Carrying Out Air Tightness Tests and Smoke Tests

Golden Rules To Ensure Part L Is Met

Carry out the air tightness test when the building envelope is complete. Temporarily sealing areas of the building is not only difficult and costly to do well, but the risk of failing increases as well. It is far better to delay the test for a week rather than test early, fail, and then have to carry out another test in one weeks time.

Temporarily seal all heating and ventilation equipment and ensure window trickle ventilators are closed. Check all service ducts (including telephone, electric, spare ducts) and water and condensate traps are either sealed or full.

The worst acceptable standard for the leakage rate is < 10 $m^3/h/m^2$.

Answers to the Most Frequently Asked Questions

Will the building fabric be damaged by pressurising the building to 50 Pascals, during the test?

No. A heavy thunderstorm may impose pressures of 500 Pascals onto the building fabric.

How long does it take to carry out an air leakage test?

A minimum of 4 hours should be allowed to carry out a test. It would take approximately 1-2 hours to temporarily seal services and set up the air tightness test equipment. If the air test runs smoothly, a maximum of 30 minutes is required; but it's best to allow 1 hour. It takes approximately 1 hour to de-rig every thing. However, if an air test fails and multiple tests are carried out or the fan is left running to search for drafts and air leakage paths, then the air test can run on.

Can people be in the building when carrying out a test?

Yes, as long as no-one opens a door or access hatch which forms part of the air barrier – which basically allows the pressure to drop and the test would need to be run again.

Does the smoke test damage the building?

No. However, the building needs to be empty of all people for Health and Safety reasons. It is also a good idea to inform the Fire Brigade to avoid unnecessary call outs. The smoke is a harmless food grade water based mono-propylene glycol (MPG), but it is a good idea not to expose fresh food or produce to it.

What size fan do we need to carry out the test?

Q_{50} * 0.8. ATTMA TS1 states that the fan must be capable of achieving at least 80% of the required air volume flow rate, at 50 Pascals pressure difference – Q_{50}. Q_{50} = A * 10 / 3600 m^3/s where 10 is the Air Permeability target, A = Area of walls, roof and ground floor

Note. HRS SERVICES Portafan system can deliver from 1 - 18 m^3/s and the megafan system 10 - 85 m^3/s. Note HRS SERVICES are certified to ISO 9001:2000 and UKAS.