

A Step by Step Guide to Energy Labelling of Solid Fuel Appliances (Part 2)

Hopefully you will have read and enjoyed Kiwa Gastec's Step by Step Guide to Energy Labelling of Solid Fuel Appliances (Part 1) and are aware of the actions you need to take to fix Ecolabels to your solid fuel appliances by 1st January 2018. The linked Regulation - 2015/1185 - Ecodesign requirements for local space heaters - will come into force on the 1st January 2022.

In addition to establishing minimum efficiency requirements, the regulations also stipulate specific eco-design requirements for emissions. The tests, designed to control the emissions limits of appliances, include:

- Particulate matter
- Organic Gaseous Compounds (OGC)
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)

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:

What are the requirements?

Efficiency

From the 1st January 2022 Seasonal Space heating efficiency shall not be less than:

- 30% for open fronted solid fuel local space heaters
- 65% for closed fronted solid fuel local space heaters (non-wood pellet fired)
- 79% for closed fronted solid fuel local space heaters (wood pellet fired)
- 65% for cookers

All efficiencies are calculated using net calorific values. Please note that these efficiencies are not the traditionally reported efficiency but are calculated as described in the Part 1 article.

Particulate matter

This is complicated by a long running and intense debate about measurement techniques – which sadly still continues. At the time of writing there are three accepted measurement techniques, with different sampling regimes and each one has a different emissions limit

associated. Annex III of the Regulation describe in a little more detail but, for simplicity for this article we will refer to these as:

- i. Heated filter – commonly referred to as DIN+
- ii. Dilution tunnel – full burn cycle
- iii. ESP (or dilution tunnel partial cycle)

From the 1st January 2022, emissions of particulate matter (PM) shall not exceed the limits detailed below by appliance type (corrected to 13% O₂):

Open fronted solid fuel local space heaters

- 50 mg/m³ method i
- 6g/kg (dry matter) method ii

Closed fronted solid fuel local space heaters (non-wood pellet fired)

- 40 mg/m³ method i
- 5g/kg (dry matter) method ii
- 2.4 g/kg (dry matter) for biomass or 5g/kg (dry matter) for mineral fuel using methods iii

Closed fronted solid fuel local space heaters

- 20 mg/m³ method i
- 2.5g/kg (dry matter) method ii
- 1.2 g/kg (dry matter) method iii

The exact detail of the test methods will be detailed in the standards which are currently still draft and we fear could possibly change subtly.

Organic gaseous compounds (OGC)

From the 1st January 2022 emissions of OGC shall not exceed (at 13% O₂):

- 120 mgC/m³ for open and closed fronted solid fuel local space heaters (non-wood pellet fired) and cookers using biomass
- 60 mgC/m³ for closed fronted local space heaters using wood pellets

Carbon Monoxide (CO)

From the 1st January 2022 emissions of CO shall not exceed (at 13% O₂):

- 2000mg/m³ for open fronted solid fuel local space heaters
- 1500mg/m³ for closed fronted solid fuel local space heaters (non-wood pellet fired) and cookers using biomass
- 300mg/m³ for closed fronted local space heaters using wood pellets

Nitrogen oxides (NO_x)

From the 1st January 2022 emissions of NO_x shall not exceed (expressed as NO₂ corrected to 13% O₂):



- 200 mg/m³ for open and closed fronted solid fuel local space heaters and cookers using biomass
- 300mg/m³ for open and closed fronted local space heaters and cookers using solid mineral fuel

Is my appliance likely to meet the emissions requirements?

Unfortunately, because these tests are not part of the CE Marking suite, appliance manufacturers tend not to know what their emissions measurements are. These emissions tests are relatively straightforward and we recommend that they are included in your future test programs. By including these tests in your standard product test program, you will get an understanding of the emissions of your appliance and whether it can be legally sold from 2022. By understanding your appliance emissions now, there is time to take corrective action where necessary to ensure that you meet emissions limits in 2022.

Requirements for product information

From the 1st January 2022, manufacturers, their authorised representatives and importers will be required to include on websites, installation and user manuals for each product the seasonal efficiency and emissions described above at nominal and possibly minimum output for every fuel specified as suitable for use. Also for the preferred fuel nominal heat output and useful efficiency shall be detailed and also indicative values given for minimum heat output. Various other technical detail may be required relating to electricity consumption, heat output/temperature controls etc. Full details can be seen in Table 1 of the regulation.

How will the 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 emissions data can be unlimited, but will be closely related to the diligence that can be demonstrated in producing the measurements. Experience in other product sectors has shown the severity of enforcement sanctions.

Where to get advice on ErP compliance and emissions tests?

There are many sources of information on the topic – The EU website, DECC website, HETAS and the Stove industry alliance. 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.

What to do next?

To get advice on meeting emissions limits for solid fuel appliances, or to book your appliances into our test labs, please call us on 01242 677877 or email

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