
Overview

This standard is for those who carry out air tightness and/or change rate testing of single dwellings and small buildings up to a gross internal volume of 4000m³ inside the thermal line as defined by EN13829 2001. These buildings are considered to be 'simple' and cannot be tested in volumetric sections less than 4000m³. It covers those activities carried out to conduct an air tightness test of the air permeability of the building/envelope.

You are required to carry out a relevant risk assessment of the site and building components before setting up appropriate air testing equipment and connecting all areas of the building to be tested. You must complete and keep accurate records of all measurements and location of equipment to be included in the air test report.

You must carry out the air tightness test following the relevant test Standard for simple buildings. All ventilation should be closed/shut down and sealed. You must ensure that all temporary seals remain in place during the test and that all mechanical ventilation and air conditioning systems remain switched off. You are required to note and record any variances from acceptable tolerances in key readings and record them for final reporting.

You must calculate and achieve the total airflow required to achieve a pressure differentiation of 50 Pascals. To determine a pass for building regulation compliance the result should be less than the target for the air test as defined in the approved national calculation methodology and with reference to the test strategy. You must complete and keep accurate records of all measurements and location of equipment to be included in the air testing report.

Performance criteria

You must be able to:

- P1 identify health, safety and specific fire safety requirements when conducting air tightness tests
- P2 establish the envelope area/volume of the conditioned space to be tested
- P3 ensure that the calibration of all air testing equipment has not expired and that it is fully operational prior to arriving on site
- P4 establish the ventilation systems in use and requirements for temporary sealing
- P5 establish the number and location of internal openings and fans to create equalisation of air pressure
- P6 determine if a building can be tested as a single structure; if not the building is not 'simple'
- P7 ensure that all relevant external windows and doors remain closed for the duration of the test
- P8 check and list temporary seals
- P9 check and record building details
- P10 check and record meteorological conditions including barometric pressure and temperatures
- P11 record pre-test information
- P12 conduct pre-test checks
- P13 carry out the testing process following relevant test Standard for single dwellings or other small buildings
- P14 ensure that all temporary seals remain in place for the duration of the test
- P15 gather and record test data
- P16 validate and assess test data against pre-test checks
- P17 gather and record post test information
- P18 confirm that building conditions have remained stable during the test, that temporary seals have remained in place and that external doors have remained closed
- P19 ensure that test data are accurately recorded
- P20 with reference to the test strategy compare the result of the test with the target air permeability as defined in the associated energy calculation at a test pressure of 50 Pascals to determine a pass or fail
- P21 remove all temporary seals that the air tester installed, if any, and return the building to its previous state
- P22 remove or safely dispose of all waste
- P23 take all equipment supplied for the test away from the site
- P24 arrange re-tests where appropriate

Knowledge and understanding

You need to know and understand:

- K1 how to identify health, safety and specific fire safety requirements when conducting air tightness tests
- K2 how to establish the envelope area/volume of the conditioned space to be tested
- K3 how to ensure that the calibration of all air testing equipment has not expired and that it is fully operational prior to arriving on site
- K4 how to establish the ventilation systems in use and requirements for temporary sealing
- K5 how to establish the number and location of internal openings and fans to create equalisation of air pressure
- K6 how to determine if a building can be tested as a single structure
- K7 the relevant and current test standards and regulations to be applied
- K8 the importance of ensuring that all external windows and doors remain closed and that all temporary seals remain in place for the duration of the test
- K9 calibration checks prior to arrival on site
- K10 how to use relevant instrumentation
- K11 how to measure and record all outside and inside temperatures
- K12 understand the effects of the various corrections required in the relevant test Standard
- K13 limiting factors to be taken into account when evaluating results
- K14 the required measurements and tolerances as defined in the relevant test Standard
- K15 ways of calculating Equivalent Leakage Areas
- K16 requirements for the calibration of equipment in accordance with traceable Standards, by UKAS accredited organisations and against recognised test procedures
- K17 calibration periods for different equipment
- K18 different dwelling types and characteristics which differentiate them
- K19 how to identify all results outside accepted tolerances and their effect on test results and reporting
- K20 the relationship between air flow rate measurements and the required range of fan flows
- K21 the technical requirements of the test Standard in relation to pressure measurement
- K22 how to ensure stabilisation of induced pressures throughout the building envelope
- K23 the importance of recording the average of positive and negative values

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- over minimum periods of 30 seconds and the average of all values over 30 second periods
 - K24 positive, negative and average values tolerance which prevent a valid test from being undertaken and how to explain this to the client
 - K25 how to qualify results where static pressures before or after the test are in excess of plus or minus 5 Pascals
 - K26 how to complete all data sheets accurately with the required results to permit the production of a test report
 - K27 how to calculate the total airflow required to achieve a pressure differentiation of 50 Pascals
 - K28 how to establish the test result
 - K29 best and normal values for the type of building being tested
 - K30 procedures for the safe removal of all temporary seals and returning the building to its previous state
 - K31 procedures for the safe removal and disposal of waste materials
 - K32 equipment checks required to ensure that all supplied equipment has been collected from site
 - K33 the importance of following site sign out procedures and/or making appropriate people aware that you have completed the test and are leaving the site
 - K34 methods for identifying air leakage paths such as smoke pens
 - K35 how to handle re-tests

ASTATT3

Carry out air tightness testing for single dwellings and other small buildings



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