

## Test rig for joint permeability, water tightness and wind loads

Test rig for windows, French windows, sealing,  
and small facades

Type: *LWW-PROFI*

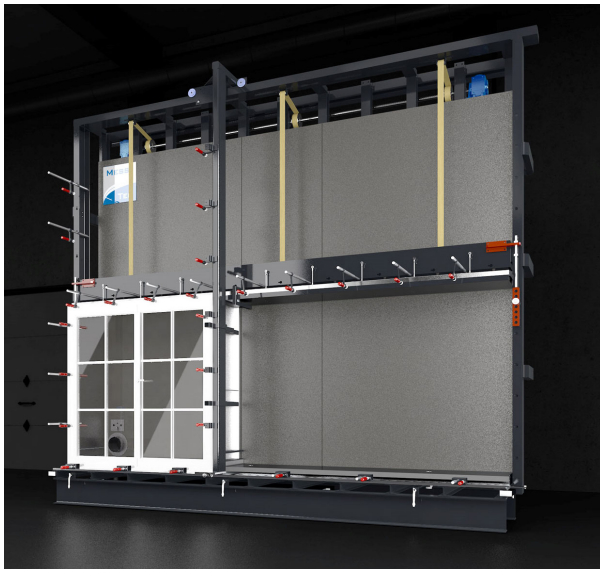


Abb. 1: LWW-ASW-Profi Test wall



Abb. 2: LWW-MSR-Profi Control unit

### 1 Description of the LWW-PROFI module

Test rig with optional features for the testing of the permeability of joints, water tightness and the resistance to wind load on windows, French windows and facades. Besides sealing, panels and other exterior wall parts can be tested due to these characteristics as well.

The measure and supply unit is equipped with an integrated air fan to create testing pressure. It measures the permeability of joints from

150 m<sup>3</sup>/h up to 800 m<sup>3</sup>/h. The RPM-regulated air fan in operation with the measure pipes is able to measure the air mass flow rate in m<sup>3</sup>/h according to the standard.

As a result standardization to the actual air pressure and temperature is not necessary.

Measuring without mechanical parts provides long term stability.

The air pressure can be regulated up to 5000 Pa. The built in differential pressure transducer can be reset to zero manually or via

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an optional feature automatically. Three sensors are implemented to determine the deformation accuracy of the profile (measurement range: 50 mm). The water pressure and flow of the spraying nozzles is adjusted by hand and recorded by a measure turbine.

All measured data are collected and visualised by a computer. The software allows automated test start and analysis of all testing procedures. The Opportunity of individual manual testing is given as well. All testing procedures are programmed individually by the examiner. The transient response of the pressure and flow rate is displayed in a graphic.

The clamping surface is available with a width from 1.5 m up to 8.0 m and a height from 3.0 m up to 5.0 m. The clamping depth is 300 mm. Spraying devices with 2 l/min and 1 l/min are installed in the clamping surface. The interior space depth is either 400 mm or 600 mm (hatch).

Test specimen with the range of a minimal size of 500 mm x 500 mm (including the surrounding panels) can be installed to the maximum size of the surface. The clamping takes place with an electric driven horizontal bar, a variable moving side element with a fast tension system.

All parts encountering water are made of stainless steel. To ensure an enduring use of the rear wall, water proofed plates made of a special material are used. The sealing are designed in EPDM-quality for frequent and long-term use. The built in siphon closes in case of high pressures by a valve.

An optional available feature is for testing of security devices. It initiates a required drag

force via steel cable and mounting hook and measures the force with an implemented device

Another optional feature is the fog machine which checks the accurate clamping operation of the specimen and also reveals leakages.

We also offer further customized devices especially for your needs after consulting.

### 2 LWW-PROFI joint permeability/water tightness/wind loads test according to following standards

Test characters	Testing standards
<i>Window test</i>	
Air permeability	EN 1026
Water tightness	EN 1027
Resistance to wind load	EN 12211
<i>French window test</i>	
Windows and exterior doors standards	EN 14351-1
<i>Facade/Curtain wall test</i>	
Air permeability	DIN EN 12153
Water tightness (laboratory test under static pressure)	DIN EN 12155
Resistance to wind load	DIN EN 12179

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### 3 Technical data

- Max. air flow rate: 800 m<sup>3</sup>/h
- Max. test pressure: ± 5000 Pa
- 2 x 50 l/min water flow rate
- Spray nozzles: 1 l/min und 2 l/min
- Three deformation transducers: 0...50 mm
- Integrated PC and TFT-display
- Required supply:
  - Safety socket: CEE 32 A, 230/400 V (without RCD)
  - Compressed air: 1", 6 bar
  - Water inlet: 3/4", 3.5 bar
  - Water outlet: DN 50 mm

### 4 Scope of delivery

#### Basic version:

- Supply unit: MSR ECO 2500 – 150/350 (air flow rate: 150 m<sup>3</sup>/h | 450 m<sup>3</sup>/h) control and measuring unit incl. PC with software and TFT display installed in a movable high desk
- WPK test wall ASW-PROFI 3030-4 clamping square: 3000 x 3000 x 400 mm (WxHxD) incl. incl. gripping jaws, clamping elements, distance and raster elements, electric operated lifting device for traverse beams, air and water piping for the supply device as well as a divisible spray bar with nozzles

### 5 Optional features / modifications

The following options can be offered on enquiry:

- Variant of supply unit:
  - MSR PROFI 5000 – 800/3000 (air mass flow rate: 800 m<sup>3</sup>/h | 5000 m<sup>3</sup>/h)
  - MSR PROFI 5000 – 800/3000-U (air mass flow rate: 800 m<sup>3</sup>/h | 5000 m<sup>3</sup>/h)
- WPK test wall variants:
  - Type: ASW-PROFI 4038-4 or 4038-6: clamping square: 4000 x 3800 x 400 (600) in mm (WxHxD)
  - Type: ASW-PROFI 5050-4 or 5050-6: clamping square: 5000 x 5000 x 400 (600) in mm (WxHxD)
  - Type: ASW-PROFI 8038-4 or 8038-6: clamping square: 8000 x 3800 x 400 (600) in mm (WxHxD)
  - Further sizes are available on request
- Additional deformation transducer (with 5 m connection cable; max. 3 more additional transducer possible)
- Displacement transducer fixing carriage (for vertical and horizontal fixing, if necessary, of displacement transducer)
- Extended pressure measuring range max. test pressure: ± 15,000 Pa
- Water circulation/recycling system (incl. water pump, collecting container, and control unit)
- Spray tube for width of 4000 mm (incl. nozzles: 1 l/min; hose with T-fitting)

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- Wind generator for dynamic wind loads according to DIN EN 13050 standard (all required components are included)
- Calibration of window-/ facades test rig:  
(each 3 series of measurement via chamber air pressure and air flow rate of positive and negative pressure;  
each 3 series of measurement via transducer 1 to 3;  
each 3 series of measurement for water flow meter 1 and 2)
- Climate control unit -40 °C to +60 °C (applicable into the test chamber)
- Fogging device with external manual control and piping
- Access hatch: 500 x 800 in mm (only available for test walls with 600 mm depth)
- Ceilings simulation
- Multifunction meter device for environmental conditions (air pressure/humidity/temperature)
- Remote control by **ift**

Individual features, especially for your needs, can be provided after consulting.

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