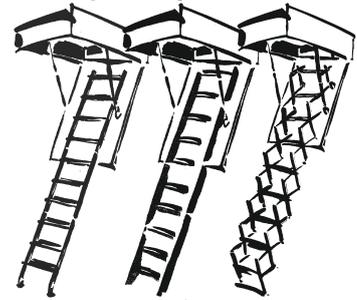


# Wellhöfer attic stairs with thermal protection WS. **4-ways tested for safety.**

Always the right attic stairs!

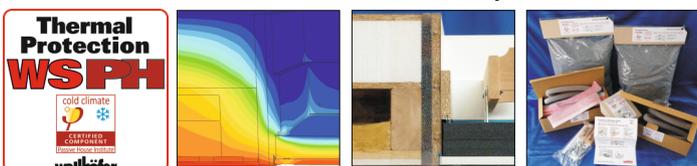


# Thermal Protection **WS 4D** Double insulation Sealing Connection system **wellhöfer**



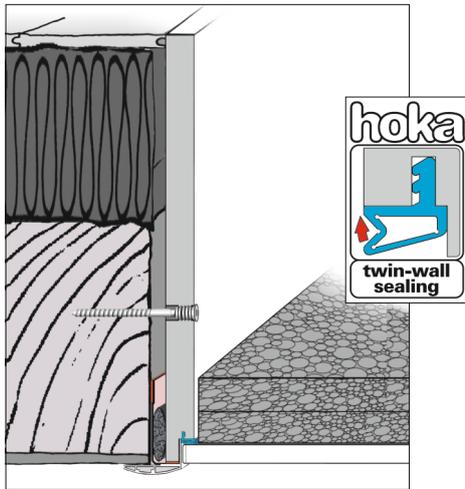
- 1 Insulation: Be aware of unclear calculations! A test **certificate with component-tested u-value** provides certainty.
- 2 Air-tightness class 4: **Tested air-tightness, as with windows**, provides you with certainty with the blower door test.
- 3 Air-tightness a-value: Wellhöfer thermal protection WS is tested **10x better than required for connecting joints**.
- 4 Climate class: **Tested stability under changing temperature/humidity conditions** as with doors.

**Our best solution for energy conservation: Attic stairs with thermal protection WSPH.**  
Passive house certified and already within the requirements of 2020.



**wellhöfer**  
TREPPEN AUS WÜRZBURG

# Tested Wellhöfer thermal protection WS for attic stairs: Insulation + sealing + ceiling connection + climate class

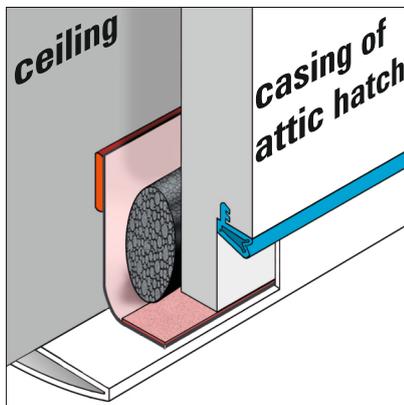


## Insulation and sealing.

The attic stairs cut in on the ceiling on about 1 sqm. Only the Wellhöfer thermal protection WS offers full surface covering insulation and the efficient hoka twin-wall sealing. There are no hidden weak points.  
**Thermal protection WS - Visibly effective!**

## Air-tight ceiling connection.

Insulation and sealing are of little use if the air streams through the installation gap. It is 4 metres long. Up to 70% of the insulation effect is lost here: Loss of energy, risk of mould, structural damage!  
The tested connection system ensures an airtight installation, and is always included with the Wellhöfer thermal protection WS.  
**Component tested connection system - Seals the gap!**



## Climate-stability.

The attic stairs are the weak point in the ceiling between the damp, warm air from the living space below and the cold air in the attic. For this kind of climate conditions, tests are available which assess the quality of doors. Wellhöfer attic stairs with thermal protection WS exceed the requirements for home entrance/basement entrance doors.  
**The new class of attic stairs: Climate-tested.**

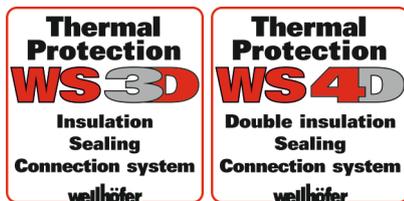
## Tested for safety.

Always check for **certificates from independent institutes**. Wellhöfer thermal protection WS stands for:



- **WS3D: Insulation value  $U=1.1$  W/(m<sup>2</sup>K)**  
tested, DIN EN ISO 12567-1:2001-02, IBP Fraunhofer Stuttgart
- **WS4D: Insulation value  $U=0.58$  W/(m<sup>2</sup>K)**  
tested, DIN EN ISO 12567-1:2010-12, IBP Fraunhofer Stuttgart
- **Air-tightness attic stairs and connection system:**  
**Class 4** tested, in acc. DIN EN 12207, PfB Prüfzentrum für Bauelemente  
 **$a=0.01$  m<sup>3</sup>/hm(daPa<sup>2/3</sup>)** tested, DIN EN 1026:2016-09, PfB Prüfz. für Bauelemente
- **Climate-stability Class 3** climate category c/d  
tested, in acc. DIN EN 12219:2000-06, PfB Prüfzentrum für Bauelemente

**Component-tested safety in terms of the EnEV** (German Energy Saving Act), **blower door test and climate conditions.**



### Ecological Building Systems

For full technical support for your project, please contact Ecological Building Systems at [info@EcologicalBuildingSystems.com](mailto:info@EcologicalBuildingSystems.com) or visit [www.EcologicalBuildingSystems.com](http://www.EcologicalBuildingSystems.com)

Ireland: 046 9432104  
Fax: 046 9432435

UK: 01228 711 511  
Fax: 01228 712 280



### Always the fitting size:

Is the ceiling opening more than 2 cm longer/wider than a standard size, then a custom-made solution is a must!

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