

The Window Energy Rating Scheme

Helping you comply with the 2010 Building Regulations

THE BACKGROUND

In March 2004 the Window Energy Rating Scheme (WERS) was launched by the British Fenestration Rating Council (BFRC), an independent government-supported body that had been set up to administer a system of Window Energy Ratings in the UK. The BFRC is now part of the Glass and Glazing Federation, but is still an independent company.

The Window Energy Rating Scheme was designed to show the comparative performances of different windows in a very simple and easily understandable way. For this reason the rainbow labelling system, used for some time on white goods, was adopted.

Essentially, the system helps consumers to make choices that enable them to reduce heat loss in their homes, resulting in lower heating bills, reduced CO₂ emissions and a smaller carbon footprint.

Energy Window	
	A
Energy Index (kWh/m ² /year) <small>(Energy Index certified by BFRC and based on UK standard window. The actual energy consumption for a specific application will depend on the building, the local climate and the indoor temperature)</small>	1
The climate zone is:	UK
Thermal Transmittance (U _{win,low})	1.4 W/m ² .K
Solar Factor (g _{win,low})	0.43
Effective Air Leakage (L _{factor})	0.00 W/m ² .K
www.bfrc.org	
This label is not a statutory requirement. It is a voluntary label provided as a customer service to allow consumers to make informed decisions on the energy performance of competing products.	

WINDOW ENERGY RATINGS & THE BUILDING REGULATIONS

Once established, Window Energy Ratings were then included in the Building Regulations as a method of compliance. Part L of the Building Regulations England and Wales 2010 requires domestic replacement glazing to have a WERS C rating or above, or a whole window U-value of 1.6W/m²K or less. Section 6 of the Scottish Building Standards 2010 requires the same minimum standards. The whole industry needs to understand the Window Energy Rating Scheme and what they need to do be able to offer energy rated windows.

Additional organisations, other than the BFRC, are now also offering such schemes, such as BSI and Certass. Each scheme is run in a slightly different way, so this leaflet refers mainly to the BFRC scheme for simplicity.

HOW IS THE WINDOW ENERGY RATING CALCULATED?

The Window Energy Rating is calculated by measuring the thermal losses of a window (the window's U-value) and air leakage rate in conjunction with the thermal benefits of free solar heat gain (the window's g-value).

In simple terms, WER = solar gains – (thermal losses + air leakage). The official formula used for this calculation is set down in the Building Regulations.

HOW TO IMPROVE THE WINDOW ENERGY RATING

You can improve a rating in two fundamental ways; decrease the thermal losses or increase the solar gain. There are many ways of achieving this, some more effective than others and some certainly more cost-effective than others. This is explored in more detail over the page.



HOW TO IMPROVE THE WINDOW ENERGY RATING continued...

Decreasing Thermal Losses

- Use a high performance window profile system, that insulates well against heat loss.
- Use a high performance low-E glass that optimises a low U-value with a high solar factor.
- Gas fill the cavity of your sealed unit and optimise the cavity width e.g. 16mm or 20mm for argon.
- Use a high performance warm edge spacer bar e.g. Swisspacer V.

Increasing Solar Gain

- Ensure you use glass that has a high solar factor.
- Increase the sighted glass area e.g. by using a slim profile frame/gasket design.

SO, WHAT DO I NEED TO DO NOW?

The steps you need to take now can vary depending on what your company does as its core business e.g. window manufacturer v window installer, and in the case of the latter whether you want to sell windows labelled in your own name, or in the name of your window supplier.

The flow charts illustrate the various steps in the process, using the BFRC scheme as an example:

The BFRC Licence Holder Option:

If you wish to become a BFRC licence holder then you need to undertake the following steps.

Step 1: Obtain a simulation report from a BFRC Certified Simulator for your window.
N.B. Talk to the window profile supplier and your sealed unit supplier about product choices.



Step 2: Implement a Quality Management System / Factory Production Control System
e.g. ISO 9000 or similar (N.B. you do not need ISO 9001).



Step 3: Contact a BFRC approved Independent Auditor (IA), so they can audit the simulation and your manufacturing systems.



Step 4: The IA will forward the approval to register the window with the BFRC.



Step 5: Receive your label from the BFRC. Your details will now be registered on www.bfrc.org.

At each stage, the companies involved will be able to advise you of the relevant costs and fees.

This process is **for window manufacturers supplying glazed windows** either: directly to homeowners; or to installers who just wish to buy and sell pre-labelled energy rated windows.

It is also **for window suppliers and installers who would prefer to have full control over the product specification** by being license holders themselves (rather than just 'authorised retailers' of someone else's licensed window and product specification).

Talk to the Profile Manufacturer

If you are a window manufacturer, or supplier, or installer who wants to become a BFRC licence holder yourself, it is always advisable to talk to the company that makes the window profiles that you use. Most profile companies have in-house BFRC approved simulators who can advise you on what rating you can achieve using the different window options and sealed unit options you are interested in before issuing you with a full simulation report.

Talk to the Sealed Unit Manufacturer

If you buy in your sealed units, it is also recommended that you talk to your sealed unit suppliers about all of the following factors because they will impact on your WERS rating. Once you have paid for your WERS label and become a BFRC licence holder, you don't want to suddenly find that your usual supplier is now unable to supply you without you having to first jump through more hoops!

- Check the types of glass they can offer.
- Check the type of spacer bars they use.
- Check the type of sealant they use.
- If you require gas filled units, check they are accredited to do this. e.g. have EN1279 Part 3.

Be particularly careful about the choice of warm edge spacer bar. For example some warm edge spacer bars require costly investment in application machinery; so sealed unit manufacturers may not be willing or able to make such an investment. Other warm edge spacers bars e.g. Swisspacer V give an optimum mix of excellent thermal insulation performance (therefore contributing to top window energy ratings) combined with great aesthetics, but require no special investment in application machinery. Also, pay attention to the gas retention aspect. Swisspacer sealed units can be made either with the popular cut and corner key method of construction, or bent bar. Gas retention for both methods of construction of Swisspacer units is excellent. If a company has already passed the relevant EN1279 tests with aluminium spacer, then substitution rules can possibly be applied to Swisspacer products, saving time, money and worry. Conversely, some warm edge spacers are prohibited from the application of these substitution rules in this way.

The BFRC Approved Retailer Option:

If you do not wish to go to the expense and trouble of becoming a BFRC licence holder yourself, but **you wish to buy rated windows either glazed or unglazed and still have your own company name on the label**, then you need to undertake the following steps:

Step 1: Speak to your window supplier to advise them you want to become an Authorised Retailer. (They must be a BFRC license holder).



Step 2: Complete the BFRC application form.



Step 3: Provide details of your sealed unit supplier, if you are going to be sourcing your sealed units independently from the licence holder. N.B. the sealed units must be identical to those used by the licence holder.



Step 4: Upon payment of the relevant fees, your company details and the rated product details will be listed on the BFRC website.



Step 5: The BFRC will appoint an Independent Agency to carry out an annual surveillance check. If you are a FENSA registered installer this will take place during your pre-installation assessment.

This process is ideal for **window suppliers and installers** who are happy to sell a pre-determined window specification, as licensed by another company, but who want to have their own company name on the label rather than their supplier's. Costs are lower via this route.

ADDITIONAL WINDOW ENERGY RATING OPTIONS / FLEXIBILITY

The various organisations that offer Window Energy Rating Schemes are working on making the process simpler, more cost-effective and easier to implement.

For example, the substitution of components e.g. glass types, sealant types, spacer bars etc on the basis of equal or better performance. This is to make it easier for sealed unit suppliers to work with customers and potential customers and vice versa.

Another option is to allow more than one specification of sealed unit to be registered on a particular license, again enabling more flexibility for the companies in the supply chain.

For full details of these and other options, please contact the relevant provider of Window Energy Ratings e.g. BFRC, BSI or Certass.

HOW YOUR CHOICES CAN BENEFIT YOUR BUSINESS

Although WERS can seem like a lot of work, there are key advantages too!

Stand Out From the Crowd

Although it is possible to comply with the Building Regulations using whole window U-values, the WERS scheme is designed with the consumer in mind. They will easily understand the labelling system and it could well be a key factor that influences their decision on which supplier to use and which window to choose. If you have a rating and your competitors don't, you will stand out from the crowd and that could help you win more business.

Conversely, do you want to be perhaps the one company they look at that has no WERS rating on offer? Or, do you want to be just conforming with a C, when your competitors are also offering A ratings?

Your Products Could Also be Energy Saving Recommended

Once you have your WERS rated window, if it is a good enough rating (an A or B rating from 1st October 2010) then you will also be able to apply to use the Energy Saving Trust's 'Energy Saving Recommended' logo. This is another label that is very familiar to the consumer. It could therefore give you that edge that will help you close the deal.



SOME EXTRA FACTS WORTH KNOWING ... IN CASE YOU GET ASKED!*

- The certification is given for a window to the 'standard GGF configuration', and the result can be applied to windows of other configurations using the same system/profile.
- The window certification is not affected by the subsequent use of leaded lights, Georgian bars or obscure glass. The reason for this is that WERS is meant to be a *comparative* tool only i.e. a simple way for the consumer to generally compare the thermal performance of different windows.
- If you have certification on a window with full reinforcement, it will also cover windows with minimum reinforcement.

* Correct for the BFRC scheme at the time of going to print.