

WINCON - Quality Assurance Device

WINCON is a ventilator inspection device, with which the airtightness of the buildings air barrier system can be inspected.

The device pulls air from the interior of the building to the exterior and thereby creates a temporary vacuum in the building.

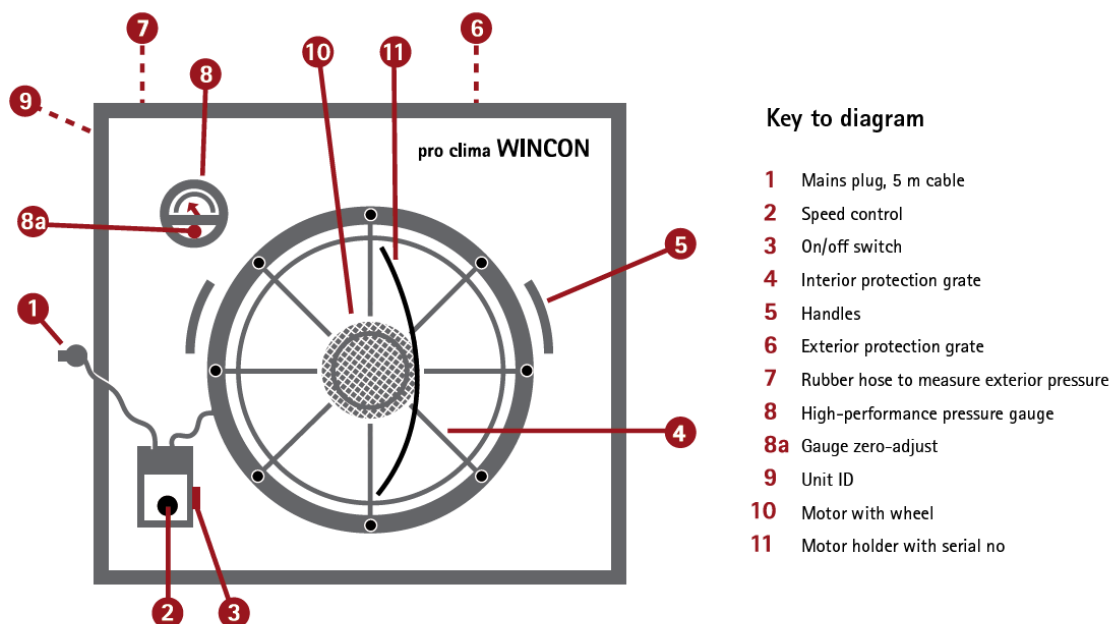
If there are leaks in the buildings air barrier system, air streams from the outside to the interior of the building, and these air currents can be detected with the bare hand or using smoke puffers. (See accessories).

The leaks that have been detected can then be remedied and rechecked.

Capacity

The WINCON inspection device has a flow rate of 11,000 m³ of air per hour, with a pressure difference of 50 Pa an air capacity of 9,600 m³/h.

With this kind of capacity, it is also possible to inspect the air-tightness of larger buildings and larger leaks.



Difference between inspection and survey

The AS/NZS ISO 9972 standard defines the BLOWER DOOR procedure for testing air-tightness.

With the BLOWER DOOR procedure, a measurement is taken to ascertain the Q_{50} -value, i.e., the rate of air leakage at a pressure difference of 50 Pa.

This measurement is only meaningful when the buildings air barrier system is complete. A rectification of defects is often more difficult by then.

The BLOWER DOOR is an expert surveying device that documents the quality of the entire house with regard to air-tightness. This includes the air-tightness of windows, doors, basement windows, extractor-hoods, chimneys, etc.

The WINCON inspection device does not enable expert evaluation; it is available from Pro Clima as a tool for the quality assurance of the air barrier system and final inspection of the air barrier system.

The WINCON inspection device does not enable the user to act as an expert surveyor and to reveal defects in other building subsections; this should remain the task of a legally and technically trained surveyor.

If you require a BLOWER DOOR test, please see the list of Blower Door operators on our proclima.co.nz website.

Utilising the WINCON quality assurance process documents; the air barrier system has been executed to the best possible standard. Once the building is complete, a BLOWER DOOR measurement can be taken without apprehension.

Documentation and use

The WINCON inspection report can attest to the sound and error-free construction of the air barrier system. If the construction contract issuer (usually the owner), is present at the inspection and confirms the acceptance, you have a formal acceptance instead of the usual implicit acceptance. The site manager can only legally confirm a formal acceptance, if they have a mandate for this from the contract issuer.

By thoroughly inspecting your work (even without client sign-off) your organization can prove due diligence and benchmark this aspect of the programme in terms of completion date, thereby protecting your organisation from responsibility for defects caused by other trades. Please retain the inspection report accordingly.

The WINCON advantages

- The completion of your work is documented, significantly heightening awareness around the airtightness aspect of the project for all stakeholders. Subsequent damage to the air-sealing layer, e.g., by other construction workers, is outside your responsibility. If you are requested to correct these leaks, you can charge the work to the client, or responsible contractor.
 - The customer, site manager and other trades are made aware of the air barrier system being used and your responsibility for sound and error free contract work is documented.
- Your employees gain experience through the quality assurance process by detecting weak spots and errors in the execution of the air barrier system thereby avoiding them next time
- Your employees identify more with their work and are more aware of the quality of their installation.

During consultation or when you submit your quote, you could suggest that a WINCON air-tightness inspection should take place at pre-lining.

This is an effective protection against claims of poor workmanship.

Accessories, tools

- WINCON adhesive tape
- pro clima Smoke Bottles
- WINCON BOX –transport Box

Safety regulations and functional inspection

- During operation, do not touch the protection grate and no objects can pass through or into the fan protection grate.
- Do not open any electrical equipment or input leads unless there is a fault with the unit and you are a suitably certified electrician.
- Keep out of reach of children.
- Protect the WINCON device from wet and rain.
The motor, the cables and the electrical equipment conform to IP 54 standard (protected from moisture and dripping water, not from hose water). If you need to clean the fan, use wet wipes only.
- Protect the rubber hose at the pressure gauge from water.
Never blow into it, as the excessive moisture of the breath can damage the interior of the high-performance pressure gauge.

If the electrical functions of the device are not working, first check that the power supply is in order.

Check that the switch at the speed control has been turned on.

If there are still no electrical functions, please pull the power plug and get an electrician to check the fuses in the speed control.

A reserve fuse is attached to the cover. If there are still no electrical functions, get an electrician to check the device and/or contact pro clima.

Preparation of the inspection

To perform the air-tightness inspection, place the WINCON vertically in a door or window opening, with the controls facing inwards, and fasten it to the frame using a screw clamp or screw through the pre drilled holes.

Please ensure that the window frame is not damaged in the process.

Seal the remaining open sides of the window with cardboard / ridged sheathing or a plastic sheet.

Here you should apply **WINCON adhesive tape**

(Never any other pro clima adhesive tape).

WINCON adhesive tape can be easily removed from the surface even after a few hours.

Now close all of the doors and window of the building; interior doors should be opened.

If the house door has not yet been installed or if a window is missing, they can be provisionally closed.

Thorough sealing is not required. Only enough is needed for WINCON to create a vacuum of 50 Pa.

Check and zero the pressure gauge as required using the adjust screw.

Turn the speed control fully to the lowest level.

Insert the power plug and turn the motor on using the switch next to the speed control.

Turn the speed control to the left until a pressure difference of approx.

50 Pa has been reached. The pressure can be read from the pressure gauge.

! PLEASE NOTE !

Exterior windows and doors should remained closed during the inspection.

Interior doors should be safely wedged open to prevent accidental closure.

If a window (e.g. a previously open one) or door (even an interior door) is unexpectedly closed during the inspection, the leaking air is reduced significantly.

This could result in a sudden increase in suction in part of the building, which could damage the air barrier system of the building or the WINCON device.

If the device is improperly managed, pressure spikes/ or fan speed/pressure settings of over 70Pa can damage the air barrier system by popping membranes at fixings or de bonding at junctions.

Pro Clima will not be held responsible for any such damage.



The inspection

Now the inspection can begin.

It is easiest to feel leaks with the hand, especially with the back of the hand or visual inspection using the smoke bottle.

Systematically check anywhere that flat surfaces, gaps, and connections to adjacent structural components have been taped or sealed.

Suggest starting from the fan then walking left/right along the envelope checking.

Narrow joints and small leaks are easy to find, as a jet effect occurs here, producing fast air currents. Bigger leaks produce slower air currents, but the hole is more clearly visible.

Seal the leaks in the air barrier system, using the pro clima adhesive tapes / adhesives.

If this is not possible, mark the position of the leak and repair it later.

This document attests that quality assurance has been carried out by our quality control department. It is not documentation that a final air tightness test has been carried out by a qualified professional according to AS/NZS ISO 9972. It is not meant to serve as documentation for compliance with any regulation or standard.

WINCON inspection report document

WINCON, device no.(located on unit):

Quality assurance (QA) completed by (print name):

.....

Of (trading as).....

I/We confirm the dedicated air barrier system has been inspected by our quality control department. The product is delivered in a sound and acceptable state.

Name|Signature:.....

Date of Use:

Project / Address

.....
.....

Re check Date:..... Area:..... Comment.....

Re check Date:..... Area:..... Comment.....

Re check Date:..... Area:..... Comment.....

You may like to retain a copy of this document for your records, and provide a copy to the specifier or your client.