Lock side
Door**

$b_f = 130.00 \text{ mm}$
 $U_f = 1.64 \text{ W/(m}^2 \text{ K)}$
 $\Psi_g = 0.030 \text{ W/(m K)}$
 $f_{Rsi} = 0.70$



Mullion

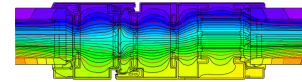
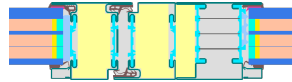
flying (wing)

$$b_f = 220.00 \text{ mm}$$

$$U_f = 1.34 \text{ W}/(\text{m}^2 \text{ K})$$

$$\Psi_g = 0.018 \text{ W}/(\text{m K})$$

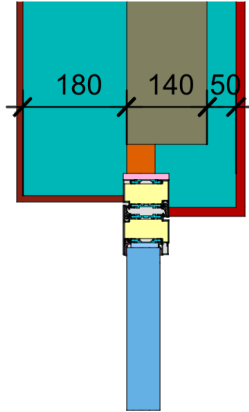
$$f_{Rsi} = 0.71$$



Validated installations

Formwork blocks top (operable)

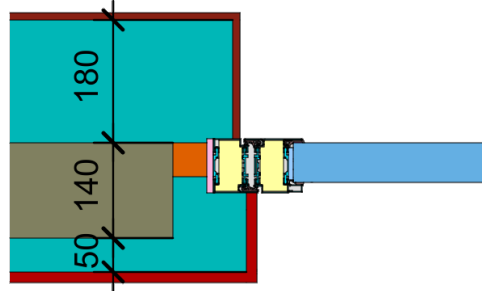
$$U_1 = 0.15 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.011 \text{ W/(m K)}$$

Formwork blocks side (operable)

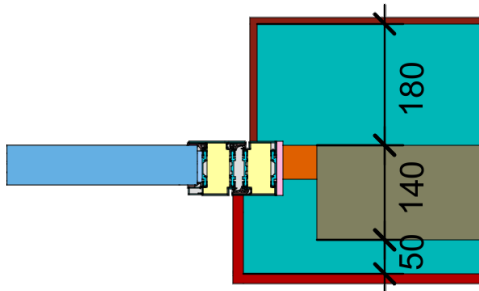
$$U_1 = 0.15 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.009 \text{ W/(m K)}$$

Formwork blocks side (operable)

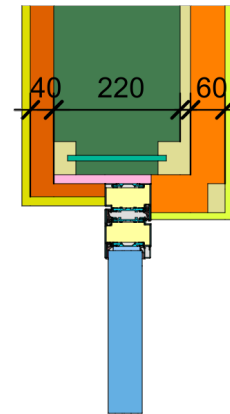
$$U_1 = 0.15 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.011 \text{ W/(m K)}$$

Lightweight timber top (operable)

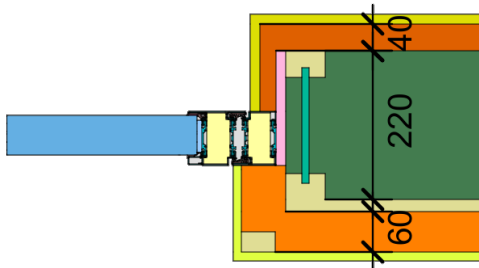
$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = -0.001 \text{ W/(m K)}$$

Lightweight timber side (operable)

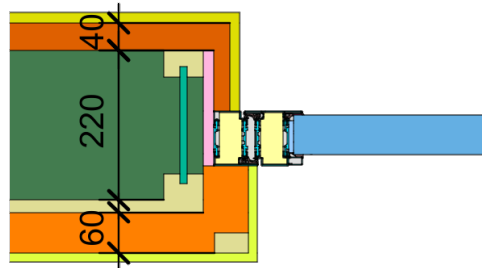
$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = -0.001 \text{ W/(m K)}$$

Lightweight timber side (operable)

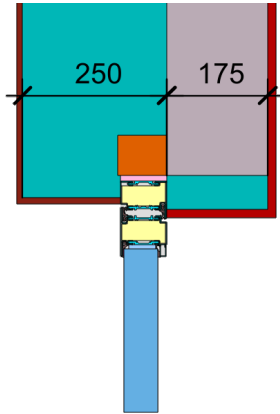
$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = -0.006 \text{ W/(m K)}$$

Exterior insulation and finishing s (EIFS)
top (operable)

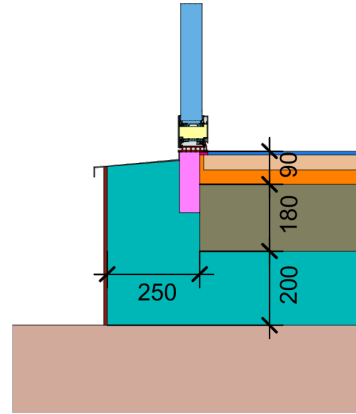
$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.008 \text{ W/(m K)}$$

Ext. ins. a. finish. s. (EIFS) threshold
floor slab (operable)

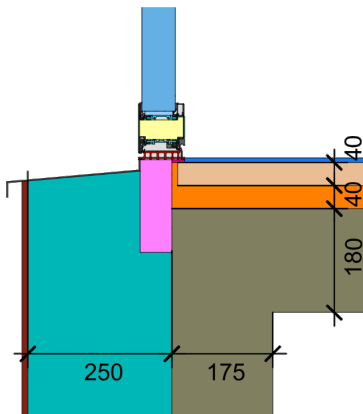
$$U_1 = 0.13 \quad U_2 = 0.14 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.053 \text{ W/(m K)}$$

Ext insulation a. finish. s. (EIFS)
threshold ceiling (operable)

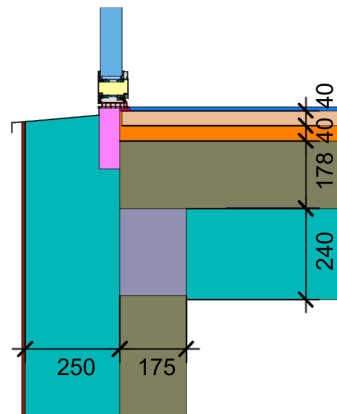
$$U_1 = 0.14 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.069 \text{ W/(m K)}$$

Exterior insulation and finishing s (EIFS)
threshold (operable)

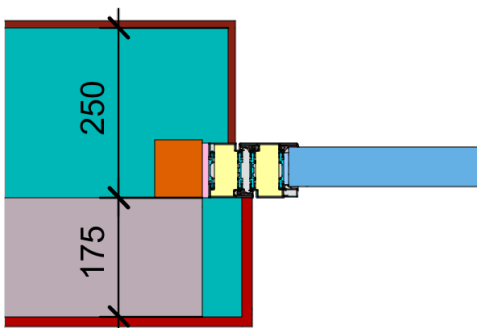
$$U_1 = 0.13 \quad U_2 = 0.12 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.059 \text{ W/(m K)}$$

Exterior insulation and finishing system
(EIFS) side (operable)

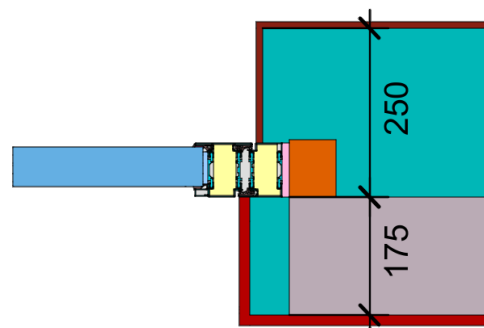
$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.011 \text{ W/(m K)}$$

Exterior insulation and finishing system
(EIFS) side (operable)

$$U_1 = 0.13 \text{ [W/(m}^2 \text{ K)]}$$



$$\Psi_{\text{install}} = 0.008 \text{ W/(m K)}$$

