



Airtightness Document 30.07.08

Revisions to Part L in 2006 require improvements to a building's airtightness. The current requirement for air-leakage is $7\text{m}^3/\text{hr per m}^2$

The regulations are complex and open to interpretation by individual building control officers. However, we have produced this document in order to assist our customers understand the new regulations and how they apply to patent glazing.

FAQs

Do the rules apply to both new build & refurbishment?

Yes, the rules apply to all buildings. During refurbishment that is subject to building control, efforts must be made to 'enter into the spirit' of the new regulations and improve airtightness where possible.

Are any buildings exempt?

Only Listed buildings where it would dramatically alter the fabric of the building to accommodate the new requirements. However, you will be expected to make what improvements you can to improve the airtightness in the areas being refurbished.

Do the rules apply to both domestic & commercial buildings?

Yes, dwellings & non-dwellings are included.

Do all buildings have to be tested?

All new buildings will require testing. It is mandatory to test all non-dwellings with a total floor area greater than 500m^2 . However, when testing is not to be carried out, you are required to use a default air-permeability value of $15\text{m}^3/\text{hr}/\text{m}^2@50\text{pa}$ in any calculations. This is such a poor value, that when combined with even the best Uvalues and building services system (heating/aircon) efficiency values, you will not be able to meet the total energy consumption requirements. In effect, this will require all non-dwellings to be tested. Homebuilders will only have to test each type of dwelling on their sites rather than each individual home.

Are Conservatories exempt?

Unheated conservatories with a floor area less than 30m^2 currently remain exempt from building regulations. However, in order to remain exempt, conservatories must be separated from the heated area by doors which offer compliant airtightness & Uvalues. If the conservatory is not separated by compliant doors, then they will require to meet the latest airtightness targets. If the conservatory is heated it must comply with building regulations in terms of both thermal & airtightness requirements. Conservatories with a floor area larger than 30m^2 are always subject to building regulations.

I am confused, why do we need to work to $7\text{m}^3/\text{hr}/\text{m}^2@50\text{pa}$ when the revised regulations state $10\text{m}^3/\text{hr}/\text{m}^2@50\text{pa}$ is the 'worst acceptable standard'?

So are we! Why this has been phrased this way we cannot understand as essentially if you combine the 'worst acceptable standards' for air permeability, Uvalues & building services systems the building is unlikely to meet the new total energy consumption requirements. We assume that if you have a case where you can only achieve $10\text{m}^3/\text{hr}/\text{m}^2$ air permeability, then you will have to have better than 'worst case' Uvalues & building services systems figures.

What does all this so many $\text{m}^3/\text{hr}/\text{m}^2@50\text{pa}$ mean?

These formulas look technical but it is simply a way of expressing how much air comes out of or enters the building expressed in cubic metres per hour, per square metre of the entire building fabric. 50pa is the actual air-

pressure the test is carried out at. Pa is short for pascals which is the customary unit of measurement for air pressure. You will often see glazing systems tested to 600pa or even 1200pa, but 50pa is considered a 'sensible' pressure at which to test buildings without causing damage.

What do we need to do to ensure our patent glazing installations comply with the new airtightness requirements?

Our ThermGard patent glazing system has previously been tested. The tested area was 2.28m² and the measured leakage was 1.44m³/hr, well within the new regulations. Improvements have since been made to the gaskets & draught excluders and we suspect even better results when the system is tested in the near future. It is important to use a draught excluder at the head in addition to the one traditionally supplied at the eaves. Particular attention must be made to the junctions and abutments with the building, as more often, these are the most likely air leakage routes due to poor workmanship rather than the system itself. Available shortly, will be revised typical details showing best practice for installation, in the meantime, please ensure you contact Technical Support for advice on any contracts where air-permeability is a factor.

Can you provide me with test certificates?

Yes, copies of the original 2002 test for Thermgard are available on request. However, we are currently reviewing our product range and constantly making design improvements. We anticipate having the improved system tested soon.

Can patent glazing form part of the building's air barrier?

Yes, due to the excellent performance of our Thermgard system you can confidently rely on 'airtight' patent glazing.

Who is responsible for organising the air-tightness test before hand over?

This is expected to be the responsibility of the Main Contractor. However, this should be specifically expressed in any contracts. It is important for regular inspections during the construction process to ensure our manufacturers recommendations are being observed by the installers and the workmanship is of a good standard. It is an expensive process to later 'seal up the gaps' once installation has taken place.

Where can I find out more information?

The following organisations all offer excellent advice & various services:-

Air Tightness Testing & Measurement Association www.attma.org

BRE Environment www.bre.co.uk

If you require advice with a particular project, please contact Richard Burgess at our London office on tel 020 8801 4221 or email richard.burgess@lonsdalemetal.co.uk

PLEASE NOTE: Whilst we are happy to offer customers the benefit of our advice, we do not consider ourselves substitutes for a professional engineer. In all cases, we recommend you approach an experience consultant for advice. The ATTMA has a list of members you can contact on their website above.

E&OE

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