

## Why perform tests?

The functional variety of windows, doors and façades can now be observed in the wide range of requirements imposed on these components. They must therefore comply to national and international standards, guidelines and specifications in accordance with their intended use.

The new European product standards for façades and windows in particular set benchmarks in this area. The technical properties of the products are tested in accordance with criteria that are uniform across the whole of Europe. The CE marking then provides the opportunity for transnational marketing.

Nowadays, it is no longer possible to sell complex products such as façades and windows on the market without the corresponding test certificates and permits. System tests have simplified the procedures in the standard sector, with the exception of special designs, project solutions or general requirements in the specifications which differ from the standard. In these cases, individual tests are required.

## Why perform testing at WICONA?

**The testing facilities at the new WICONA Test Centre offer you the following advantages:**

**Advantage 1: We understand your needs**

Modern window and façade construction requires a multitude of individual certificates and tests. As a competent partner with extensive experience in the testing of standard products and project solutions, we are able to support you with this knowledge and expertise that we have built up over many years.

**Advantage 2: We provide you with immediate assistance**

At the WICONA Technology Centre, which has a pilot workshop and lies directly adjacent to the Test Centre, we can advise you prior to testing, can help you to assemble test samples that you

have manufactured yourself or can check these prior to installing them in the test rig. We carry out any necessary corrective measures with you onsite in a flexible manner and with minimal outlay in terms of time and cost.

**Advantage 3: We are flexible**

Test samples taken "directly from serial production" can be tested, as the dimensions of our modular test rigs can be flexibly adapted.

**Advantage 4: We deliver quickly and on time**

You can see this already from our lead times. "In-house" façade tests allow us to provide year-round coverage and testing irrespective of the weather. Our strong adherence to deadlines offers you a greater level of security when it comes to project development planning.

**Advantage 5: Collaboration with the ift Rosenheim**

The testing equipment was developed and adapted in collaboration with the Institute for Window Technology, ift Rosenheim. The equipment used at the WICONA Test Centre enables tests to be carried out in accordance with national, European and international standards and guidelines. On this basis, the WICONA Test Centre is able to provide individually tailored testing programs for tests in the project business or special designs. In the event that test certificates issued by an accredited/notified test institute are required, these can be provided by the WICONA Test Centre, in cooperation with the ift Rosenheim.



Sapa Building Systems GmbH  
Einsteinstr. 61  
D-89077 Ulm  
Germany

2487/01005920

**WICONA**<sup>®</sup>  
TECHNOLOGY FOR IDEAS

WICONA Test Centre

**WICONA**<sup>®</sup>  
TECHNOLOGY FOR IDEAS

WICONA Test Centre

**Market success  
with tested quality**



## What can be tested at WICONA?



Façade test rigs

Close cooperation with the Institute for Window Technology, ift Rosenheim, forms the backing of the WICONA Test Centre.

Test procedures and testing equipment were developed and adapted in collaboration with the Institute.

The Test Centre provides:

- Two large scale test rigs for façades
- One test rig for windows
- One test rig for fittings
- A tension/compression testing machine
- A hot box for measuring heat transfer

The façade test rigs make it possible to perform tests on samples with maximum dimensions of 10 m x 10 m. Customers are able to freely select the dimensions of their test specimens within these limits.

As far as the width is concerned, it is advantageous if grid dimensions can be taken into consideration.

The test rigs simulate the situation within a building.

The façade is fitted into the device using façade anchors and the junction to structure provided by the customer is fitted around the façade.

The following tests can be carried out at the façade test rigs:

- Air permeability in accordance with EN 12153
- Static water tightness in accordance with EN 12155
- Dynamic water tightness in accordance with EN 13050
- Wind load resistance in accordance with EN 12179
- Impact resistance in accordance with EN 14019
- Accident-proof vertical glazing in accordance with TRAV (German regulation)



Window test rig

The rig is designed for windows, doors, fixed panels and combinations.

The maximum dimensions of the units including test frame are 3,6 m x 2,9 m.

The following tests can be carried out at this bay:

- Air permeability in accordance with EN 1026
- Water tightness against driving rain in accordance with EN 1027
- Wind load resistance in accordance with EN 12211
- Loading with soft and heavy body impact in accordance with EN 13049

Fitting test rig

Dynamic tests on fittings and elements are carried out on doors and windows up to a height of 4 m. For example, continuous operational testing in accordance with EN 1191 and testing of fittings for windows and French doors, requirements and test procedures for turn/tilt and turn and tilt fittings in accordance with EN 13126-8 can be carried out. Sash widths of up to 1550 mm can be tested.



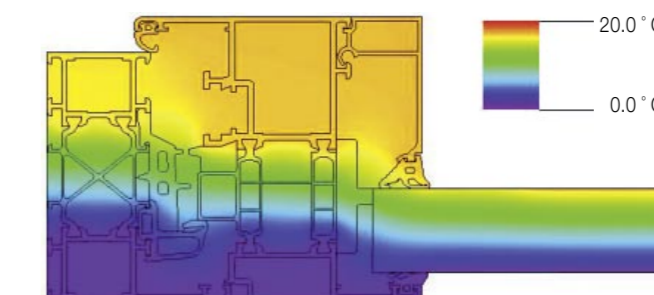
Tension/compression testing machine

Static tests using tensile and compression loads are carried out on the tension/compression testing machine. These are also carried out in alternance. The component strength (in accordance with EN 14024), material strengths and screw pullout values are tested, amongst others.



Hot box

- Determines heat transfer coefficients for framework profiles (U) in accordance with EN 12412-2
- Gauges new insulating materials
- Verifies material properties
- Validates computer programs



Sustainability

In addition to the special functionalities of the WICONA Test Centre, Sapa Building Systems is demonstrating how their model of sustainability can be implemented on one of their own buildings.

The aim was to run energy self-sufficient premises. By adopting a holistic approach to planning, the ideal combination of façade, building technology and use of natural resources was determined. Large window areas in the façade and the roof allow work to be carried out to a large degree without the use of artificial light.

At the same time, cooling can be dispensed with entirely. The considerable amount of water that is required to perform façade tests is reduced to an environmentally friendly minimum by means of a closed water circuit comprising cisterns and multistage filters.

For heating and artificial light, 23 kWh/m<sup>2</sup>a of useable energy is required, a value which is close to the threshold value for passive residential buildings.

This energy requirement is met by means of a photovoltaic system on the roof of the building. Moreover, a surplus of 30,000 kWh/a is produced which covers the energy required to run the Test Centre.

This makes the WICONA Test Centre one of the first zero-emissions production facilities.

