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## 1. Introduction

This scheme document identifies the evaluation and assessment practices for the purposes of certification and listing of solid biomass fired heating systems. Certification and listing of products is based on evidence acceptable to the certification body:-

- that the product meets the appropriate standards listed below
- that the manufacturer has staff, processes and systems in place to ensure that the product delivered meets the standard

and on:-

- periodic audits of the manufacturer including testing as appropriate
- compliance with the contract with the certification body for listing and approval including agreement to rectify faults as appropriate.

This document has been approved by the Steering Group of the Microgeneration Certification Scheme.

This document has been prepared by the Microgeneration Certification Scheme Working Group 5 'biomass'.

## 2. Scope

This scheme provides ongoing independent, third party assessment and approval of companies who wish to demonstrate that their solid biomass fired heating appliance with nominal heat output up to 45 kW meets and continues to meet the requirements of:

- BS EN 13240:2001+A2:2004 - Room heaters fired by solid fuel. Requirements and test methods

Or

- BS EN 14785:2006 - Residential space heating appliances fired by wood pellets. Requirements and test methods. This can be used for boilers and roomheaters in and out of living space.

Or

- BS EN 12809:2001+A1:2004 - Residential independent boilers fired by solid fuel. Nominal heat output up to 50 kW Requirements and test methods

Or

BS EN 303-5:1999 Heating boilers - Part 5: Heating boilers with forced draft burners. Heating boilers for solid fuels, hand and automatically fired, nominal heat output of up to 300kW. Terminology, requirements, testing and marking.

And

- The performance and emission criteria detailed in Clause 7

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If the solid biomass fired heating appliance is to be installed within a smoke control area ([www.uksmokecontrolareas.co.uk](http://www.uksmokecontrolareas.co.uk)) it must be exempt under section 21 of the Clean Air Act 1993. The listing of a solid fuel appliance within the MCS does NOT confer exempt appliances status.

#### European Directives and labelling

Boilers should be labelled with the CE mark to signal the manufacturer's declaration that the product meets the essential requirements of the applicable European Directives.

The directives applying to a particular solid wood-fired boiler will depend upon its design. However, for information, the following Directives are those that are likely to be relevant:

- Machinery Directive, e.g. boilers with automatic stoking
- Construction Products Directive (CPD), boilers with a rating of less than 50kW
- Pressure Equipment Directive (PED), boilers forming part of sealed systems (CE marking under this directive only applies above certain pressure and volume minima)
- Low Voltage Directive (LVD) and Electromagnetic Compatibility Directive (EMC), boilers fitted with electrical equipment

#### 3. Applications to join the Scheme

Applications should be made to an accredited certification body operating this scheme, who will provide the appropriate application form and details of the applicable fees.

#### 4. Management Systems Certification

Manufacturers shall operate a certified documented manufacturing quality control system, in line with the requirements of MCS 010 "Generic Factory Production Control Requirements"


#### 5. Certification and approval

Certification and approval is based on the following:

- a. Evidence of compliance with one or more of the standards listed in the scope and the performance and emission criteria detailed in Clause 7.

Evidence of compliance is generally accepted as independent third party testing by a UKAS (or equivalent) accredited test laboratory. However, other evidence of compliance may be considered at the discretion of the certification body (see document MCS 011 'Testing acceptance criteria').

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b. Verification of the establishment and maintenance of the manufacturing company's quality management system in accordance with the Factory Production Control requirements (FPC) (see MCS 010).

c. Review of the technical documentation relating to the material or product

Applications for a range of common products (product families) will be dealt with on a case by case basis in accordance with MCS 011 Clause 2.4. For example, where one or more characteristics are the same for products with similar design, construction and functionality then the results of tests for these characteristics on one product may be applied to other similar products

A certificate is awarded following demonstration of satisfactory compliance with the appropriate standard and this scheme document, taking into account any limitations imposed by the standard and other appropriate guidelines and satisfactory verification/assessment of the manufacturer's Factory Production Control and technical documentation.

Certificates contain the name and address of the manufacturer, model and reference number of the biomass system, a unique certificate reference number and the issue number and date.

Certificates are valid from the date of issue and are maintained and held in force subject to satisfactory completion of the requirements for maintenance of certification (see item 8), but remain the property of the issuing certification body.

Details of the manufacturer and the certificated product(s) are listed on the Green Book website at [www.greenbooklive.com](http://www.greenbooklive.com).

## 6. Technical documentation

Technical documentation for the product must be submitted for review. This documentation shall be presented in English and shall be such that it can be assured that the products submitted for test are equivalent to those that are to be manufactured for normal production. The documentation must consist of the following as a minimum;



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- a. Details of intended use, application and classifications (if any) required,
- b. Manufacturing drawings and/or specifications including tolerances, issue and revision numbers.
- c. The revision number of the product.
- d. Raw material and components specifications.
- e. Details of the quality plan applied during manufacture to ensure ongoing compliance.
- f. Where historical test data is requested to be considered for the application, full test report and details of any existing approvals (Note: each application will be dealt with on a case by case basis and further information about the acceptance of previous testing is available on request).
- g. Installation, use and maintenance instructions.

#### 7. Performance Criteria

For compliance with this scheme, biomass systems must be optimised for heating and must achieve the following minimum efficiency and emissions when tested by an independent test body (please refer to document MCS 011) and in accordance with the appropriate British Standards (see section 5):

##### 7.1 Efficiency

###### ***Solid biomass fired stoves***

Solid biomass stoves shall achieve Class 1 rating when tested in accordance with BS EN 13240:2001+A2:2004 (using logs or pellets up to 15kW) or 75% efficiency at Full Load or 70% at Part Load when tested in accordance with BS EN14785:2006 (for pellets stoves, room heaters and indirect wet systems up to 50kW)

###### ***Solid biomass fired boilers (up to 50kW)***

Solid biomass fired boilers when tested according to BS EN 12809:2001+A1:2004 shall achieve an efficiency in accordance with Figure 1, of that standard, relative to its nominal heat output (i.e. from 65% at 5kW up to 70% at 50kW net efficiency) or when tested according to BS EN 303-5:1999 (for boilers operating on sealed systems) shall achieve an efficiency in accordance to class 2 in figure 1, of that standard, (i.e.  $57 + 6 \log$  Nominal Heat Output).



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## 7.2 Emissions

### ***Solid biomass fired stoves***

UK legislation is currently based on particulate emissions only but levels of carbon monoxide (CO) emissions when tested according to BS EN 13240:2001+A2:2004 (using logs or pellets up to 15kW) and its proposed amendments shall meet Class 2 rating. When tested in accordance to BS EN14785:2006 (for pellets stoves, room heaters and indirect wet systems up to 50kW) the mean CO concentration calculated for 13% Oxygen content in the flue gas (mean of at least two results) shall not exceed 500mg/m<sup>3</sup> Full Load, 750 mg/m<sup>3</sup> Part Load. Also see section 2 for installations within Smoke Controlled Areas.

### ***Solid biomass fired boilers (up to 50kW)***

Shall achieve at least the Class 3 emissions standard of BS EN 303-5:1999 when tested with an appropriate fuel, with visible smoke not exceeding Ringlemann 2. When tested in accordance to BS EN12809:2001+A1:2004 the mean CO concentration calculated for 13% Oxygen content in the flue gas shall be less than or equal to the manufacturer's declared value or shall not exceed 1.0%. Also see section 2 for installations within Smoke Controlled Areas.

## 8. Maintenance of certification and listing

Certificates and listing are maintained and held in force subject to satisfactory completion of the following requirements for maintenance of certification:


### 8.1 Factory audits

Certification is maintained through on-going FPC quality system audits as appropriate, during which time a detailed check will be made that the product being manufactured is the same as the specification tested.

### 8.2 Product audits

Product audits will be conducted as follows:

- 8.2.1 review of the product technical data files including materials
- 8.2.2 review of end of line tests in accordance with the manufacturer's quality plan
- 8.2.3 repeat testing of elements from the product standard as appropriate to confirm that the product continues to meet the requirements for certification and listing

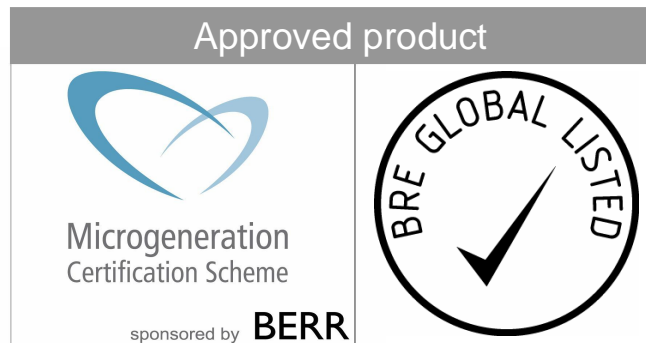
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## 9. Certification Mark and labelling

All approved products listed under this scheme shall be marked with a label to confirm that the product has been tested and certificated in accordance with the requirements of this scheme document. See below for details.

The manufacturer shall use certification mark(s) only in accordance with the certification body's instructions.


An example of a certification mark that can be used for this scheme is as follows:



Certificate No. XXX, approved to MCS 008

Where "XXX" is the certificate number and the logo of the certification body issuing the certification would sit where the BRE Certification Limited mark is shown.

Companies may only use the mark while the certification is maintained.

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## REVISION OF MICROGENERATION CERTIFICATION SCHEME (MCS) SCHEME REQUIREMENTS

Microgeneration Certification Scheme (MCS) scheme requirements will be revised by issue of revised editions or amendments. Details will be posted on our website at <http://www.microgenerationcertification.eu/>

Technical or other changes which affect the requirements for the approval or certification of the product or service will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments.

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

Users of this standard should ensure that they possess the latest issue and all amendments.

### AMENDMENTS ISSUED SINCE PUBLICATION

DOCUMENT NO.	AMENDMENT DETAILS	DATE