



# part 1.

# APPLIANCES BURNING WOOD & SOLID MINERAL FUELS

## PREFACE

All appliances listed in this section have been designed to burn either wood-based fuels or to burn solid mineral fuels authorised for use in smoke control areas as listed in Part 3 of this guide. All approved products have been independently verified by HETAS to ensure that the appliance meets the provisions laid down in the UK Building Regulations, as well as ensuring requirements within legislation required by EU law have been met. These requirements include minimum efficiency, performance, product labelling and marking, whilst at the same time ensuring appliance installation instructions and technical literature is both in compliance with regulations and doesn't contain information that may compromise safety.

**When selecting a solid fuel appliance, consideration should always be made to ensure the appliance meets all legal obligations listed above, and also includes the following:**

- The appliance is appropriately CE marked and a Declaration of Performance is available
- A copy of the manufacturers installation & operating instructions is readily available and informative guidance given to carry out a compliant installation
- The appliance is appropriately energy labelled and accompanied by the required technical documents
- The appliance can burn the relevant fuels expected by the end-user
- Consideration for installation of a solid fuel appliance is a Smoke Control Area and what additional criteria need to be met.
- The appliance is best suited to the specific needs of the household and lifestyle of the end user

The HETAS product approval process demonstrates these points to installers, specifiers and end users, and shows the product is safe, efficient and conforms to Building Regulation requirements, as well as other stipulated UK & EU regulations. HETAS check the validity of any CE marking during the approval process, however HETAS Approval cannot be regarded as a substitute for CE marking.

**It is important to note that CE marking is a self-declaration by the manufacturer, and alone does not provide verification that the products meet the legal obligations listed above, only that the appliance has been appropriately tested to a relevant standard as one part of the CE marking process.**

## APPLIANCE SELECTION & PERFORMANCE

The appliances listed in this guide provide a wide choice of styles and outputs, ranging from closed roomheater stoves and roomheater stoves with boilers, to cookers and independent central heating boilers. Care should be taken in the selection of the appliance best suited to the specific needs of the property and occupants lifestyle.

The object of rating an appliance's performance is to ensure, as far as possible, that under normal conditions of domestic use and burning one of the fuels shown as suitable for use, the appliance will give satisfactory heat service to the property. This Guide does not cover dimensional and constructional features which affect frequency of attention or maintenance, and it must therefore be appreciated that a direct comparison between the different categories of appliance in this guide cannot be made without further advice if all aspects of performance are to be considered.

The appliance listings give the periods used in the Type Tests for the outputs to be achieved. It should be appreciated, however, that under household conditions the performance may vary to some degree when different fuels are burned and under changing conditions of draught.

Those appliances classed as "continuous burning" have the ability to be turned down and operated at a slow burning rate and resultant low heat output. However, these appliances operated at low output for extended period can lead to detrimental conditions within the chimney which can lead to reduced life expectancy of metal components. It should be advised to users only those appliances designed to operate under continuous conditions should be used in this way, and to consider where necessary the installation of non-metallic chimney liners.

## DEFRA EXEMPTION

It should be noted that bituminous coal and wood in any of its forms including pellets is not by law permitted to be burned on appliances in Smoke Control Areas, except where the appliance has been exempted under Part II (4) of the Clean Air Act, 1993.

These exempted appliances are designated thus  in this list and can be used in Smoke Control Areas when operated in accordance with the specified conditions of the exemption and burning only the specified fuels in accordance with the manufacturer's operating instructions. It is important to note that the appliances marked as Defra Exempted refers only to England. Exemption for the now devolved administrations of Wales, Scotland and Northern Ireland are subject to separate legal processes and the installer must verify the status of the exemption in relation to the country of the installation; see [www.smokecontrol.defra.gov.uk](http://www.smokecontrol.defra.gov.uk)

## HETAS ECODESIGN COMPLIANCE



HETAS have recently launched as part of this guide a way in which installers and consumers can fully recognise those appliances that meet the impending Ecodesign regulations for minimum efficiency and maximum emissions requirements as "Ecodesign Compliant". The overall aim of the scheme is to promote more energy efficient appliances and use of quality wood fuels to lower emissions and improve air quality in support of Government strategies and incentives.

Those appliances designated with the "HETAS Ecodesign Compliant" icon (*above left*) have been third party independently verified by HETAS as meeting the maximum emission limits for particulate matter (PM), organic gaseous compounds (OGC), carbon monoxide (CO), nitrogen oxides (NOx), as well as the minimum limits for seasonal efficiency. This verification of performance, along with ensuring appliance manufacturer literature and any material on public websites associated with the appliance also contain the minimum information required by Ecodesign.

HETAS Ecodesign Compliance, along with other elements of HETAS product approval and listing, allows consumers and industry stakeholders to make more informed choices on the more efficient and low emission solid fuel, wood or biomass appliances available on the market, and ensures manufacturer information and claims of performance and installation are fully backed by verified technical data and are not in contradiction to any UK industry practices, appropriate BSI standards and legal requirements contained within regulations

More information on HETAS Ecodesign compliance can be found at the HETAS website at [www.hetas.co.uk/ecodesign](http://www.hetas.co.uk/ecodesign)

## NON-APPROVED APPLIANCES

Wood, biomass and other solid fuel appliances must meet the requirements of CE Marking under the Construction Products Regulations; General Product Safety Regulations and they must be capable of being installed to meet Building Regulations requirements. Boilers must already meet Ecodesign Regulation requirements from January 2020 and stoves must comply by January 2022. It is still possible to purchase non-compliant products within EU and UK. For this reason it is important to rely on appliances that are certified or approved by a reputable assurance scheme which will have independently and impartially checked the various levels of compliance needed to give users and installers confidence that the appliance can be installed.

The HETAS product approval scheme exists to make it easier for installers to recommend appliances and for customers to choose with confidence. The scheme allows stove manufacturers to demonstrate early compliance with Ecodesign Regulation requirements where that can be robustly verified by examining notified laboratory test reports and other information about the appliances.

More information on installation and safety practices can be found in **Part 4 - Installation, Safety & Maintenance** in this guide.

# E TYPE E - ROOM HEATERS/STOVES

## INTRODUCTION

A wider range of appliance types is now available following the introduction of wood pellet appliances to the UK market place. As well as the performance information given, the icons show at a glance whether the appliance is freestanding or inset, the type of fuel the appliance is designed to burn and whether it is classed as intermittent or continuous burning, its primary air control system, its hearth suitability and if applicable its Defra exemption and/or its HETAS MCS Approved Product status.

### Application

The rated output shown against each room heater is based on the performance with a standard test fuel and doors closed under test conditions. Appliances are tested to BS EN 13240 if they are conventional room heaters/stoves burning wood logs and/or smokeless fuels and to BS EN 14785 if designed to burn mechanically fed wood pellets.

In making a preliminary selection for sizing an appliance the installer needs to consider a number of issues.

**Please Note:** Manufacturer's instructions should also be observed to see if any guidance is given for specific appliances. This method and the factors arriving at an appliance output is for guidance only and should be backed up by a site survey. Further explanation is given within the HETAS H002, Retailer and H003 training courses and *HETAS Technical Handbook*. First, from these initial points establish the minimum heat requirements for a single living room, by size and property type.

**Please Note:** This guidance is based on a 'typical' single living room with two external walls, two windows and a room above.

1. The main consideration will be the age of the property or the insulation properties.
2. The volume of the room;

### Note for modern well insulated houses\*

These will only require a small amount of heat to maintain living temperatures. The guidance figures above will in most cases still suggest an output below that which can be offered from most nominal stated outputs. Customers wishing to install solid fuel appliances in these properties should be aware that excessive heat is likely to be generated. An appliance for these circumstances should be very controllable or have good thermostatic control.

PROPERTY TYPE	APPROXIMATE ROOM VOLUME L X W X H						
	30m <sup>3</sup>	40m <sup>3</sup>	50m <sup>3</sup>	60m <sup>3</sup>	70m <sup>3</sup>	80m <sup>3</sup>	90m <sup>3</sup>
OLDER / POORLY INSULATED. TYPICALLY PRE 1950'S	3.3 kW	4.3 kW	5 kW	6 kW	6.5 kW	7.2 kW	8.1 kW
MODERATELY INSULATED PROPERTIES. TYPICALLY 1990'S	-	2.4 kW	2.8 kW	3.3 kW	3.8 kW	4.2 kW	4.6 kW
MODERN WELL INSULATED PROPERTIES*. POST 2008 CONSTRUCTION.	-	-	-	2.3 kW	2.6 kW	3.0 kW	3.2 kW

### Once this minimum heat requirement is established, the following allowances should be considered before considering a suitable output and model:

3. The appliance model, the manufacturer's claims, and recommendations by the retailer on controllability of the appliance. *Note: some appliances claiming small outputs may be able to burn large quantities of fuel generating a greater output.*
4. Consideration of further factors that will require further heat demand, such as:
  - The lifestyle of the occupiers, for example whether they prefer additional ventilation. Doubling the air changes within a room with a solid fuel appliance require approximately an additional 0.023kW/m<sup>3</sup> of heat to compensate.
  - Temperature requirements, e.g. the elderly may require warmer conditions.
  - Whether the appliance is expected to warm other parts of the house. Heat will radiate through adjacent rooms, but a dry solid fuel appliance is not specifically designed to heat the whole house.
  - Installation location; tight recesses can reduce the heat output below the manufacturer's claims.
  - Exposed property locations. Add an additional 10% for these situations.
  - Refuelling periods. The amount of fuel consumed has a direct relation on the amount of heat generated. Intermittent wood appliances typically require refuelling every 45 minutes to maintain their rated output. Larger appliances, fuelled less frequently, with good thermostatic control may provide an alternative solution, but efficiency may suffer at below normal output.

### Approved Fuels

Fuels regarded as suitable for the appliances in this section are listed, as approved closed appliance fuels, in the Manufactured Smokeless Fuels and Natural Smokeless Fuels Sections of *Part 3 - Wood, Biomass & Solid Mineral Fuels* of this Guide. Where wood logs are specified, they are to the standards given in BS EN 13240. Refer to the **Appliance Feature Icon** area for variations including wood burning and appliances that are designed to burn only specialized wood pellets as given in BS EN 14785.