

Function and Serviceability of Components

Air passage
Water tightness against driving rain
Resistance to wind load

Test facility

The test facility to check impermeability of the Fraunhofer Institute for Building Physics allows for a realistic and reliable testing of building elements of a great variety of types and sizes. Tests according to effective standards and guidelines are possible as well as specific investigations under different climatic loads and defined test cycles for technical approval, further development and analysis of damage.

Tests as mentioned in the following can be conducted with a great variety of components, e.g. windows, doors, gates, façades, roof or wall elements (even conservatories, glazing elements with integrated sun blinds), foils, and adhesive tapes.

Test conditions

Dimensions of the test specimen

Height: up to 4000 mm
Width: up to 4000 mm
Thickness: layers up to 400 mm
roof up to 8 m length



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Air pressure

Measurement range: up to 5000 Pa
Type: static, alternating load (pressure-suction), pulsating

Driving rain

E. g. 2 l/min/m² at a simultaneous pressure of more than 1000 Pa

Temperatures

-20 °C up to +70 °C



Test methods

Air passage

- Windows and doors according to DIN EN 1026/DIN EN 12207
- Gates according to DIN EN 12427/DIN EN 12426
- Curtain walls according to DIN EN 12153/DIN EN 12152
- Other components according to DIN EN 12114
- Air-tight shutters according to DIN EN 12835
- Ventilation for buildings according to DIN EN 13141

Water tightness against driving rain

- Windows and doors according to DIN EN 1027/DIN EN 12208
- Gates according to DIN EN 12489/DIN EN 12425
- Curtain walls according to DIN EN 12155/DIN EN 12154
- Other components referring to DIN EN 12155/DIN EN 12154
- Driving rain under pulsating pressure according to DIN EN 12865

Resistance to wind load

- Windows and doors according to DIN EN 12211/DIN EN 1221
- Gates according to DIN EN 12444/DIN EN 12424
- Curtain walls according to DIN EN 12179/DIN EN 13166
- Other components referring to DIN EN 12179/DIN EN 13166

Performance under thermal and hygric load

Performance under freeze-thaw cycling

Leakage – locating by means of a fog machine and flow probes

Thermography for the identification of thermal bridges

Specific testing according to a defined test program



Competences

The test laboratory is acknowledged by Deutsches Institut für Bautechnik (DIBt, German Institute for Building Technology) according to LBO/BRL (BWU 010) and according to BauPG as Notified Body No. 1004 for products according to EN 14351-1 and is granted flexible accreditation by Deutsches Akkreditierungssystem Prüfwesen (DAP, German Accreditation System for Testing) under no. DAP-PL-3743.27.