

# Helping you achieve Air Tightness

As the construction industry becomes more familiar with air tightness detailing, regulations are likely to get tougher; the draft 2010 version of Approved Document L is likely to suggest a reduction from 10m<sup>3</sup> to 5m<sup>3</sup>.

However even with the current standards it is important to remember that failures are possible. Testing has to be done when the building is complete, which will mean costly and time-consuming remedial measures if the building fails. Additionally test results are fed back into the SAP calculation to produce the Energy Performance Certificate (EPC) test results can have a significant influence on the final energy rating achieved.

Premier Guarantee can help you ensure your developments meet the required standards through using our SAP, EPC and Air Pressure Testing services. **For more information, contact our team on 08444 120 888 or email [services@premierguarantee.co.uk](mailto:services@premierguarantee.co.uk).**

## 3 Key Areas for Air Leakage

### Penetrations in the air barrier

- Domestic doors and windows – reduce the risk by using good quality products
- Trickle vents – make sure they create a good seal when closed
- Loft Hatches – plastic hatches may distort or be ill-fitting
- Floor and wall junctions – check for gaps between the floor and skirting

### Services

- Plumbing – check seals where piping runs through the building
- Electrical fittings – leakage through fittings can add up and result in a fail
- Ventilation – ensure any ventilation is well fitted and sealed at the edges

### Structural members

Where joists and beams penetrate the air barrier they will require careful sealing – this may be forgotten if they are 'hidden' above suspended ceilings. The use of joist hangers minimises the size of the penetration.

## Five Tips of Air Tightness

**1. Consider the issues early:** When a building is at concept stage, consideration should be given to air tightness. A complicated building shape with multiple levels, many corners, lots of external wall and awkward junctions will require much greater care to achieve air tightness than a rectangular one with few openings.

**2. Define the air barrier:** It is important to define the 'air barrier' at an early stage in the process, identifying where it is most appropriate/practicable/cost effective to create the barrier between the internal spaces and the outside or unheated spaces (e.g. plant rooms, garages, lofts, etc). This will usually be an existing element of the design such as the plaster finish, block work, cladding, fire sealing or vapour membrane.

**3. Check for continuity:** Ensure that existing details do not adversely affect air permeability performance. Careful detailing may be required at the junction of building elements and where different materials meet.

**4. Specification of materials and products:** It might sound obvious but it is important that the materials that make up the air barrier are impermeable to air i.e. a skim of plaster is preferable to taped and jointed plasterboard, but either will give a reasonable level of air tightness across its surface, with the proper attention to detail. However, other materials may be permeable, such as mineral wool, block work and suspended ceilings.

**5. Site Control:** The main contractor will oversee the construction of the building fabric and must co-ordinate the work of their own staff and sub-contractors to ensure key details are followed. Communication is vital - if plumbers, electricians, etc are not aware of the air barrier, they cannot maintain it. Timely inspection is also important where critical work may be hidden by panels, suspended ceilings, raised floors, boxing, etc.