

Testing the Air Permeability of Window and Door Joints

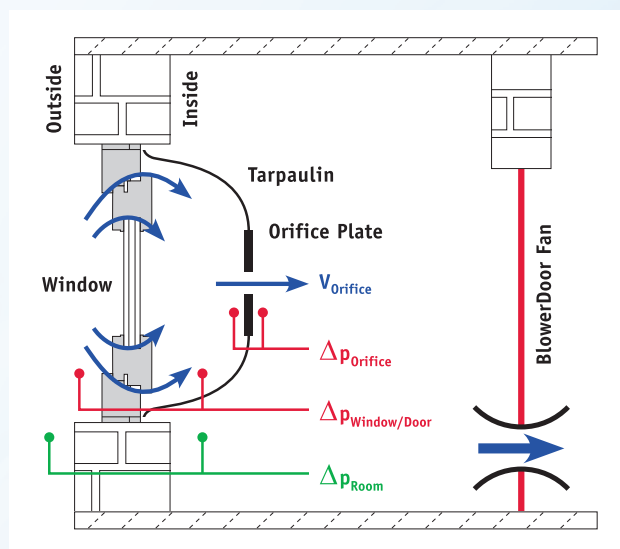
Window and Door Measurement System

The airtightness of outside windows and doors is an important criterion for achieving an airtight building envelope. The Window and Door Measurement System developed by BlowerDoor GmbH allows you to determine the joint permeability of building components in a simple and accurate way. On the basis of the measurement results windows and doors can be classified in accordance with EN 12207:2016 (windows and doors, air permeability – classification).

The measuring principle

A tarpaulin with an orifice plate is fixed to the window to be analysed. With the Minneapolis BlowerDoor installed in the room or apartment, a pressure difference is created in the hollow space between the window or door and the tarpaulin. The tarpaulin slowly bulges inward. As soon as the hollow space is filled with air, the measurement can be started (see the illustration on the right).

The air flow entering through the window joints is measured by means of an orifice plate with a defined diameter, and the pressure difference on both sides of it ($\Delta p_{\text{Orifice}}$). In order to evaluate the permeability of the joints, the corresponding pressure difference on both sides of the window is also measured ($\Delta p_{\text{Window/Door}}$). The results of the measurement can then be compared to the classifications of the EN 12207:2016.



Principle for the determination of the joint permeability of windows

The measuring technology

With the Window and Door Measurement System, you can even determine the permeability of window joints following the EN 12207:2016 at the construction site. Included in the scope of delivery are, among other items, the specially manufactured orifice plates with predefined various diameters (accuracy $\pm 10\%$), as well as the software for the measurements and a detailed reference guide. The Window and Door Measurement System requires the laptop-controlled use of the Minneapolis BlowerDoor.

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Package contents

Robust transport case with 4 specially manufactured orifice plates of various sizes, measuring software TECLOG 4 (system requirements: Windows 7 and higher, Excel 2007 and higher) with detailed reference guide as well as 5 tarpaulins, scissors and cutter, 5 rolls of PVC adhesive tape, 3 tubes with T-pieces, 4 capillary tubes