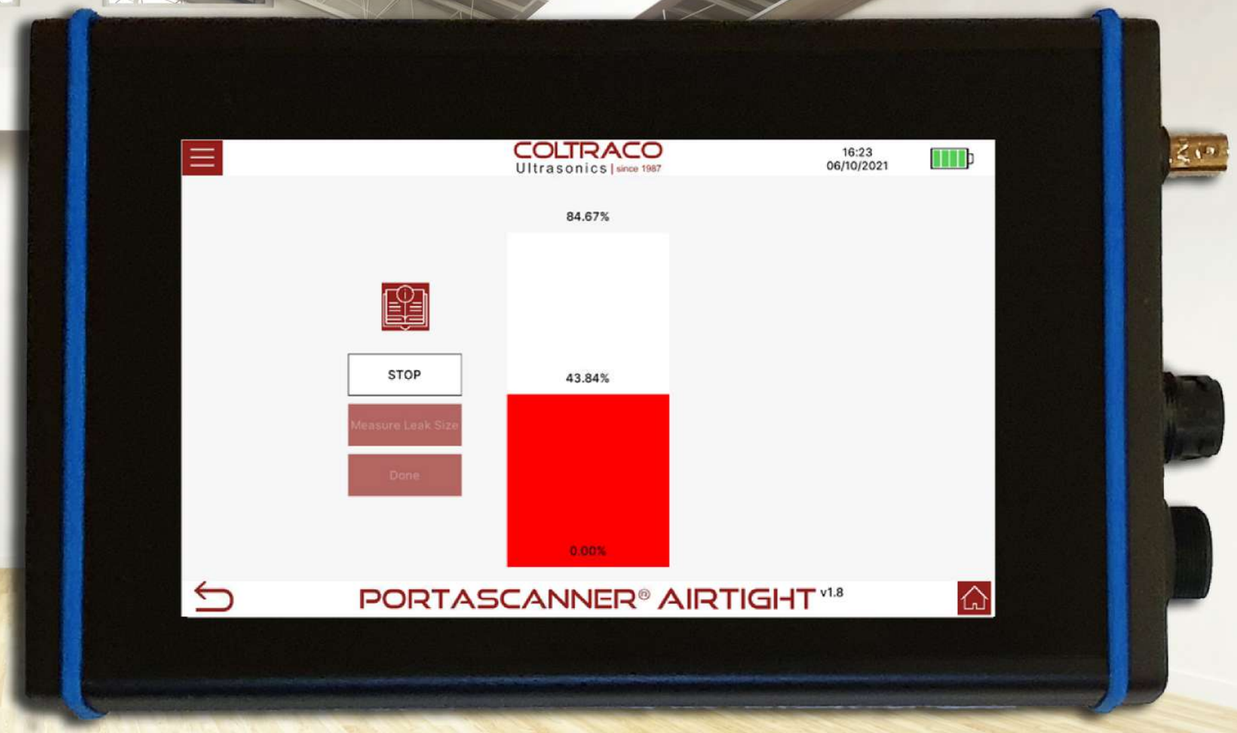
COLTRACO
Ultrasonics | since 1987

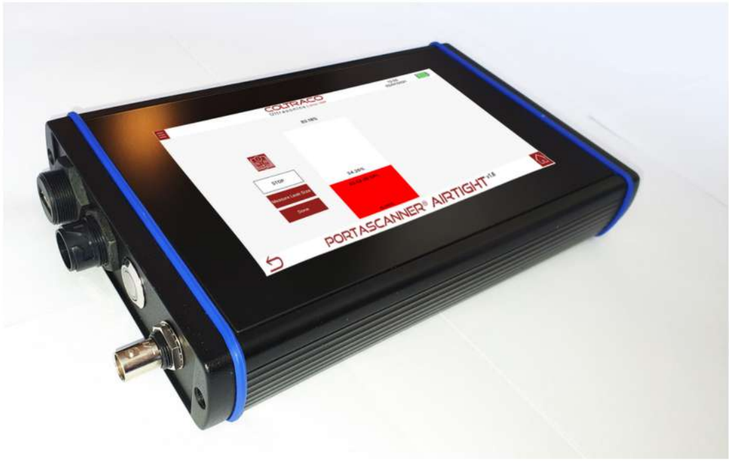


INTRODUCING PORTASCANNER® AIRTIGHT

Ultrasonic Airtightness, Leak Detection and Quantification System

INTRODUCING THE PORTASCANNER® AIRTIGHT

What is it?: The **Portascanner® AIRTIGHT** identifies, measures, and quantifies leak sites with a microscopic level of accuracy, whilst being easy to use. It generates a value for the air flow rate through each leak as well as calculating the overall air permeability in a space such as: cabinets, compartments, rooms, or buildings.



What is it for?: For ensuring airtightness of spaces whilst locating and quantifying airleaks. The **Portascanner® AIRTIGHT** can quantify leaks as small as 0.5mm in diameter and detect and locate leaks as small as 0.06mm in diameter

Who needs it?: Anyone working in:

- Construction/the built environment
- Component (e.g door/window) manufacturing
- HVAC areas
- Laboratories
- Isolation areas
- Quarantine areas
- Cruise lines
- Corridors e.g. shipping, offshore
- Escape pods within mining

PORTASCANNER® AIRTIGHT

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Ventilation is intended, air leakage is not.

Controlled ventilation creates healthy buildings eliminating condensation, mould, rot, damp, and structural damage.

Occupant health is enhanced by an assured and continuous supply of pure fresh air, thermal comfort, acoustic insulation, and moisture control.

Energy efficiency is achieved by ensuring buildings are airtight, thereby reducing energy consumption and costs.

Room integrity depends on airtightness to prevent spread of fire and smoke, as well as pathogens and infestation.

BUILT ENVIRONMENT

THREE CRITICAL ASPECTS OF THE BUILT ENVIRONMENT

Planetary Health: Reducing CO2 emissions, both operational and embodied.

Human Health: Access to pathogen-free, pure, fresh air; thermal comfort; and acoustic insulation.

Building Health: Eliminating mould, rot, infestation, condensation, and ensuring watertightness, fire prevention, and suppression.

The **Portascanner® AIRTIGHT** is a world-first instrument that will:

- **Identify** leak sites with a microscopic level of accuracy.
- **Measure** and quantify them using sophisticated algorithms.
- **Generate** a value for the air flow rate through each leak.
- **Calculate** the building or room's overall air permeability.
- **Store** photographic and quantitative data to generate traceable, exportable reports.

WATCH
HOW TO LOCATE AND QUANTIFY A LEAK

MANY PASSIVE HOUSE DESIGN PRINCIPLES ARE INVISIBLE AND THEY ARE DESIGNED INTO THE FABRIC OF THE BUILDING ITSELF, SUCH AS A HIGH LEVEL OF AIRTIGHTNESS. WITH THIS IN MIND WE HAVE DEVELOPED PORTASCANNER® AIRTIGHT, THE WORLD'S FIRST MICRO AIR-LEAK DETECTOR, WHICH USES ULTRASOUND ONLY.

ENERGY EFFICIENCY – PASSIVE HOUSE

Energy efficient mechanical ventilation and effective air filtration must start with an airtight building and controlled airflow within it.

Portascanner® AIRTIGHT calculates the Air Changes Per Hour (ACH) of a room or building from all leaks that have been detected and quantified.

Frequent and regular detection, location, and quantification of unwanted air leaks, integrated alongside existing airtightness testing equipment ensures the success of building ventilation strategies. Testing with Portascanner® AIRTIGHT is non-invasive and non-disruptive: people can remain in the room.

Coltraco Ultrasonics have been accepted into the Net Zero Heat Cohort, by the UK Research and Innovation and we will work with the cohort to understand the barriers to their growth and scaling and provide support in overcoming them. The resulting peer network will be able to open doors for companies that they couldn't on their own.

Air flow rates can now be accurately checked at every stage of the execution of a build programme, from the testing of all precision-made components, such as doors and windows in a factory, to the assembly and construction of a building on site.

Frequent and periodic testing for airtightness and room integrity in a non-pressurised environment assures a pass when pressurisation tests for airtightness are conducted.

Save cost in passing the air pressure test, be it the Door Fan Blower Test or the Pulse Test, first time and every time.

In a retrofit programme, or where a pressure test has been failed, the instrument will rapidly locate and measure the leaks and quantify the air flow rate through each leak site, so that an overall air permeability value can be recorded.

CASE STUDY - BUILT ENVIRONMENT

Successfully tested and trialled at the Air Tightness Testing & Measurement Association (ATTMA), the **Portascanner® AIRTIGHT**:

- Complemented the Pulse Test and Door Fan Blower Test
- Identified a number of leaks in windows, roof panels, and door seals, which had not previously been found using traditional methods.

Successful trial of the **Portascanner® AIRTIGHT** at a Passivhaus in Manchester, UK:

- Substantial air leakage was identified at the bottom of the door, indicating a “crack” in the bottom seal.
- This was confirmed by the site manager who determined that the door had not had a final adjustment

The **Portascanner® AIRTIGHT**, testing a Low Energy Building in Slovenia for airtightness:

- As it is portable and handheld, it was easy and efficient to test the building, locating and quantifying leak sites.
- It identified small leaks in the window seal with the quick test function that were soon sealed.

HOSPITAL AND HEALTHCARE: INFECTION CONTROL

Portascanner® AIRTIGHT allows healthcare and pharmaceutical personnel to locate, and then quantify, the leaks in hospital wards, cleanrooms, and sterilisation departments.

Room pressurisation is crucial **in containing or reducing the contamination** of pharmaceutical drugs and highly-infectious diseases such as Ebola and Covid-19

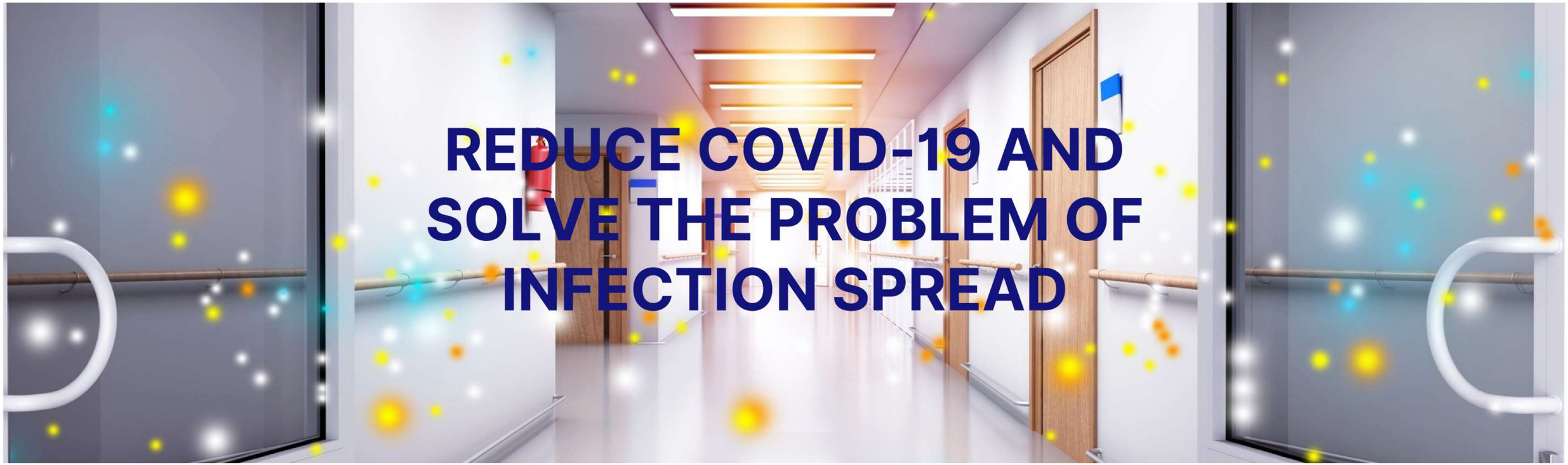
Quantifying the extent of leaks, or the air permeability rate, in this way is crucial to ensuring positive/negative pressurisation in order to help prevent the spread of disease.

CLICK HERE TO READ THE ARTICLE ON PREVENTING THE SPREAD OF COVID-19 IN NHS FACILITIES WITH UK INNOVATION

INFECTION CONTROL – COVID 19 AND BEYOND

- A 2018 case study showed that existing protocol for Infection Prevention and Control was found to be '**disappointing**', with only '44% of units involving IPC in training on a regular basis.'
- A December 2020 study on COVID-19 indicates that 56% of air samples taken from hospital hallways and 24% from hospital bathrooms have high levels of coronavirus.

- Air samples from ICU rooms were more than twice as likely to be positive for genetic material of the virus at 25.2% compared to 10.7% for non-ICU rooms.
- Samples from hospital hallways were the most likely to come back positive at 56.3%.
- Source: JAMA Network Open. 2020;3(12):e2033232. doi:10.1001/jamanetworkopen.2020.33232 or email sales@coltraco.co.uk for access.

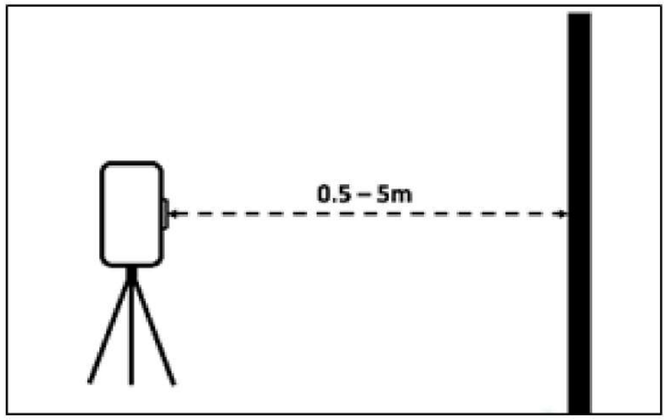


INFECTION CONTROL – COVID 19 AND BEYOND

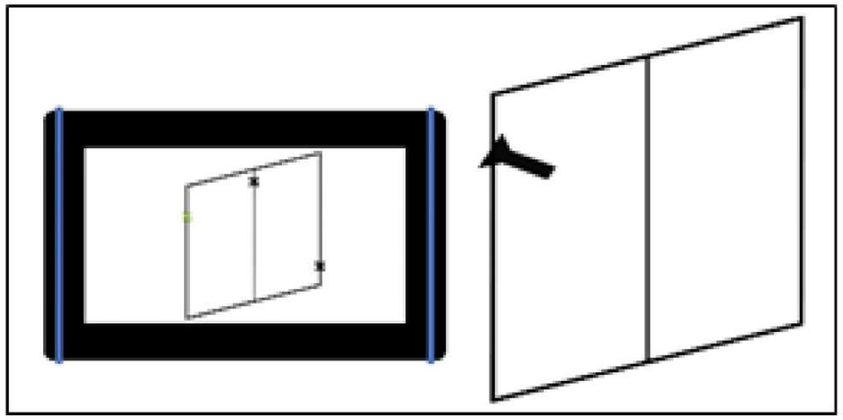
- In intensive care units (ICU), Hospitals have to ‘negatively pressurise’ each ICU ward to prevent COVID-19 infection contagion within the rest of the hospital.
- However, if the air permeability of ICU wards is not sufficiently low, negative pressurisation cannot be achieved effectively.
- Maintenance teams have limited means to monitor the airflow or identify the location and size of any specific leaks, leaving any remedial action down to mere speculation.
- So limited are these means that healthcare personnel are forced to adopt an approach that can only be described as ‘patch and hope’.

Choose our non-invasive solution now, and say goodbye to manual calculations, all in the tap of a finger.

With the Portascanner® AIRTIGHT users can calculate the airflow rate through these leaks, generating an air permeability value for an entire room/ward, which the user can compare against the required value for pressurisation.



POSITION GENERATOR BETWEEN 0.5 – 5M FROM THE STRUCTURE TO BE MEASURED.



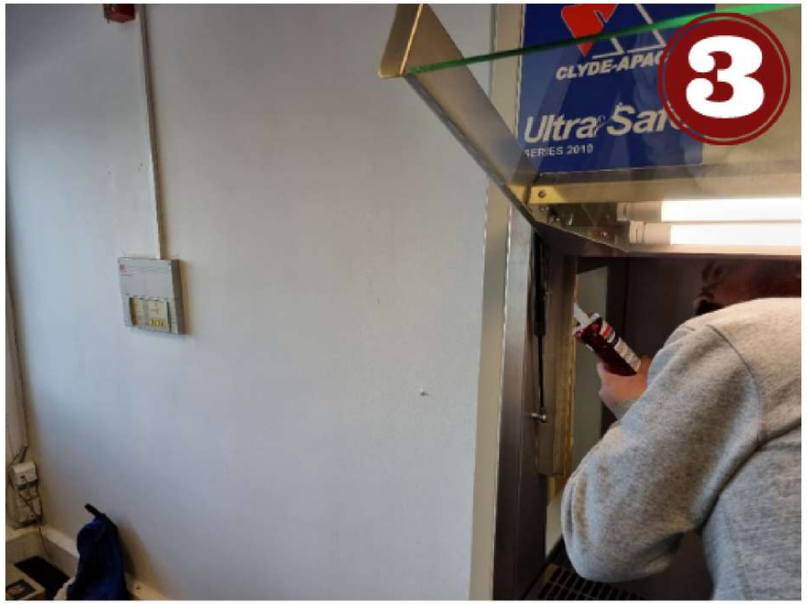
FIND LEAKS BY MOVING THE WAND AROUND THE AREA BEING TESTED. LOOK FOR SPIKES IN THE SIGNAL BAR AND MARK THEM ON THE PHOTO.

CASE STUDY - BIOLOGICAL SAFETY CABINETS

Biological Safety Cabinets are used for the containment of potentially harmful pathogens or chemicals during, for instance, blood tests, in order to prevent infection spreading through laboratories.

Portascanner® AIRTIGHT testing of the Class II Biological Safety Cabinet was very successful:

- The Portascanner® AIRTIGHT's precision generators were ideal for this application as they are small enough to fit easily inside BSCs.
- Each area of the cabinet was tested.
- Significant leakage through the side panel of the cabinet was identified.
- Leakage was sealed on both sides with silicon. Retesting the same areas immediately showed substantial improvement in the quality of the seal.



COMPARTMENTATION & ROOM INTEGRITY

Portascanner® AIRTIGHT can estimate the air permeability of a room or compartment to aid with predicting hold time.

- Compartmentation, with fire stopping in walls and floors, is used to slow the spread of fire. Room integrity testing ensures that a room is sufficiently sealed, to hold in the gaseous extinguishing agent once it has been actuated.

- Leak sites in the room could mean that the comparted area may not hold the gaseous extinguishing agent, such as CO2, FM200®, Inergen® or Nitrogen, the design concentration of which will have been specifically prescribed for the space.

- If a room has leak sites in its compartmentation and the gaseous extinguishing agent cannot be contained in the room, then the critical infrastructure/building will not be protected from fire.

- Equally, if a room does not have enough permeability to release agent, suppression system actuation could lead to damage in the structure, therefore, it is essential that the leakiness of a room is neither too great nor too small.

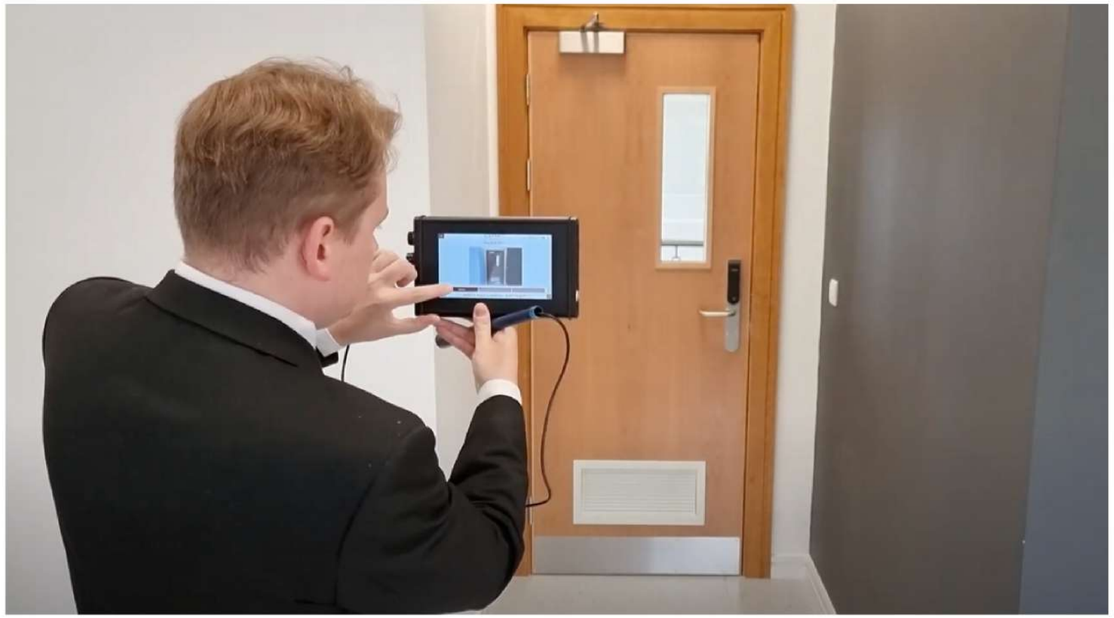
Portascanner® AIRTIGHT
Receiver & Sensor

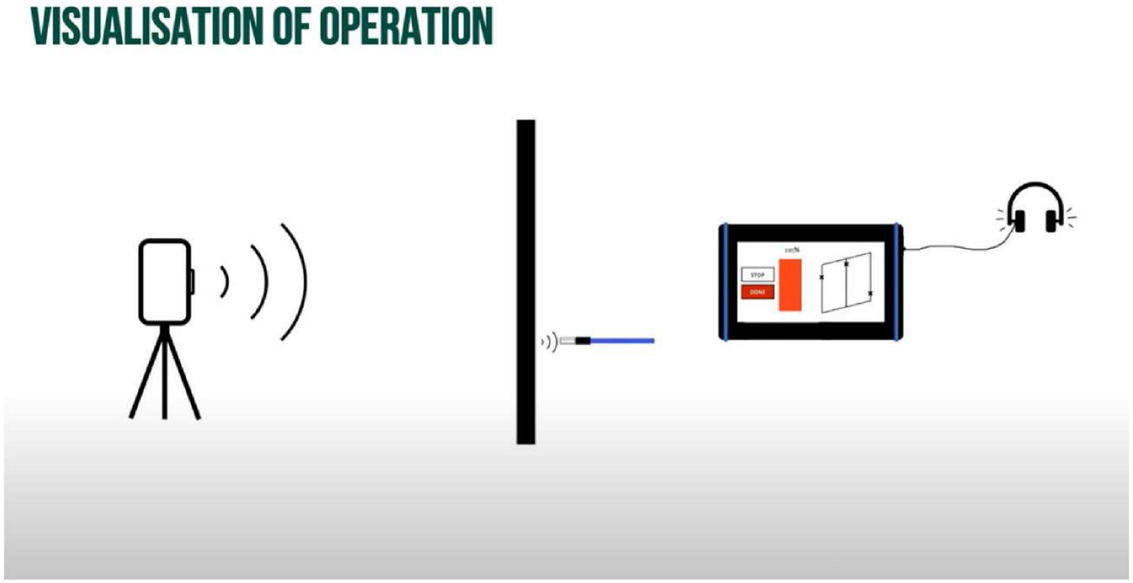
Portascanner® AIRTIGHT
Generator

INSPECT BARRIER INTEGRITY

With the **Portascanner® AIRTIGHT** locate and quantify air leaks, thereby ensuring enclosures are sealed effectively as specified in fire safety standards such as NFPA 2001.

NFPA 2001 states that *“all total flooding systems shall have the enclosure examined and tested to locate and then effectively seal any significant air leaks that could result in a failure of the enclosure to hold the specified agent concentration level for the specified holding period” and “the protected enclosure shall be inspected annually or monitored by a documented administrative program for changes in barrier integrity or enclosure dimensions”.*





Key advantages

- Locate air leaks and quantify their significance
- Ensure you will pass the Door Fan Test or the PULSE first time, reducing costs.
- Save and export an electronic record of leak data to facilitate a more systemised approach to enclosure integrity testing.

OUR CUSTOMER CARE COMMITMENT

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- South America - Brazil

With every Coltraco purchase you receive FREE Lifetime Technical Support in addition to your 3 year warranty on the main unit and 1 year on the sensor.

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