



We employ specially trained personnel and the latest computerised measuring equipment

### Alternative to pressure testing on small developments

Where no more than two dwellings are to be erected, an alternative approach to pressure testing would be either:

1. To demonstrate that during the preceding 12 month period a dwelling of the same *dwelling type* constructed by the same builder had been pressure tested in accordance with the standards required by the Building Regulations and had achieved the specified air permeability.
2. Avoid the need for any pressure testing by using a value of 15m<sup>3</sup> / (h.m<sup>2</sup>) for the air permeability at 50 Pa when calculating the DER (Dwellings Emission Rate).

For option 2, higher standards of insulation and boiler efficiency will be required to compensate.



Besblock Limited authorised SAP Assessors & Air Leakage Testing. Please contact your supplier for details, or call our helpline on

**01952 685000**



**Besblock**

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# Now from Besblock Accredited Air Leakage Testing



**Besblock**

### Our Service to you

Besblock Limited are authorised to complete air pressure testing as required by L1A 2006. We employ specially trained personnel and the latest computerised measuring equipment. All tests will include official test data and certification required for Building Control.

We will require from you the area of the external envelope of the dwelling to be tested, calculated as shown in Diagram 1 overleaf. This can also be confirmed from the SAP assessment, and will again be confirmed by our tester on site.

As authorised SAP assessors we are highly qualified to assist and advise customers in compliance with Part L1A 2006. This service includes full SAP and NHER assessments, and the production of all documentation required for Building Regulation submissions.

### Booking Procedure

1. Sign Up as a Besblock customer and receive your unique customer I.D.
2. Visit [www.besblock.com](http://www.besblock.com). Fill out the test booking form and press submit.
3. Confirmation of your booking will be sent by return email.
4. Results will be completed and emailed in PDF form within 48hrs of test.

For further information or to receive booking documentation by post,

please call: 01952 685000

email: [technical@besblock.co.uk](mailto:technical@besblock.co.uk).



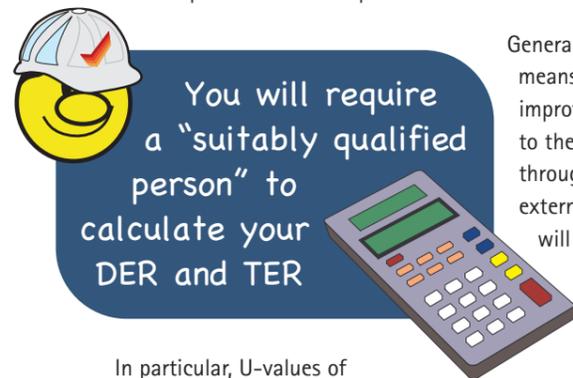
the pressure is off! SAP

# Air leakage testing on domestic dwellings

Since 1985 U-values for the external elements in dwellings have undergone continual improvement. In the main, this has been driven by the Government in a bid to reduce carbon emissions in excess of the figures required by the Kyoto agreement.

For external walls, 1985 saw the introduction of elemental U-values of 0.60 W/m<sup>2</sup>K, improving to 0.45 W/m<sup>2</sup>K in 1990. Further amendments to Part L in 1995 saw the introduction of the Government's SAP procedure which, for the first time, began to assess the overall performance of the external fabric of the building and its services in relation to heat loss and carbon emission.

Part L1 2006 now assesses the actual carbon emission generated as a result of the dwelling and its services. The building as designed is compared to a notional building and the carbon emissions compared. If the building as designed has a lower carbon emission rate (DER) than the notional (TER), then a "pass" under the requirements of Part L is achieved.



**You will require a "suitably qualified person" to calculate your DER and TER**

Generally, this means that improvements to the heat loss through the external fabric will become necessary.

In particular, U-values of external walls may require a design specification suitable of achieving 0.30 W/m<sup>2</sup>K.

The law of diminishing return makes it increasingly difficult to arrest heat loss where U-values are as low as those required by Part L1 2006. **The next step is to ensure that the heat is retained for as long as possible within the dwelling by reducing air leakage paths.** The building's external envelope should therefore be constructed so as to achieve an acceptable rate of air leakage when tested.

**Air leakage assessment of newly constructed dwellings has become a mandatory requirement with the introduction of L1A 2006.** The regulation requires that the maximum acceptable air leakage rate for dwellings is 10m<sup>3</sup> / (h.m<sup>2</sup>) @ 50 Pa.



*A trained technician can easily fit pressure test equipment to most types of door installed in new dwellings*

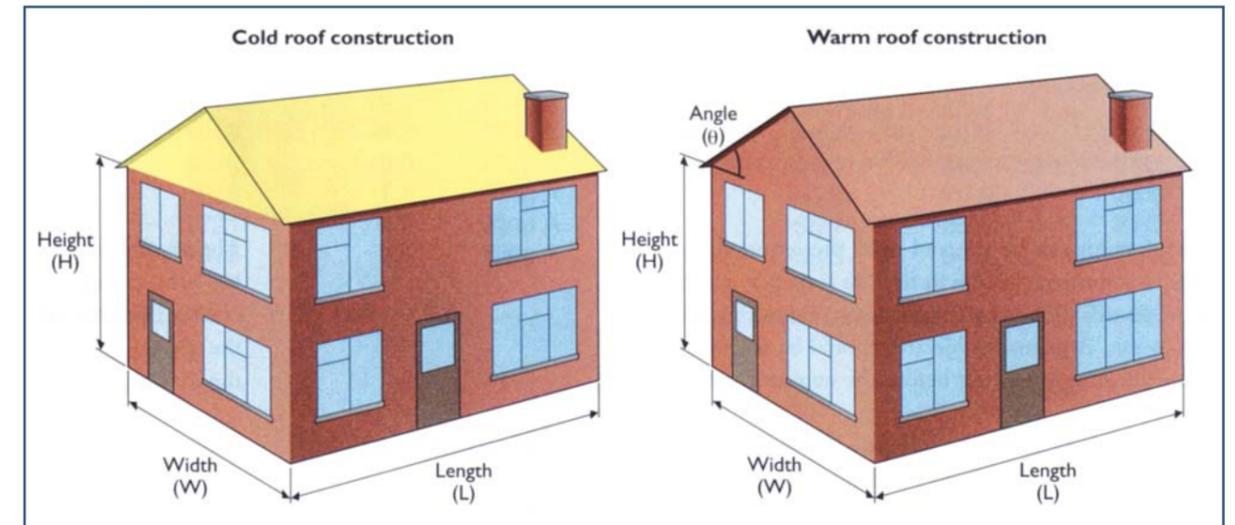
In some circumstances a lower air leakage rate may be required for the DER (dwellings emission rate) to be less than the TER (target emission rate) in order to achieve a "Pass".

**Improvements to the air leakage rate can be used as a tool to reduce the DER and subsequently enable U values to be relaxed in other areas of the external envelope.** Our trained assessors will be able to offer advice on this subject. It is likely that detached houses and bungalows will have the greatest difficulty in meeting the required carbon emission rate, and will almost certainly require a lower air permeability specification.

**Part L 2006 requires that the testing be undertaken by suitably qualified persons.** Our comprehensive technical backup service now offers a fully accredited SAP rating service together with On Site Air Leakage testing units. Our fully qualified and accredited technicians utilise "state of the art" computer controlled equipment to provide highly accurate and consistent test results.

## The requirements

On each site, an air leakage test should be carried out on a unit of each dwelling type usually selected by Building Control. However, as a fully accredited test facility, we are able to make the selection of plots for test without the need to refer to Building Control. You will be required to inform the B.C. body of the plots selected for test along with your Building Regulation submission. It is desirable to commence tests at an early stage in order to establish the robustness of the proposed design and construction at the earliest possible opportunity.



*Diagram 1. The dimensions of an example building required to determine a building's envelope area*

Cold roof construction			Warm roof construction		
Area	Calculation (m <sup>2</sup> )	Result	Area	Calculation (m <sup>2</sup> )	Result
Floor area	L x W (5 x 4)	20	Floor area	L x W (5 x 4)	20
Roof area	L x W (5 x 4)	20	Roof area	L x W / COSθ (20x12) / COS 25	22.07
Wall area	2 x H x (W + L) 2 x 6 x (5 + 4)	108	Wall area	2 x H x (W + L) + 0.5 (W x W) x (TANθ) 2 x 6 x (5 + 4) + 0.5 x (4 x 4) x TAN 25	111.73
Total		148m <sup>2</sup>	Total		153.8m <sup>2</sup>

*The method of calculating envelope area based on the example in Diagram 1*

For the purpose of L1, a dwelling type means a dwelling of the same generic form:

Detached, Semi detached, Mid terrace, End terrace, Mid floor, ground floor and top floor flats.

Different dwelling types are not defined by their floor area or their amount of bedrooms. Different forms of wall or roof construction define a dwelling type. Where a housing development has a mix of construction forms, a higher number of tests will be required. *Blocks of flats should be treated separately irrespective of the number of blocks on the site.*

## Frequency of testing

Where accredited construction details have been adopted, an air leakage test should be carried out on **one unit of each dwelling type** on the site. For information on accredited construction details visit [www.planningportals.gov.uk](http://www.planningportals.gov.uk). Then select Building Regulations, then Part L. The drawings illustrating the accredited construction details may be downloaded.

Where accredited construction details have not been adopted the required frequency of testing will be as below.

Number of instances of the dwelling	Number of tests to be completed on the dwelling type
4 or less	One test for each dwelling type
More than 4, but equal or less than 40	Two tests for each dwelling type
More than 40	At least 5% of the dwelling type, unless the first 5 units of the type that are tested achieve the design permeability, when the sampling frequency can be subsequently reduced to 2%