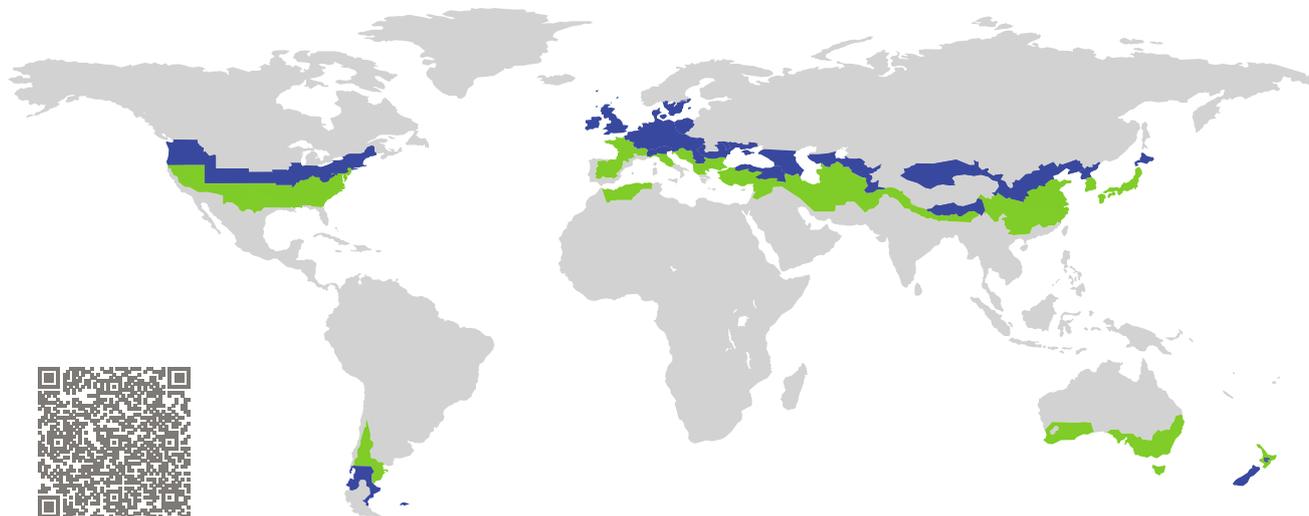


CERTIFICATE

Certified Passive House Component

Component-ID 2139wi03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

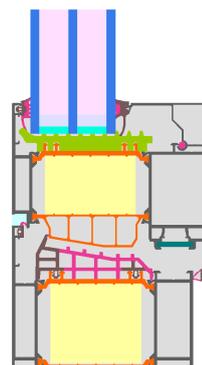


Category: **Window Frame**
Manufacturer: **Shenzhen HOPO Window Control Technology Co., Ltd, Shenzhen, China**
Product name: **STORO HS58-100 Passive**

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

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

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



Passive House
efficiency class

phE

phD

phC

phB

phA

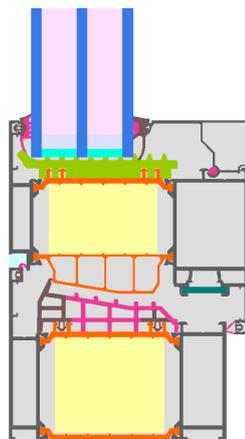
www.passivehouse.com

cool, temperate climate

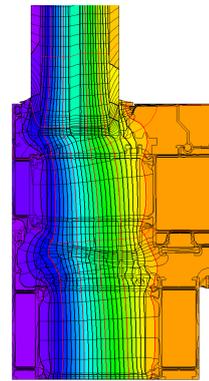


**CERTIFIED
COMPONENT**

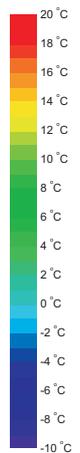
Passive House Institute



Calculation model



Isothermal



Description

Aluminium frame with thermal separation (low lambda PA 0.21 W/(mK)) and insulation (Kooltherm 0.022 W/(mK) and PE foam 0.038 W/(mK)); Pane thickness: 47 mm (5/16/5/16/5); Rebate depth: 17 mm; Spacer: Technoform-Spacer SP16; Secondary sealing: Butyl

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 | $U_W =$ | 0.80 | 0.76 | 0.72 | 0.70 | 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

| Exterior insulation and finishing system | | Ventilated facade | | Cavity wall | |
|--|---------|--|---------|--|---------|
| $U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$ | | $U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$ | | $U_{Wall} = 0.13 \text{ W}/(\text{m}^2 \text{ K})$ | |
| <p>Exterior plaster 1.0 W/(mK) EPS 0.035 W/(mK) Adhesive 0.70 W/(mK) Sand-lime brick 1.0 W/(mK) Interior plaster 0.57 W/(mK)</p> | | <p>Ventilated facade – substructure Mineral wool 0.035 W/(mK) Concrete 2.3 W/(mK) Interior plaster 0.57 W/(mK)</p> | | <p>Clinker Brick 1.2 W/(mK) Air gap EPS 0.035 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> | | <p>Suitable fastening, e.g. mounting frame or bracket, but only protruding as far as necessary for fixing the window</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 | 0.016 | Top | 0.016 | Top | 0.016 |
| Side | 0.016 | Side | 0.016 | Side | 0.016 |
| Bottom | 0.023 | Bottom | 0.023 | Bottom | 0.023 |
| $U_{W, installed} = 0.85 \text{ W}/(\text{m}^2 \text{ K})$ | | $U_{W, installed} = 0.85 \text{ W}/(\text{m}^2 \text{ K})$ | | $U_{W, installed} = 0.85 \text{ W}/(\text{m}^2 \text{ K})$ | |

| 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 $f_{Rsi=0.25}$ [-] |
|--------------------------------|-------|----------------------------|---|---|---------------------------------------|
| Transom 1 casement | (1T1) | 173 | 0.78 | 0.026 | 0.78 |
| Bottom | (OB1) | 148 | 0.79 | 0.026 | 0.78 |
| Top | (OH1) | 148 | 0.79 | 0.026 | 0.78 |
| Lateral | (OJ1) | 148 | 0.79 | 0.026 | 0.78 |
| Spacer: Technoform-Spacer SP16 | | Secondary seal: Butyl | | | |

