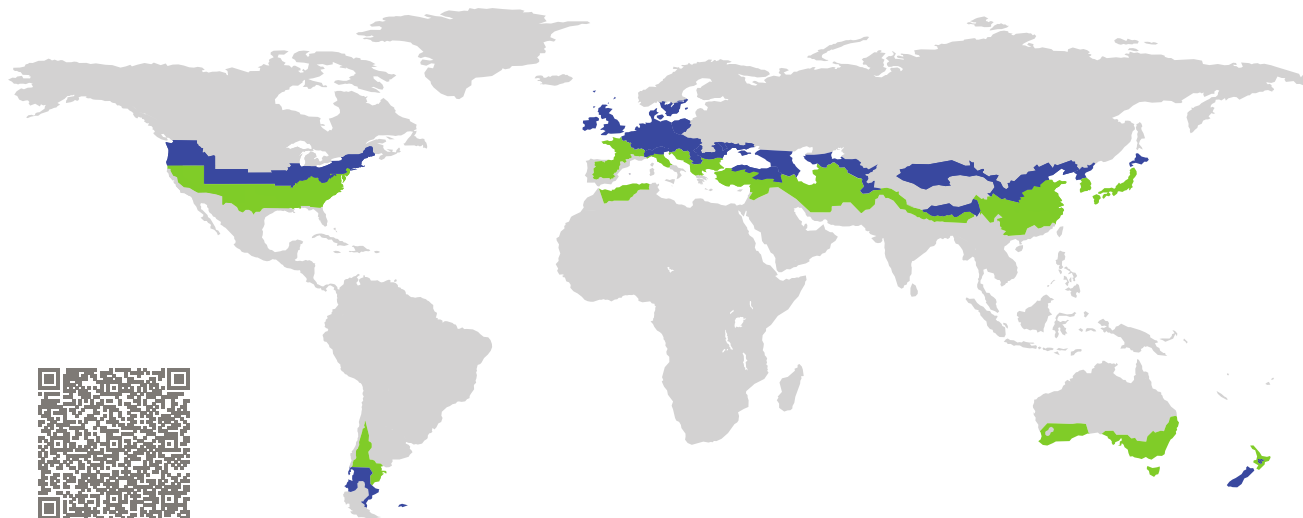


CERTIFICATE

Certified Passive House Component

Component-ID 2376wi03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

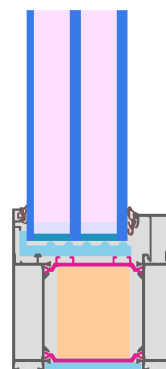


Category: **Fixed window**
Manufacturer: **ÇUHADAROĞLU METAL SAN. VE TİC. AŞ.,
Istanbul,
Turkey**
Product name: **DS 90 fixed glazing**

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

Comfort $U_W = 0.76 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$
 $U_{W, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$
with $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$

Hygiene $f_{Rsi=0.25} \geq 0.70$



cool, temperate climate



**CERTIFIED
COMPONENT**

Passive House Institute

Passive House
efficiency class

phE

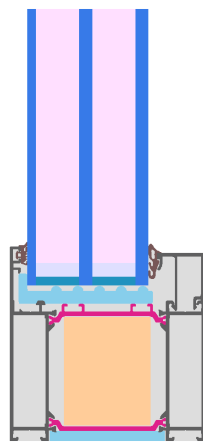
phD

phC

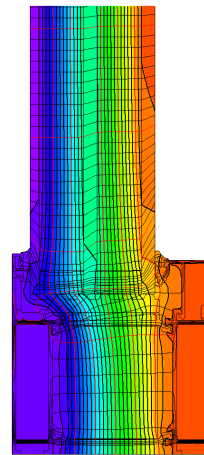
phB

phA

www.passivehouse.com



Calculation model



Isothermal

Description

Aluminum frame with thermal separation made of PA 66 GF 25 (0.21 W/(m.K)) and insulation insert made of phenolic foam (0.022 W/(mK)). Pane thickness: 56 mm (4/20/6/20/6), rebate depth: 17 mm.

Explanation

The window U-values were calculated for the test window size of 1.23 m × 1.48 m with $U_g = 0.70$ W/(m² K). If a higher quality glazing is used, the window U-values will improve as follows:

Glazing	$U_g =$	0.70	0.64	0.58	0.54	W/(m ² K)
		↓	↓	↓	↓	
Window	$U_W =$	0.76	0.72	0.67	0.64	W/(m ² K)

Transparent building components are classified into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge, and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

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.

Validated installations

Formwork blocks (fixed)		Ventillated facade (fixed glazed)		Exterior insulation and finishing system (EIFS) (fixed glazed)	
$U_{Wall} = 0.15 \text{ W}/(\text{m}^2 \text{ K})$		$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$		$U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$	
<p>Exterior plaster 1.0 W/(mK) EPS 0.035 W/(mK) Concrete 2.3 W/(mK) EPS 0.035 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Insulation 0.040 W/(mK)</p>		<p>Ventillated facade – substructure Mineral wool 0.035 W/(mK) Concrete 2.3 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>		<p>Exterior plaster 1.0 W/(mK) EPS 0.035 W/(mK) Adhesive 0.70 W/(mK) Sand-lime brick 1.0 W/(mK) Interior plaster 0.57 W/(mK)</p> <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</p>	
$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)	$\Psi_{install}$	W/(m K)
Top	0.017	Top	0.016	Top	0.016
Side	0.017	Side	0.016	Side	0.016
Bottom	0.034	Bottom	0.028	Bottom	0.027
$U_{W,installed} = 0.82 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,installed} = 0.82 \text{ W}/(\text{m}^2 \text{ K})$		$U_{W,installed} = 0.82 \text{ W}/(\text{m}^2 \text{ K})$	

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 $f_{Rsi=0.25}$ [-]
Mullion 1 casement	(1M1)		162	0.86	0.023	0.78
Bottom fixed	(FB1)		90	0.69	0.025	0.79
Top fixed	(FH1)		90	0.69	0.025	0.79
Lateral fixed	(FJ1)		90	0.69	0.025	0.79
Bottom	(OB1)		157	0.81	0.024	0.79
Top	(OH1)		157	0.80	0.024	0.79
Lateral	(OJ1)		157	0.80	0.024	0.79
Spacer: SWISSPACER ULTIMATE			Secondary seal: Butyl			

