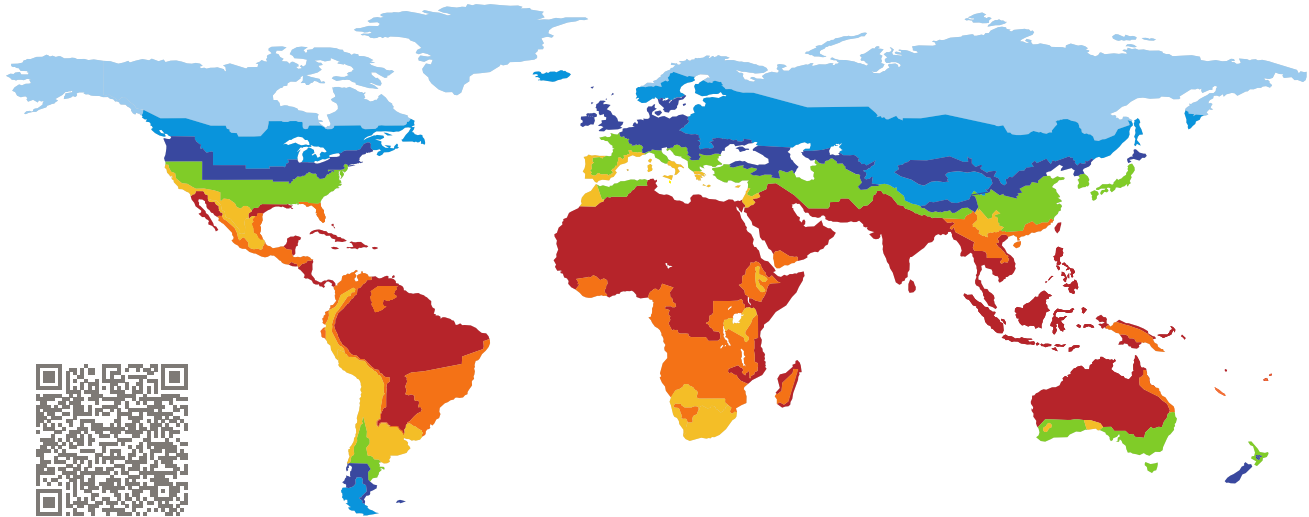


CERTIFICATE

Certified Passive House Component

Component-ID 1574ao00 valid until 31st December 2023

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category: **Wall penetration sealing**
Manufacturer: **Naber GmbH
Germany**
Product name: **Bixo**
Specification: Exhaust air unit
Nominal size: DN

Airflow range
Exhaust air: 0–410 m ³ /h
Residual leakage
$q_{l50} = 0.36 \text{ m}^3/\text{h}$ (± 0.0081)
Pressure loss
$\Delta p_{exh300} = 82 \text{ Pa}$

This certificate was awarded based on the product meeting the following main criteria

Residual leakage at 50 Pa $q_l \leq 1 \text{ m}^3/\text{h}/\text{Exterior wall air outlet}$
Pressure loss at 300 m³/h $\Delta p \leq 100 \text{ Pa}$

all climate zones



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Residual leakage

The residual leakage is determined by measurement. At a differential pressure of ± 50 Pa, the leakage volume flow q_{l50} must not exceed a value of $1 \text{ m}^3/\text{h}$ per external wall air outlet.

The specified certificate value refers to the measured leakage volume flow of the tested exterior wall air outlet at a differential pressure of ± 50 Pa. The leakage volume flow q_{l8} at a differential pressure of ± 8 Pa is relevant for determine the energy balance of the building. If q_{l8} is $\geq 0.3 \text{ m}^3/\text{h}$, the additional heat loss due to infiltration must be taken into account in the building energy balance according to [Guideline].

Residual leakage

$$q_{l50} = 0.36 \text{ m}^3/\text{h} (\pm 0.0081)$$
$$q_{l8} = 0.09 \text{ m}^3/\text{h} (\pm 0.0021)$$

Pressure loss

High pressure losses of the exhaust air duct reduce the achievable exhaust air volume flow and also increase the power consumption of the kitchen exhaust system. High-quality exhaust systems under typical conditions ensure good capture of kitchen fumes already with exhaust air volume flows of $< 300 \text{ m}^3/\text{h}$. The exhaust air duct should therefore have only moderate pressure losses.

Recommendation: The pressure loss of the exterior wall outlet should not exceed **100 Pa** at an exhaust air volume flow of $300 \text{ m}^3/\text{h}$.

Pressure loss

$$\Delta p_{exh300} = 82 \text{ Pa}$$

Thermal bridge coefficient

The punctual thermal bridge coefficient was determined for a reinforced concrete wall with a 25 cm thermal insulation system, suitable for cool moderate climate:

Thermal bridge coefficient

$$\chi = 0.02 \text{ W/K}$$

Standby

In case of electronically controlled dampers, the power consumption should not exceed a limit value of 1 W when closed.

The exterior wall air outlet tested here is controlled electronically. The standby consumption amounts 0.70 W .

List of references

- [AWLD_2019] Requirements and test methods for energetic evaluation of exterior wall air outlets for the use in passive houses – draft, Passive House Institute, 2019
- [Guideline] Kitchen exhaust systems for residential kitchens in passive houses: Guideline, Passive House Institute, April 2019