

A Step by Step Guide to Energy Labelling of Solid Fuel Appliances (Part 1)

What do the new regulations require?

The “Energy Related Products” (ErP) Regulations require that :

- From the 1st January 2018 solid fuel local space heating appliances (and oil and gas local space heaters) must be sold with a printed label which shows their heat output and energy efficiency index, and provide a technical fiche with the product also. Electronic versions of the label and fiche must also be made available to dealers. Technical documentation should also be available to the Authorities upon request. This is a very different efficiency measurement to the one provided in the standard CE test. Boiler stoves and cookers which heat water will also need to have the heat output to water on the label. In addition to the above, any promotional information must include reference to the efficiency class.
- Furthermore from the 1st January 2022 the Ecodesign requirements for minimum efficiency and emissions come into force and must be met.

This article tries to provide some guidance on steps required to be taken by solid fuel local space-heating appliance manufacturers.

Which appliances are included?

All solid fuel local space heaters (<50kW nominal heat output)), including Spanish fire basket-style appliances, Franklin stoves (metal lined fireplaces with a U shaped flue) and potbellied stoves. The regulations include appliances installed in workshops, and decorative appliances. Some exceptions exist – for example: external appliances, sauna heaters, air heaters and products where the direct heat output is low – but the majority of wood, pellet and mineral fuelled appliances, will be required to comply with the Regulations:

2015/1185 – Ecodesign requirements for local space heaters

2015/1186 – Energy Labelling of local space heaters

Which Standards do the Regulations Refer to?

The regulations set out limits, which should be measured using harmonised standards as published in the Official Journal of the EU. In the absence of such harmonised standards, measurements and calculations must be obtained using recognised standards. The harmonised standard is always the preferred route, followed by a recognised national standard (e.g. BS, DIN). Alternatively, procedures published by a Boiler Efficiency Directive Notified Body or an organisation with UKAS approval under the Construction Products Directive if no standards are available.

Draft harmonised standards are being prepared – the 16510 suite which will comprise of a Part 1 and appliance type specific Part 2’s, but at the time of writing these are not available as Harmonised published Standards.

What information is required on the Energy label?

Annex III of regulation 2015/1186 gives all the design detail for the label, but the information required to be shown is:

- Supplier's name or trade mark
- Supplier's model identifier
- The energy efficiency class (indicated by the arrow)
- The symbol for direct heat output
- The direct heat output in kW, rounded to the nearest one decimal place
- For local space heaters with heat transfer to a fluid, the symbol for indirect heat output
- For local space heaters with heat transfer to a fluid, the indirect heat output in kW, rounded to the nearest one decimal place

Do I have to apply for a separate label and product fiches for each of my appliances?

Each label contains the model identifier so will be applicable to that product. The product fiche may cover a number of appliances supplied by the same supplier. The product fiche shall be included in the product brochure and can take the form of a copy of the label with the following additional information clearly provided:

- The energy efficiency index
- The useful energy efficiency at nominal heat output (and reduced output if applicable)
- Any specific precautions to be taken when the appliance is assembled, installed or maintained

How should solid fuel appliances be tested?

Appliances should be tested according to the appropriate standard. The appliance combustion efficiency should be calculated by measuring the rate of combustion and then determining flue gas loss with allowance for undergrate loss etc.

However, calculating the energy efficiency to be displayed on the Ecolabel is not straightforward, and it's certainly not as simple as calculating appliance efficiency and matching it on the A-G Efficiency Index.

For example, the procedure for calculating the Seasonal space heating energy efficiency to allow identification of Energy Efficiency Index (A to G) of a local space heater is:

The energy efficiency index (EEI) of all local space heaters is defined as:

$$EEI = (\eta_{S,on} \cdot BLF) - 10\% + F(2) + F(3) - F(4) - F(5)$$

- Where — $\eta_{S,on}$ is the seasonal space heating energy efficiency in active mode, expressed in %, calculated as set out in point 4(b), — BLF is the biomass label factor, which is 1,45 for biomass local space heaters and 1 for fossil fuel local space heaters, —



- F(2) is a correction factor accounting for a positive contribution to the energy efficiency index due to adjusted contributions of controls of indoor heating comfort, the values of which are mutually exclusive, cannot be added on top of each other, expressed in %, —
- F(3) is a correction factor accounting for a positive contribution to the energy efficiency index due to adjusted contributions of controls for indoor heating comfort the values of which can be added on top of each other, expressed in %; —
- F(4) is a correction factor accounting for a negative contribution to the energy efficiency index by auxiliary electricity consumption, expressed in %; —
- F(5) is a correction factor accounting for a negative contribution to the energy efficiency index by energy consumption of a permanent pilot flame, expressed in %.

Kiwa Gastec can assist with these calculations for you provided you have the CE test report for your appliance. Please note this is the current calculation based on information received by Kiwa Gastec, November 2015; previous calculations have not shown the BLF.

Responsibilities of dealers

Dealers will have to ensure that:

- Each heater sold bears the label on the outside front of the appliance
- Any advertisement or promotional material should make reference to the energy efficiency class of that model
- Where the product is not displayed such that the end user can see the product displayed, or via the internet certain core information will be required as per Annex VI and VII of 2015/1186

How will be ErP be Policed?

Enforcement of the new regulations will be carried out by national Market Surveillance Authorities (MSAs) – which in the UK is The National Measurement and Regulation Office (NMRO), through product testing and market surveillance. Installers or manufacturers identified as non-compliant could face legal action and criminal prosecution.

Fines for misreporting the energy efficiency rating can be unlimited, but will be closely related to the diligence that can be demonstrated in producing the efficiency measurements. Experience in other product sectors has shown the severity of enforcement sanctions.

Where to get advice on ErP compliance and how to get the Ecolabel?

There are many sources of information on the topic – The EU website, DECC website, HETAS and the Stove industry alliance but Kiwa Gastec has been testing solid fuel appliances for decades. We are a UKAS accredited test laboratory (No. 0692) for product testing and is accredited (No. 0217) to execute Product Conformity Assessment under the Construction Product Regulations and we would be delighted to help; for example:

1. Contact Kiwa Gastec to book one of our test engineers
2. Send us the CE test report for your appliance
3. We will calculate your combustion efficiency

4. We will ensure that you have collected sufficient supporting evidence for your application.
5. Armed with your supporting evidence and combustion efficiency calculation, you can create your label online and print it off.

Once I have received my label is there anything else I have to do?

Yes. By 2022, in addition to the label, The Ecodesign Regulations sets out a suite of emissions limits which must be met including particulates, carbon monoxide (CO), nitrogen oxides (NOx) and Organic Gaseous Compounds (OGC) - more on this in our Step by Step Guide to ErP and Solid Fuel (Part 2). We anticipate that most appliances can be tested quite quickly and would advise these measurements could form a part of routine testing in your product development plans. To get advice on meeting the ErP regulations for solid fuel appliances, or to book your appliances into our test labs, please call us on 01242 677877 or email gastecenquiries@kiwa.co.uk

