

A Message from Lord Hunt of Kings Heath OBE Minister of State for the Department of Energy and Climate Change and Deputy Leader of the House of Lords

Efforts to reduce carbon emissions from residential and commercial premises is intensifying both at home and in Europe. Whilst we are considering ways to incentivise the take up of low carbon and renewable technologies we must continue the drive to improve the efficiency of the appliances we use. Implementation of the Energy Using Products Directive is reaching its final stages, with the minimum performance standard for a range of product types being agreed. These standards will be raised over time and will effect the removal of the worst performing products from the market. Product performance will be notified via an A to G labelling system similar to those for white goods. And the Energy Performance of Buildings Directive is being amended to ensure that those space and water heating appliances are installed and commissioned correctly.

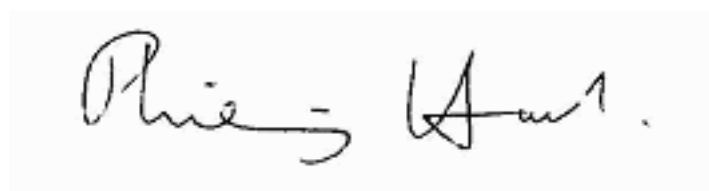
HETAS continues to make a significant contribution to these initiatives. The increased heating efficiency that will result from their work to revise the package of European Standards that underpins these Directives will substantially reduce the net emission of carbon dioxide (CO₂) from solid fuelled appliances. Their involvement in writing new standards for room-sealed appliances has also been very helpful in encouraging householders to buy and use those more energy efficient and lower carbon emission appliances, particularly those burning wood and wood products.

HETAS has achieved UKAS Accreditation under the Micro-generation Appliance Certification Scheme and has been active in developing National Occupational Standard for biofuels, leading to Installer Apprenticeships. This will ensure that there are sufficient skilled people available to install the numbers of biomass appliances that Government predicts will be needed to achieve its low carbon aims whilst creating new job opportunities for the country's young people.

If appliances are to operate at peak efficiency it is important that they are correctly and safely installed and are regularly serviced by qualified people. HETAS has been instrumental in ensuring that consumers are able to access these properly trained service providers and their Registered Installer and Approved Sweeps Schemes have overseen the installation of over 100,000 solid fuel heating systems. Nonetheless, I am pleased to learn that HETAS proposes to expand its range of training courses for industry professionals covering both conventional and biomass appliances, which will ensure even more choice for consumers. Additionally, HETAS's new Quality Assurance Scheme covering the supply of wood based products, which supplements their existing solid fuels testing and approval scheme, will help ensure the quality of all solid fuels supplied to consumers.

Notwithstanding the value of the other information contained in the HETAS Guide the provision of the product performance data is crucial if consumers are to act on the signals from Government to reduce their environmental impact. I am, therefore, pleased to note that this section of the Guide has been expanded to cover a larger range of appliances and fuels and that the information, which is certified for dwelling performance assessment purposes, can also be accessed via the HETAS website.

I am therefore happy to commend to you this HETAS Guide No 16, which contains information on the many products and services that will enable consumers to be better informed about the choice, operation and impact of the equipment and fuels they use.

A handwritten signature in black ink, reading "Philip Hunt". The signature is written in a cursive style with a large initial 'P' and a long horizontal stroke extending to the right.

Introduction by the HETAS Chairman

In the period since the last HETAS Guide was published, the drive led by Government towards a low carbon economy has accelerated. Consumers are increasingly demanding products which meet higher environmental standards. In the heating sector, industry is rising to these challenges by working to increase the efficiency of heating appliances and reduce CO₂ emissions. HETAS is central to these efforts for solid fuel, wood and biomass appliances.

The growth of interest in gaining HETAS approval is evidenced by the increased number of appliances listed in this new edition of the Guide. Our Competent Persons Self-Certification scheme for registered installers also continues to grow. Records of work undertaken by our registered installers and market information suggests that over 80% of installed appliances are capable of burning wood, a virtually carbon neutral fuel. Many of these installations are requested by consumers to displace the use of higher carbon fuel or energy sources, or to supplement their existing systems with wood burners.

As use of these fuels, appliances and associated services grows, the need for quality is paramount in order to maintain consumer confidence in this developing market. The HETAS Guide and website provide industry and consumers with access to lists of approved appliances, equipment and fuels, trained/registered installers and maintenance businesses including chimney sweeps. Our training activities are being adapted to meet the changing market and in particular the growth of biomass. We have this year introduced a new Solid Biomass Assurance Scheme to support industry and consumers in ensuring that quality fuels are available and recognisable.

Promoting and encouraging safety in use is a priority of HETAS and is central to all our work in the training and registration of engineers, the approval of appliances, advice on the setting of standards, and our close co-operation with chimney sweeps and chimney engineers' organisations. We actively support a range of safety initiatives especially those working to raise awareness of carbon monoxide. We are working towards a common investigating and reporting mechanism for incidents relating to the safety of solid fuel use.

HETAS works within the UK and across Europe taking part in and often leading standards setting activities for manufacture and installation. We are working to ensure that the growing interest in wood and other solid fuel burning equipment and fuels is matched by an equivalent focus on their safe, clean and efficient use in accordance with the relevant UK Building and Clean Air Regulations and EU standards.

The HETAS Council represents key industry stakeholders including the Solid Fuel Association, Renewable Energy Association, National Fireplace Association and other industry groups including appliance manufacturers, chimney manufacturing services and chimney sweeps' organisations. We continue to receive valued support from Government Departments especially DECC, CLG and DEFRA. HETAS also provides active support and advice to these Departments in relation to carbon saving, clean air, energy efficiency, the development of Building Regulations and other relevant areas. Our work supports that of other Governmental and non-Governmental organisations such as the Energy Saving Trust, Carbon Trust, Renewable Energy Association, and Heating and Hot Water Industry Council.

HETAS continues to grow and change to meet the needs and demands of our industry, its customers and all its stakeholders and in a rapidly developing sector. The last 18 months have seen significant change at HETAS. This next year we will continue to review our operations and services to ensure that we provide the right range and level of services and maintain our role as the industry's lead body.

My sincere thanks go to all who work with and for HETAS.

Andrew Horsler
Chairman, HETAS Ltd.
October 2009

Foreword by the Solid Fuel Association

The Solid Fuel Association is the major representative body for the domestic solid fuel industry. All the major producers, manufacturers and distributors of coal and smokeless fuels support us financially in order that we can provide a service to consumers and professionals. We also represent appliance manufacturers and at the same time provide them with a forum and relevant information to help them comply with the Building Regulations.

The role of HETAS as the industry's approvals body is very important and we work very closely with HETAS as discussions surrounding the energy efficiency requirements of heating systems progresses. We promote the competency scheme introduced in the 2002 amendments to the Building Regulations and continue to offer HETAS training schemes for installers.

As wood and biomass fuels can contribute considerably to reduce emissions of greenhouse gases, we are pleased that the role of woodburning and multi-fuel appliances in helping to achieve reductions is recognised in the New Building Regulations. However, with no shortages of supplies of indigenous and imported coals and smokeless fuels, we will continue to promote the more efficient use of these fuels and encourage innovation in product design to reduce harmful emissions. The experts in HETAS can help us along this road.



Foreword by the British Flue and Chimney Manufacturers' Association



The British Flue and Chimney Manufacturers Association (BFCMA), the oldest chimney trade association in Europe, is proud to be associated with HETAS and the Solid Fuel Industry in maintaining the highest possible standards.

The factory made chimney manufacturers, flue manufacturers, sole importers and chimney specialists who make up the Members and Associate Members of the BFCMA are the flag bearers of this industry. They are proud of their products and together with HETAS actively promote the highest quality, safety and service. Only the BFCMA members specifically highlighted in this guide in concert with HETAS, willingly give time and resources in the formulation of British and European Standards for the benefit of the consumer who expects and is entitled to the professionalism that trade associations such as the BFCMA promote.

Foreword by the Approved Coal Merchants Scheme

The Approved Coal Merchants Scheme administers the Coal Trade Code of Practice. Retail merchant members of the Scheme agree to abide by this Code which defines a basic standard of service to consumers. The Code requires members to adhere to a consumer charter.

The seven points are:

1. Supply only coal and smokeless fuel correctly described, prepared and delivered in a proper manner.
2. Advise customers which fuels are suitable for use on their appliances and comply with Clean Air Legislation.
3. Ensure that complaints will be investigated promptly and resolved to mutual satisfaction.
4. Give priority to orders as urgent on account of illness, old age or infirmity.
5. Provide a detailed price list.
6. Be insured against Public and Products Liability.
7. Abide by the Coal Trade Code.



The Scheme is funded by the coal industry, but has an independent Chairman and area panels, which can help consumers in the resolution of any disputes. Approved Coal Merchants can be identified by the blue and red logo displayed on vehicles and delivery tickets etc.

The HETAS official Guide is of great importance in ensuring that members of the Scheme can advise their customers correctly on what fuels are suitable for what appliance. It is an integral part of the Home Study Course available to all merchants and their staff.

Foreword by the National Fireplace Association

The National Fireplace Association fully supports the aims and objectives of HETAS and is proud to be a member of its Council.

With the concerns being expressed about the longevity and security of supply of some fuels, wood and solid fuel burning appliances remain a popular choice with consumers. HETAS plays a vital role in providing both the product certification and installer accreditation schemes that are essential to the continuing success of this important sector of the heating and hot water market.

The HETAS Guide No. 16 is the definitive source of information for appliances, fuels and related services and the National Fireplace Association is delighted to commend it to all readers.

Philip Malkin
Executive Director
National Fireplace Association



Foreword by the National Association of Chimney Sweeps

The National Association of Chimney Sweeps is the national trade association representing Chimney Sweeps throughout the United Kingdom. The Association is pleased to be associated with HETAS and actively supports the solid fuel trade and industry.

NACS continues its commitment to raise the standards and knowledge of professional Chimney Sweeps, to ensure that customers are well served and protected by its member services.

NACS, in conjunction with HETAS Ltd has implemented a HETAS Ltd Approved Chimney Sweep registration scheme. Registration on the scheme is available to all NACS members who have successfully undertaken a 2-day Awareness Course on solid fuel appliances and chimney maintenance. The course and course papers are independently monitored and assessed by HETAS Ltd. In addition, NACS members can then apply for registration with HETAS for competent persons status for dry back systems and the re-lining of flues for solid fuel chimneys under current Building Regulations.

NACS has been appointed an accredited body jointly by the City & Guilds/Construction Awards Alliance to administer the National Vocational Qualification (NVQ) in Chimney Engineering Level 2

NACS is able to offer through its Chimney Training Centre (CTC) a variety of training courses for Chimney Sweeps. The CTC incorporates a range of working fireplaces, appliances and chimney systems. The NACS has introduced a unique Smoke Testing Course, which covers all fuels and flues, incorporating British and European Standards and Building Regulations. The Smoke Testing Course and the NACS Certificate of Smoke Testing, Parts I and II, has been specifically designed to further promote chimney safety within the trade and is endorsed by CORGI, HETAS and OFTEC.

NACS members provide an essential service by ensuring that appliances, flue-ways and chimneys are maintained to a safe, clean and operable condition.

NACS is dedicated to the trade and public by helping to ensure that Chimney Sweeps are competent professional tradesmen.



Foreword by the Guild of Master Sweeps

The Guild; for sweeping customers

The Guild of Master Sweeps is a not for profit organisation, owned equally by its members. Our training programmes set high standards for new sweeps and further educate and inform our more experienced members. Guild customers benefit from advice on chimney and appliance safety, fuel type and efficiency as well as a high quality sweeping service. Members are required to be insured and equipped to deal with all standard job situations. High professional standards are encouraged in all aspects of members' business and the benefits of HETAS registration are strongly promoted.

The Guild; for Novice or Experienced sweeps

The Guild offers a comprehensive training and assessment process. A superb mentoring system is available to novice sweeps, essentially a mini apprenticeship. You will have an equal share and vote in an organisation dedicated to member's interests. You may use Guild logos etc. and have a listing on the Guild website. Membership includes a listing on Yell .com. You may issue Guild certificates. We are a co-operative organisation and technical and business advice is only a phone call away. Members are kept informed of Guild and industry issues through a regular newsletter and new ideas and information are quickly distributed.

The Guild is very interested in pro-active individuals who would look to lead and shape our industry.

All in all, we are the organisation of choice for professional thinking individuals who seek to make a difference in this exciting and expanding industry.



Foreword by the Association of Professional Independent Chimney Sweeps



APICS is a professional organisation, recognised by the industry, based in the South West; we nevertheless welcome sweeps throughout the country.

The aim of **APICS'** is to support, help and advise you without interfering with your independence. We are strict about the suitability of the sweeps we will accept; there is an equipment list that all sweeps should adhere to, and an assessed standard. If you are a competent sweep you should be able to meet **APICS'** standards.

We believe that all sweeps should strive to develop their skills and improve their understanding of their profession; this development will lead to a better service for the customer. To that end we always have a speaker at our General Meetings, held twice a year, which improves the general knowledge of our members.

Foreword by the National Association of Chimney Engineers



The National Association of Chimney Engineers (NACE) fully supports the work of HETAS in maintaining the highest possible standards and quality of work in the solid fuel industry.

NACE is the only trade association dedicated to the needs of the chimney engineer and their work, which covers all forms of chimney lining.

The NACE register of chimney engineers provides assurance to customers looking for comprehensive chimney surveys and testing, refurbishment and relining, commissioning and general maintenance.

Through HETAS we are proud to be associated with the many organizations working in the industry and fully support the initiatives to promote wood and biomass as the industry makes a positive move to help in the reduction of emissions of greenhouse gases.

Introductory Notes

1. GENERAL

1. This List has been prepared at the request of the Department of the Environment, Food and Rural Affairs, (previously Department of the Environment), for the guidance of local authorities and others concerned with the choice of solid fuel appliances for new houses, or as replacements in existing houses. Hetas operates under the auspices of DEFRA.

2. The List contains details of all solid fuel products currently in production and approved by HETAS Ltd. HETAS Ltd comprises representatives of the Solid Fuel Association, Gastec at CRE Ltd., the British Flue and Chimney Manufacturers' Association, the National Association of Chimney Engineers, the National Association of Chimney Sweeps, the Renewable Energy Association and the National Fireplace Association. Approval is based on British Standard specifications or well established test methods.

3. In Smoke Control Areas established under the Clean Air Act, the approval of Local Authority expenses for the payment of Exchequer contributions in respect of new solid fuel appliances will be normally conditional on selection from the List. Up to 1972 most open fires had to have 16mm spaced bottomgrates. Fires now also qualify for Clean Air Grant if they have bottomgrate air spacing of 13±2mm and most are now supplied with this spacing. Some fires, however, have retained the wider firebar spacing and can be supplied with this if it is required. The information reporting Appliance performance is made available to enable SAP and Energy Performance rating of houses.

4. The List also refers to fuels which have been tested as suitable for use with the appliances listed. Factory-made insulated chimneys are also listed which have passed British Standard or equivalent tests, not necessarily carried out by HETAS, indicating their suitability for use with solid fuel burning appliances. For the first time this year Permanent Ventilators are listed that meet accepted norms and which are essential for the safe operation of solid fuel burning combustion appliances.

5. Although HETAS Limited has taken reasonable efforts to check the information provided to it by manufacturers and has taken reasonable care in carrying out tests, HETAS Limited does not accept any liability arising from any inaccuracy in this publication or from the inclusion of any plant, equipment or fuels in any category.

2. SELECTION OF APPLIANCES

1. Specialised advice should always be sought before the selection of an appliance, to ensure that it will adequately meet the service required. At this stage consideration will need to be given to the size and construction of rooms to be heated, hot water requirements, frequency of attention to the appliance, its cost and installation charge, and its air ventilation requirement to supply sufficient combustion air.

2. Special care should be taken in selecting a multi-duty appliance, ie one providing two or more heat services such as space and water heating or cooking and water heating, to ensure that each individual heat service is adequate for its purpose.

3. It is not easy to ensure distribution of heat throughout very large rooms, of say above 100m³ capacity, and the shape of the room and positioning of the heating appliance must be carefully considered before deciding to use a single appliance, even if apparently large enough

4. Solid fuel is readily ignited by proprietary chemical fire lighters, a list of those which have passed the HETAS test is given in Part 2, or by ignition devices designed for use with the specific appliance.

5. The facility to operate an open fire appliance overnight is often required; those listed without qualifications are intended to offer this amenity. See also "Selection of Fuels" Clause 4 of these notes. The new European Standards specify the categorisation of appliances as continuous or intermittent.

6. Advice as to the choice of appliance, its correct installation, the approved fuels recommended for use on it and the ancillary equipment suitable for use with it can be obtained from the Solid Fuel Association, Registered Heating Contractors, the National Fireplace Association and the British Flue and Chimney Manufacturers Association.

3. SAFETY

Approved appliances are designed to be safe in use and have been assessed for safety and thermal performance, but it is essential to refer to the manufacturer's installation and operating instructions and also to any permanent warning label.

It is recommended that a permanent warning label along the following lines is carried by approved roomheaters however, it is not mandatory for recently approved appliances under the new BS.ENs.

WARNING

Fumes from blocked chimneys can kill.
Keep chimneys clear, sweep at least annually.
Keep throat plates and flueways clear; clean at least monthly.
Use only recommended approved fuels.
Read instruction card.

Where there is no throat plate the wording is along the following lines: Keep the flueways clear and clean at least monthly.

Chimneys and fluepipes must be swept at least annually if smokeless fuel is burned, and more often if wood and/or bituminous coal is burned.

Open fire boilers, free-standing boilers, and cookers, must have all internal flueways cleaned at least monthly.

Remember that the people in the room and also the appliance itself, need air and any draught proofing or double glazing must allow adequate ventilation as required by the Building Regulations. Further advice is given in Part 4 Section B3 Where Approved products are listed that ensure adequate ventilation for combustion air.

If, for no obvious reason, the appliance starts to burn slowly and you smell or suspect fumes, open doors and windows and put the fire out. Do not re-light the fire until the cause of the fume emission has been removed.

Approved chimney sweeps, who have been through NACS, GMS or APICS induction procedures to confirm their competency and who have attended the National Association of Chimney Sweeps course or the Hetas Solid Fuel Awareness course and passed the assessment, are listed in Part 4, Section E of this Guide. They will carry a special HETAS Approved identity card.

The names and addresses of chimney sweeps can also be obtained from coal merchants and the Solid Fuel Association, as well as from the National Association of Chimney Sweeps at Unit 15, Emerald Way, Stone Business Park, Stone, Staffs, ST15 0SR, Tel: 01785 811732

or the Guild of Master Sweeps, Head Office, The Bungalow, London Road, Attleborough, Norfolk, NR17 2DE, Tel: 01953 451322

or the Association of Professional Independent Chimney Sweeps at 1 Aldens Green, Alphington, Exeter. EX2 8TR. Tel/Fax 01392 479239

Never leave an open fire unattended without a spark guard (to BS3248) and always use a fire guard (to BS6259) when children and elderly and/or infirm people are present.

4. SELECTION OF FUELS

1. The selection of the right type and size of fuel is essential if satisfactory service from the appliance is to be ensured. For this purpose reference is made, at the heading of each section of Part 1, to the appropriate section of Part 2, listing suitable approved fuels, with any special note made in the Manufacturers' Remarks column. HETAS carries out test work for fuel manufacturers and producers which, combined with a quality assurance scheme, enables the fuel to carry a HETAS approved fuel logo for which the consumer should look.

2. Most of the appliances listed will burn a wide range of fuels, although some are designed to burn a specific type. The appropriate fuel producers or fuel distributors should be consulted to ensure that fuel suitable for the appliance and duty required is available locally before finally deciding on an appliance. Appliances which are designed to burn only wood pellets or chips require specialized fuels. The appliance manufacturer will give advice about choosing the correct fuels to use with their appliance and the storage conditions for these fuels. Use of the incorrect fuel, e.g. size and quality, will affect appliance performance and where specialised fuels are required may cause mal-operation of the appliance. Hetas is in the process of setting up with the REA a scheme for wood, wood pellets and wood chip fuels for this new range of biomass fueled appliances.

3. Smokeless fuels not listed under Approved Fuels are, from time to time, authorised for use in Smoke Control Areas. Advice on the suitability of such a fuel should be obtained from a member of the Approved Coal Merchants Scheme in the area in which that fuel is sold.

4. Generally, when burning solid smokeless fuels, up to one third more heat is obtained than when burning the same weight of house coal. This is usually reflected in coal having to be burnt at a higher rate since the same heat service is normally required by the householder.

5. In Smoke Control Areas only authorised fuels may be used except where the appliance has been exempted under Section 11 (4) of the Clean Air Act, 1956, and is specially designed to burn selected bituminous coals. Wood of any type including logs, pellets and chips is not a fuel permitted to be used in a Smoke Control Area unless it is burned in an exempted appliance which is designed to significantly reduce the smoke emitted. These exempted appliances are designated thus † in this List for easy recognition.

6. Petroleum coke is not recommended by HETAS for use on solid fuel burning appliances because its use can result in serious damage to grates and other appliance components, in the fuel bed area. However, a number of products which contain petroleum coke or are blends of petroleum coke with other fuels have been tested and approved. For these fuels approval is conditional on the manufacturer applying and maintaining stringent product control. Some appliance manufacturers restrict the use of these fuels to appliances with high chrome or chrome steel bottom grates, which may be supplied as an optional extra. This appliance manufacturer's restriction is noted in the "Remarks Column" against the appliance name in Part 1 Appliances Burning Solid Mineral Fuels. In no circumstances should HETAS Approval of such fuels be taken as implying a general approval of briquettes or blends containing petroleum coke or as giving approval of the use of petroleum coke on its own.

7. Information on selecting wood for burning in HETAS Approved wood burning appliances is given in a note in Part 2, Fuels – page 85.

5. SPECIAL FEATURES OF APPLIANCES

1. A "Manufacturers Remarks" column indicates special features and/or installation requirements and/or special fuel requirements where applicable. Again, comment will be made on whether the appliance has been shown to burn overnight and is continuous burning or is classed as intermittent.

2. Most makers offer, or can offer, chrome iron bottomgrates to improve heat resistance. The entry "Has chrome iron bottomgrate" is only made when these are supplied as standard. An accessory such as a deepening bar or deepening plate is a requirement if shown against the appliance name but is not a requirement of approval if shown as "optional extra" in the "Manufacturer's Remarks" column.

3. An open fire appliance with a suitably designed restricted throat offers an advantage in that room comfort is improved by the prevention of excessive room ventilation. This is a requirement of approval for all freestanding convector fires, but where incorporated in other appliances this is noted in the "Manufacturer's Remarks" column.

6. APPLIANCE PERFORMANCE

1. It should be appreciated that the heat output and operating efficiency of an appliance will depend upon the conditions under which it is used, and that steady burning and avoidance of "racing" will provide the best service with high reliability. With this in mind the ratings set out in the list are based on reasonable burning rates in the home. A considerable amount of useful heat additional to that shown in the List is available from the chimney serving an appliance. This can vary from as much as 9% of the input for a roomheater with high output boiler to 3% for other appliances, depending on the type of house and whether the chimney is built on an inside or an outside wall. It should be noted that where a factory made insulated chimney is used the heat passing to the house is significantly reduced and the draught applied to the appliance increased.

2. The object of rating is to ensure, as far as possible, that under normal conditions of domestic use, and burning one or other of the fuels shown as approved, the appliance will give satisfactory heat service; the outputs shown are those which it is recommended should not normally be exceeded. This Guide does not cover dimensional and constructional features which affect frequency of attention although, in general, closed and closeable appliances are intended to give the rated output with less frequent attention than the open fire type. It must be appreciated, therefore, that a direct comparison between the different categories of appliance cannot be made without further advice if all aspects of performance are to be considered.

The rated output of an appliance is based upon tests under prescribed conditions using a standard test fuel. This allows performance to be assessed under conditions which are repeatable and enables the output and performance of appliances in the same category to be compared. The Manufacturer's Remarks column gives 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 (see SELECTION OF FUELS note 4) and under changing conditions of draught.

3. HETAS APPROVED APPLIANCES MINIMUM EFFICIENCY STANDARDS

The minimum appliance efficiencies quoted below are measured at normal rated output and are on a Gross CV basis. They are not seasonal efficiencies. The majority of appliances listed in the HETAS Guide have efficiencies well above these minimum, pass mark, values. There is also

evidence to show that with solid fuel appliances efficiency does not fall off greatly as the output of the appliance reduces. Additional useful heat, which is not included in these minimum values, can be available from the chimney and fireplace particularly if the chimney is centrally placed and enclosed in the building structure.

Testing has, until recently, been carried out to British Standards (BSS) using an appropriate standard test fuel. It is against these earlier BSS that most of the appliances listed in this Guide have been tested. After 1st January 2003 Type Testing is now carried out to the relevant BS ENs. These new European Standards now adopted as British Standards are as follows:- Independent boilers BS EN 12809; or when wood pellets fired to BS EN 14785 or BS EN 303-5; Cookers BS EN 12815; Roomheaters BS EN 13240; or when wood pellets fired to BS EN 14785; Open Fires BS EN 13229.

The standard test fuels used are representative of those DEFRA Authorised Fuels which can be used in Smoke Control Areas (SCAs). Bituminous Housecoal, Wood Logs and Wood Pellets are not permitted to be used in SCAs unless they are burned in specially designed, smoke reducing, DEFRA Exempted Appliances. The minimum efficiency pass values that are listed below are under review with the intent of raising them further.

OPEN FIRES

Simple Open Fire – 37% (Radiation only)
Open Fire Freestanding Convector – 47%
Open Fire Inset Convector – 45% mineral fuel, 43% wood
Open Fire with domestic hot water boiler - 50%
Open Fire with high output boiler – Trapezium or rectangular grate – 63%

Notes. The standard test fuel used for open fires is a reactive smokeless fuel and/or wood logs as specified in the appropriate BS EN. Additionally, heat is given out from the appliance by convection and conduction which provides added heat to that measured in the earlier BS tests on which these minimum figures are based.

ROOMHEATERS/STOVES

Roomheater without boiler – 65%
Roomheater with boiler – 67%
Note. The standard test fuel for Roomheaters is an anthracite based briquette and/or wood logs.
Pellet Fired Stoves without boiler – 70% (at nominal load), 65% (at part load).
Pellet Fired Stove with boiler – 75% (at nominal load), 70% (at part load)

Note. The standard test fuel for Pellet Fired Stoves is a low ash content high quality wood pellet as specified in the appropriate BS EN.

COOKERS

Cooker with integral oven and boiler – 65% mineral fuel, 55% wood logs.
Notes. The test fuel for cookers is an anthracite based briquette as specified in the appropriate BS EN.

INDEPENDENT BOILERS

Hand Fired Batch Fed – 65%
Note. The test fuel for hand fired independent boilers is an anthracite based briquette and/or wood logs.
Gravity Feed (up to 20.5 kW) – 70%
Gravity Feed (above 20.5 kW) – 75%
Note. The test fuel for Gravity Feed boilers is a grain or bean sized low ash content anthracite as specified in the appropriate BS EN.
Automatic Feed fired by wood pellets/chips – 75% (at nominal load), 70% (at part load).
Note. The standard test fuel for Pellet Fired Boilers is a low ash content high quality wood pellet/chips as specified in the appropriate BS EN.

4. HETAS MEASURED EFFICIENCIES FOR INDIVIDUAL APPLIANCES

The individual appliance gross efficiencies, measured at rated output, are shown against each appliance where relevant, in the tables of Part 1 "Appliances Burning Solid Mineral Fuels and Wood". They have been measured using the relevant BSS or BS EN standard burning the appropriate test fuel, which is representative of the fuels recommended by the appliance manufacturer.

5. Details of appliance construction and performance are given in the appliance manufacturers' leaflet.

7. INSTALLATION OF APPLIANCES

1. The performance of an approved appliance may be impaired by its incorrect installation and/or the faulty construction of the house or chimney, but will not in general be affected by the choice of surround and the finish of the appliance, provided dimensional and constructional requirements are complied with.

2. The approved appliances in this Guide give the best service only when installed to makers' instructions and when burning an approved fuel. Attention is drawn to the Building Regulations and any local bye-laws affecting installation. HETAS Ltd. in conjunction with the Solid Fuel Association has introduced a Registration Scheme for Engineers and Companies working in the Domestic Solid Fuel Market. For details of the Registration Scheme and Registered Engineers and Companies see Part 4, Section C of this Guide.

3. For an effective and economical hot water service, particularly with multi-duty appliances, the system should be compact and adequately insulated. The capacity of the cylinder, together with size and length of piping, should comply with that specified by the manufacturers. The use of indirect systems in which the primary and secondary waters do not mix is recommended for domestic hot water supply irrespective of the type of water, and is a necessity with certain designs of boiler, and always where radiators are served. As a general guide, it is common to allow an output of 1 kW for an "average" radiator.

4. **Where it is not possible to sweep the chimney through the appliance alternative facilities must be provided for this purpose.**

5. A number of open fires, both inset and freestanding, and all roomheaters provide for heating by convected air in addition to radiation from the fuel bed. Where the appliance is not fully freestanding or provided with its own convection jacket and grills, the installer must make

provision for convection air space and for the inlet and outlet of convected air according to the manufacturer's instructions. In most cases, it is essential to return the convected air into the room in which the appliance is installed in order to ensure adequate warmth. The necessity for such provision should always be considered before any decision is taken to duct the convected warm air to another room.

6. There can be no general ruling for the installation of fires with underfloor primary air supply but for successful working there must be a flow of air into the undergrate space when the fire is alight. Each installation requires individual consideration and the manufacturer's recommendations should be closely followed particularly with regard to the air inlet ducting. The height of fireplace opening should be that recommended by the manufacturer, and the room itself should be of reasonable airtight construction (See SAFETY, Note 3).

The following publications on installation may be consulted:

DEPARTMENT OF THE ENVIRONMENT, FOOD AND RURAL AFFAIRS, (previously Department of the Environment), ADVISORY LEAFLETS Nos. 30 (open fires); 31 (closed appliances); 50 (chimneys) (H.M. Stationery Office),

The following British Standard Codes of Practice describe installation methods conforming to good modern practice:

INSTALLATION OF DOMESTIC HEATING AND COOKING APPLIANCES BURNING SOLID MINERAL FUELS - BS8303.

CENTRAL HEATING FOR DOMESTIC PREMISES - BS5449 PART 1, soon to be superseded by BS.EN12828.

INSTALLATION OF CHIMNEYS AND FLUES FOR DOMESTIC APPLIANCES BURNING SOLID FUEL - BS6461 PART 1 Code of practice for masonry chimneys and flue pipes and BS7566 Parts 1-4 Installation of factory-made chimneys to BS4543 for domestic appliances.

FROST PRECAUTIONS FOR WATER SERVICES CP99.

These Codes of Practice are obtainable from the British Standards Institution, Sales Department, 389 Chiswick High Road, London W4 4AL.

7. A chimney plays an essential role in the safe and efficient use of solid fuel heating appliances. A chimney also provides natural ventilation that helps to keep a healthy atmosphere in the home and protect the fabric of the house by reducing the risk of condensation. Reference should be made to the appropriate British Standard Codes of Practice and Department of Environment Publications to ensure the correct construction of a chimney.

The use of modern materials and manufacturing methods has meant that factory made systems can offer high performance and ease of installation. Whether you want to build, renovate or reline a chimney there is a wide choice of factory made chimney and flue lining systems available from members of the BFCMA. Cast In-situ concrete lining systems may be used to line or reline existing chimneys which will usually be of masonry construction. Under Building Regulations this is permitted "where the material and installation procedures are independently certified as suitable for use with solid fuel burning appliances". HETAS has Approved the Cast In-situ materials used and system operated by NACE under its HETAS Approved and supervised Code of Practice and lists the CICO system which has been approved by an Independent Test Laboratory. Details of these are given in Part 3 of this Guide.

8. APPROVAL STATUS OF INSTALLED APPLIANCES

HETAS Ltd approval of appliances consists of assessment of a type test report from a Notified Laboratory to the relevant BSEN supported by the manufacturer's production control, followed by periodic surveillance of the product as appropriate. HETAS Ltd also checks manufacturers Installation and Operating Instructions to confirm that they meet UK Building Regulations and conform to UK practice. While the appliance remains in the Guide, this surveillance continues, to ensure that the product remains the same as the original unit tested.

Any solid fuel appliance that was approved at the time of manufacture, and which was subsequently installed, maintains its approved status even if at a later date the model is removed from the Guide.

New units of the model, produced after removal from the Guide are, however, not approved as they will have been produced at a time when the product surveillance by HETAS Ltd had ceased. It would not, therefore, be possible to ensure that the new units were the same as the unit originally tested.

HETAS Ltd approval applies to the original manufacturer of a product and his nominated agents only.

9. COMPILATION OF THE GUIDE

HETAS Ltd. compiles the 'Guide'. Every care has been taken to render the 'Guide' as accurate as possible, but HETAS Ltd. cannot accept any responsibility for any loss or damage which may arise or result from errors or omissions. The contents of the 'Guide' relate to the latest information available to HETAS Ltd. at the time of going to print. The order in which products or services are listed is in no way indicative of their relative merits.

HETAS is the acronym for the Heating Equipment Testing and Approval Scheme which is the independent UK body recognised by the Department for Environment, Food and Rural Affairs for the official testing and approval of domestic solid fuels, solid fuel burning appliances and associated equipment and services.

HETAS Ltd. is a company, without share capital, limited by guarantees and governed by a Council, the equivalent to a Board of Directors, which makes policy and supervises the running of the company and the operation of the Scheme.

HETAS Ltd's member bodies are the following organisations:

British Flue and Chimney Manufacturer's Association

Gastec at CRE Ltd.

Department for Environment, Food and Rural Affairs

National Association of Chimney Engineers

National Association of Chimney Sweeps

National Fireplace Association

Renewable Energy Association

Solid Fuel Association

British or European Standards are used in the assessment of products for Approval, together with supplementary established test methods where required.

10. HETAS Ltd. WEBSITE (www.hetas.co.uk)

This HETAS Ltd Official Guide to Approved Solid Fuel Products and Services is available on the HETAS Ltd. Website. The website is regularly updated. Of special interest is the list of Registered Heating Engineers as part of the Competent Persons Scheme who are able to self certify that the installations they carry out meet Building Regulations..