

Building Compliance
Design & Testing

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ON-SITE

Background Ventilation Testing

Information and FAQs



Background Ventilation Testing

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What is background ventilation testing?

Background ventilation testing was first introduced to the industry as part of retrofit procedures. It became essential to demonstrate that dwellings undergoing retrofit enhancements according to PAS 2035 standards maintained sufficient ventilation within their existing systems, thus potentially obviating the need for additional ventilation measures. Coined as ‘background ventilation,’ this concept refers to the ongoing ventilation processes within the building’s current configuration, quantified through air change rate measurements. Ventilation plays a critical role in retrofit projects, as modifications to the dwelling may reduce the natural air exchange rate, potentially leading to increased risks of dampness and mould. The air exchange rate, also known as ‘air changes,’ denotes the volume of air circulating within the property, replacing stale air with fresh air to mitigate moisture and pollutant accumulation within the dwelling.

What is the methodology for background ventilation testing?

The test method for background ventilation follows the guidelines set forth by the Installation Assurance Authority (IAA). This method necessitates conducting whole-house and bedroom tests. Prior to the test, the property is prepared by closing trickle vents and shutting off or closing other vents or ventilation systems without sealing them, unlike in an air pressure test. This approach provides insight into the building’s worst-case background ventilation scenario. Pulse or blower door test equipment can be used for the test, although Pulse equipment is particularly suited for testing door undercuts in bedroom assessments, where installing a blower door might be impractical.





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Background ventilation is quantified in terms of air change rate (ACH), representing the frequency with which the entire volume of the space (dwelling/room) is refreshed. An ACH rate of 1 signifies that the air inside the building is completely exchanged with outdoor air once every hour.

Any work conducted in accordance with Trustmark guidance mandates that the tester also be a member of the IAA and accredited to a competent person scheme.

ATSPACE is a proud member of IAA; please get in touch if you require any background ventilation testing. Call **0345 6465 454** or email sales@atspaceltd.com.

Frequently Asked Questions on Background Ventilation Testing for PAS2035

What is PAS 2035?

PAS 2035 is a specification for the retrofit of domestic buildings to improve energy efficiency. It provides a framework for assessing dwellings and delivering energy efficiency improvements.

What is background ventilation testing?

Background ventilation testing measures and assesses the natural air infiltration rate in a building to ensure adequate ventilation for maintaining indoor air quality without excessive heat loss.





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What are the benefits of testing background ventilation for Pathways A and B?

Conducting background ventilation testing provides evidence of the need for additional ventilation, potentially eliminating the requirement for installing trickle vents or under-door cuts

When should background ventilation testing be carried out?

Background ventilation testing should be conducted before and after retrofit works to assess the effectiveness of ventilation measures and ensure compliance with PAS 2035 standards.

I've been told I still need to install background ventilation, regardless of the evidence from background testing. Is that correct?

No, you are not required to install additional background ventilation if the testing indicates that the ventilation is adequate. TrustMark and BEIS have accepted this process for demonstrating compliance under PAS2035.

Who can test background ventilation on properties?

Trained background ventilation testers registered with The Installation Assurance Authority (IAA) can perform testing using the approved process.





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What methods are used for background ventilation testing?

Common methods include:

- **Blower Door or Pulse Testing:** Using a fan to pressurise or depressurise the building and measure air leakage.
- **Natural Ventilation Assessment:** Evaluating existing ventilation provisions and their performance under normal conditions.

How is the air infiltration rate measured?

The air infiltration rate is typically measured in air changes per hour (ACH) at a specified pressure differential, usually 50 Pascals (ACH50) if using a blower door or 4Pa if a Pulse test kit is being used.

What are acceptable levels of air infiltration for domestic buildings?

The acceptable levels of air infiltration vary depending on the building type and the retrofit measures implemented. PAS 2035 provides guidance on acceptable ranges to balance energy efficiency and indoor air quality.

What should be done if the background ventilation is found to be inadequate?

If background ventilation is inadequate, additional ventilation measures should be implemented, such as installing mechanical ventilation systems, improving existing ventilation provisions, or sealing unintended air leaks while ensuring sufficient controlled ventilation.





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What purpose does the IAA Background Ventilation scheme serve?

The scheme ensures a robust and fully auditable process is followed. It requires evidence of pre and post-works background ventilation test results, photos, and floor plan drawings to prove the presence of existing wet room ventilation and to consider factors such as mould and condensation risk. Jobs are randomly sampled for audit to ensure adherence to the process.

Who is qualified to perform background ventilation testing?

Background ventilation testing should be conducted by trained and certified professionals with expertise in building physics, ventilation systems, and the specific requirements of PAS 2035.

How does background ventilation testing contribute to overall energy efficiency?

By ensuring proper ventilation, background ventilation testing helps maintain indoor air quality while minimizing energy loss, contributing to the overall energy efficiency of the building by balancing airtightness with adequate ventilation.

What documentation is required for background ventilation testing?

Documentation should include:

- Test methods and procedures used
- Test results and analysis
- Recommendations for improvements if necessary
- Evidence of compliance with PAS 2035 standards.





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Can background ventilation testing help identify other issues in a building?

Yes, background ventilation testing can help identify issues such as unintended air leaks, areas of poor insulation, and potential sources of indoor air pollution, which can improve both energy efficiency and indoor air quality when addressed.

What role does occupant behaviour play in background ventilation?

Occupant behaviour significantly affects background ventilation. Understanding how residents use windows, doors, and ventilation systems is essential for accurately assessing and improving ventilation.

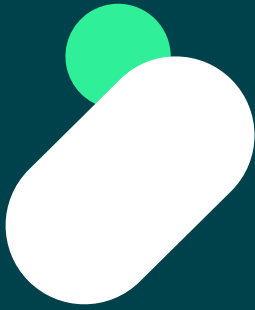
How often should background ventilation be tested in a retrofit project?

Background ventilation should be tested:

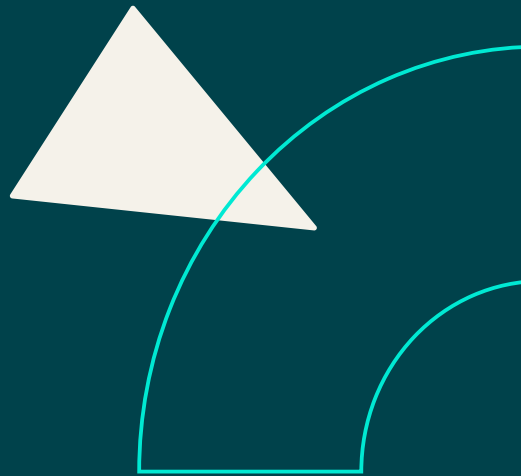
- Before starting retrofit works to establish a baseline
- After completion of retrofit works to ensure compliance
- Periodically as part of ongoing building maintenance and performance monitoring.

Where can I find more information on PAS 2035 and background ventilation testing?

For more detailed information, refer to the official PAS 2035 documentation, guidance from the British Standards Institution (BSI), and resources from industry organisations specialising in building performance and energy efficiency.



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