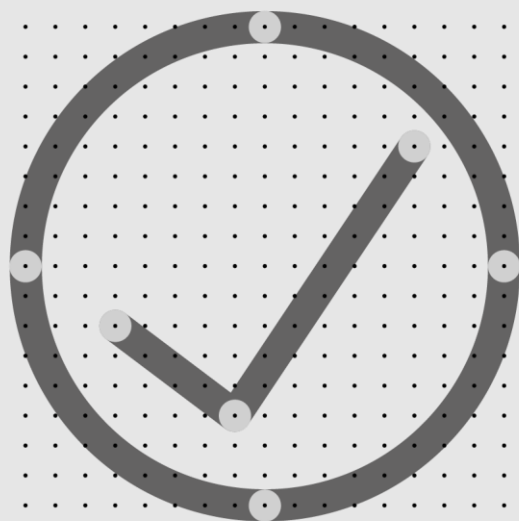


Planned and Preventative Maintenance of Biomass Appliances – Requirements for Maintenance Engineers carrying out Maintenance Activities

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Giving you confidence in home-grown energy

With energy costs constantly rising and climate change affecting us all, low-carbon technology has a bigger and bigger role to play in the future of UK energy.

We're here to ensure it's a positive one.

Working with industry we define, maintain and improve quality – certifying products and installers so people can have confidence in the low-carbon technology they invest in. From solar and wind, to heat pumps, biomass and battery storage, we want to inspire a new generation of home-grown energy, fit for the needs of every UK home and community.

About

The Microgeneration Certification Scheme Service Company Ltd (MCSSCo Ltd) trades as MCS and is wholly owned by the non-profit MCS Charitable Foundation. Since 2007, MCS has become the recognised Standard for UK products and their installation in the small-scale renewables sector.

We create and maintain standards that allow for the certification of products, installers and their installations. Associated with these standards is the certification scheme, run on behalf of MCS by Certification Bodies who hold UKAS accreditation to ISO 17065.

MCS certifies low-carbon products and installations used to produce electricity and heat from renewable sources. It is a mark of quality. Membership of MCS demonstrates adherence to these recognised industry standards; highlighting quality, competency and compliance.

Vision

To see MCS certified products and installations in every UK home and community.

Mission

To give people confidence in low-carbon energy technology by defining, maintaining and improving quality.

Values

1. We are expert – ensuring quality through robust technical knowledge
2. We are inspiring – helping to reshape energy in UK homes and communities
3. We are collaborative – working with industry and government to create positive change
4. We are principled – operating in a way that's clear, open and fair
5. We are determined – supporting the UK's drive towards a clean energy future

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When MCS Standards are revised, the issue number is also revised to indicate the nature of the changes. This can either be a whole new issue or an amendment to the current issue. Details will be posted on the website at www.mcscertified.com

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The issue number is given on the left of the decimal point, and the amendment number on the right. For example, issue 3.2 indicates that it is the third significant version of the document which has had two sets of minor amendments.

Users of this Standard should ensure that they are using the latest issue.

Issue No.	Amendment Details	Date
1.0	First Publication	30.06.2021

FOREWORD

The aim of this Standard is to encourage the maintenance of Biomass appliances. Poorly maintained appliances are known to emit particulates that damage air quality. The Department for Business, Energy and Industrial Strategy (BEIS) research paper delivered by KIWA and published in 2019 into the 'measurement of the in-situ performance of solid biomass boilers', identified that a lack of operator knowledge and boiler maintenance as the primary reasons for poor Biomass Boiler operation and associated emissions.

The development of this Standard will recognise competent maintenance businesses that can carry out manufacturers' required appliance maintenance and raise the importance to burn the correct fuel. An effective and more efficient appliance performance will increase efficiency and reduce the levels of emission released.

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1 SCOPE

This Standard sets out the requirements for maintenance businesses providing planned and preventative maintenance (PPM) as scheduled by the appliance manufacturer.

There will also be a requirement for routine non-PPM maintenance and the maintenance of the connected heating system and its components. Those requirements are not covered under this Standard but may be considered as part of the service offered by the maintenance business.

Under this Standard maintenance engineers will be able to meet the requirements placed on RHI recipients to prove their RHI funded appliance is maintained. The Standard will be developed as required to meet any further biomass grant aided schemes.

The Standard considers the broad range of biomass appliance types and output capacity. It recognises maintenance businesses that may only provide maintenance services within a specific range of competence, such as limitations to appliance models / manufacturers or limitations to installation size / complexity.

Competence shall be covered under 4 installation categories:

- Domestic Installations
- Small Non-domestic Installations (<200kW)
- Medium Non-domestic Installations (200 to 1,000kW)
- Large Non-domestic Installations (1,000+kW)

The Standard recognises the categories of maintenance offered based on the demonstrated competence of the business, for example this may limit maintenance offered to defined categories such as:

- Individual appliance manufacturers / models
- Appliance types (for example pellet only or walking floor fuel systems)
- Installation or appliance output ranges
- Domestic / small commercial
- LTHW and steam systems

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2 DEFINITIONS AND NORMATIVE REFERENCE

DEFINITIONS

MTC	Minimum Technical Competence.
RHI	Renewable Heat Incentive. A Government incentive scheme for domestic and non-domestic installations.
BEIS	The Department for Business, Energy & Industrial Strategy.
Ofgem	The RHI scheme administrator.
Commissioning	The advancement of an installation from the state of setting to work of an installation, the regulation of the system and the fine tuning of the static completion to full working order to the specified requirements.
Biomass	<p>From a scientific and technical point of view, material of biological origin excluding material embedded in geological formations and/or transformed to fossil.</p> <p>NOTE 1 - Biomass is defined in legal documents in many different ways according to the scope and goal of the respective documents (e.g. Directive 2001/77/EC of the European Parliament and the Council; Commission Decision (2007/589/EC) of 18 July 2007). This definition does not contradict legal definitions.</p> <p>NOTE 2 - See also <i>herbaceous biomass</i>, <i>fruit biomass</i>, and <i>woody biomass</i>.</p>
EC	<u>Emissions Certificate</u>
PPM	<p>Planned and Preventative Maintenance covered under this Standard.</p> <p>Typically, an annual service, or a period specified by the manufacturer, to fully service appliances for optimum operation.</p>
Non-PPM Maintenance	<p>Routine operating maintenance as described by the manufacturer, including routine cleaning and ash removal. This is usually either undertaken by either the client or service provider.</p>

NORMATIVE REFERENCES

The following documents are useful for further reference for the application of this Standard:

- EN 14588:2010, Solid biofuels - Terminology, definitions and descriptions
- BS EN ISO 17225 Series, Solid biofuels -Fuel specifications and classes – parts 1 to 5
- ÖNORM M7 133 Wood Chip – Withdrawn but still recognised
- BS EN 303-5: 2012 – Heating Boilers – Terminology, requirements, testing and marking
- Woodsure.co.uk
- [Biomass Suppliers List \(BSL\)](#)
- [30663-P3-1 / BEIS Measurement of the in-situ performance of solid biomass boilers; Kiwa Ltd.](#)
- [Ofgem guidance - Volume 2: Ongoing obligations and payments](#)
- [MIS 3004 – Biomass Installation Standard](#)
- [MGD 006 – MCS Percussive Events Guidance](#)
- [RHI Emission Certificate list](#)
- [CIBSE AM15 – Biomass Heating](#)

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3 REQUIREMENTS FOR THE MAINTENANCE BUSINESS

3.1 QUALITY MANAGEMENT SYSTEM

- 3.1.1 The maintenance business must have in place a maintained and documented Quality Management System proportionate with the needs of the business maintenance activities and as a minimum, detail how the requirements of the relevant activities detailed below are met.

There may be additional contractual requirements by the client for additional management systems.

- Limitations of the Maintenance Business
- Management of Subcontractors
- Maintenance Contracts
- Document control
- Test and Measurement Equipment
- Complaints
- Health and Safety

- 3.1.2 Limitations of the Maintenance Business

The maintenance business must recognise the scope of competence and capability of the business within the categories of PPM defined under this Standard.

The combined competence of the maintenance business will be the collective of the registered maintenance engineers (employed and contracted). Each will hold appropriate core technical qualifications or provide aligned knowledge through experience.

- 3.1.3 Management of Subcontractors

Where the registered maintenance business uses subcontractors there must be a process in place to validate their competence and ensure that their part in meeting the Standard is met. There must be a sub-contract agreement in place agreed by both parties recognising the requirements of this Standard.

The registered maintenance business assumes responsibility for the work undertaken by the subcontractor and for the maintenance report (see section 6.1.1) if that is provided by the subcontractor.

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3.1.4 Maintenance Contracts

The extent of any maintenance or contractual requirements will likely depend on the complexity and size of the system.

For routine PPM in domestic properties, a formal and fair written contract is required setting out the terms of the agreement and that the service will meet the requirements of the Standard. The detail of maintenance activities carried out, and where relevant, the confirmation of manufacturers PPM scheduled maintenance must be recorded.

NOTE: A model contract template for domestic consumers is available on the MCS, HETAS and RECC websites.

For commercial systems and service agreements a formal business to business contract may be required as part of the agreement. The extent of any agreement should be agreed by both parties.

3.1.5 Document Control

The maintenance business shall manage or have access to relevant standards, appliance instructions defining the PPM required, guidance etc. to ensure relevant information is available to perform a thorough maintenance activity.

A copy of any PPM carried out, or maintenance contract must be retained for at least 6 years.

A record of the PPM activity will be provided (see section 3.2.1 and 6.1.1).

Records to be kept relevant to the Quality Management System include:

- Records of calibration of testing equipment, including software if used
- Formal evidence of engineer competence including assessed experience or qualifications (See section 5)
- Complaint records
- Sub-contract agreements

3.1.6 Test and Measurement Equipment

Any test and measuring equipment used must be maintained in good condition and records of calibration kept.

3.1.7 Complaints

The maintenance business must have a written procedure for managing complaints and shall keep records of any complaint received (justified or otherwise), including the actions taken to satisfy the complaint.

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3.1.8 Health and Safety

The requirements for Health and Safety are not covered by this Standard, but maintenance businesses must declare they are meeting any regulatory requirements appropriate for the size of the business.

3.2 REGULATION OR GRANT FUNDING REQUIREMENTS

3.2.1 For RHI and other Government funded incentives that require proof of maintenance, the registered maintenance business shall provide evidence of maintenance to their clients which details any PPM carried out.

3.3 DOMESTIC CONSUMER PROTECTION

3.3.1 A contract for maintenance shall be entered into between the maintenance business and the customer. Contracts or order documents should be clear, written in plain English and any exclusions of liability must be highlighted.

3.3.2 A maintenance business must have appropriate insurance to cover potential liabilities to customers or third-party damage, which may be caused their maintenance activities. The insurance must be adequate to cover all liabilities which might reasonably be expected to arise from their activities.

3.3.3 The maintenance business shall comply with the following when dealing with domestic customers:

- Customers shall be treated fairly and with respect. Additional precautions should be taken when dealing with customers who may be considered vulnerable.
- Sales agents shall not place customers under pressure to sign orders or contracts at any meeting in the customer's home by, for example, overstaying their welcome or offering excessive discounts off inflated prices.
- All claims made in relation to the delivery and benefits of maintenance in marketing material (including website and company brochures) shall be based on a reputable source and verifiable.
- Manufacturer's guarantees associated with any replacement parts resulting from maintenance are to be made available to the consumer, where possible.
- Comply with all relevant consumer protection legislation currently in force. Particular attention is drawn to the Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013 and The Consumer Rights Act 2015.

4 MAINTENANCE

4.1 MAINTENANCE ACTIVITY

- 4.1.1 Compliance with this Standard only considers PPM activity to meet the service requirements specified by the appliance manufacturer for the biomass appliance equipment only (i.e. the biomass appliance, integral control panel and fuel feed system)
- 4.1.2 The maintenance engineer may suggest additional maintenance, repair or adjustment of controls to improve appliance performance with consideration of any intelligence gained from:
- Operational discussion with the appliance operator or appliance owner, especially where the opportunity to observe the appliance in operation is not feasible
 - Any previous maintenance records
 - The original handover documents and the expected performance given
 - Interrogation of system control and captured performance data including fault codes
 - Fuel being burnt against the fuel required (See manufacturer's instructions and or the Emission certificate)

4.2 ANNUAL PLANNED AND PREVENTATIVE MAINTENANCE

- 4.2.1 The maintenance engineer shall be competent to maintain the appliance being worked upon. When carrying out maintenance, reference to manufacturers routine PPM requirements, including schedules of maintenance, records kept, and measurements made/checked shall be verified against manufacturers guidance and recorded. In the absence of manufacturers own prescribed maintenance records, the engineer shall have their own maintenance record verifying checks and actions taken.

An example maintenance checklist is available in Appendix A recognising key appliance PPM checks, and safe operation requirements.

- 4.2.2 Once maintenance is complete a record of PPM shall be provided.

NOTE: Any feedback that could improve efficiency or effective operation may be given.

- 4.2.3 Additional routine maintenance including cleaning is likely to be required, which may be carried out by the appliance owner or operator. Such requirements are not covered under this Standard and may not be covered by any annual agreement under this Standard. Owners should make the necessary arrangements to comply with manufacturers' instructions.

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5 ROLE AND COMPETENCY REQUIREMENTS

5.1 The maintenance business must specify a named individual, the nominee, who will be the main point of contact in relation to this Standard. The business shall recognise who is responsible for the key roles within the business including:

- The nominee who is the main contact in relation to this Standard
- The administration of formal quality system procedures, including management of contracts, reporting, and managing complaints
- The competent maintenance engineer(s), and their qualifications

Dependant on the size of the business this could be the same person. Where roles are covered by multiply employees, or sub-contractors, individual responsibilities will be recorded.

Identified maintenance engineers will be assessed as competent for the work they can do. Core knowledge of plumbing and heating can be verified by formal qualification, or the assessment of experience, or prior knowledge.

There is an expectation that certain appliance manufacturers will require the attendance of their own manufacturer training before maintaining their appliances. When this has been undertaken, records of the assessment and manufacturers training should be recorded.

The maintenance business will list the areas of their combined competence, listing limitations to individual appliance manufacturers, models, system controls and the extent of complex systems. The registered competence will be summarised on the consumer search facility looking for maintenance businesses.

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6 HANDOVER AND REPORTING

6.1 REPORTING AND ISSUING FINDINGS

- 6.1.1 Following PPM, the business shall issue the appliance owner with a maintenance report (digital or hard copy) of confirmation of manufacturers PPM outcome, including any actions or improvements noted if appropriate.

An example service report is available in Appendix A.

6.2 ISSUING WARNING AND FAULTS IDENTIFIED

- 6.2.1 Appliances should be left safe and in a satisfactory working operation. Where appliance safety issues or faults affecting safe operation are found these should be assessed and reported to the appliance owner. The HETAS HUSP procedure can be adopted as a means to determine risk and outcome.

Where there is an unsafe situation a warning to the operator must be issued.

6.3 OFGEM NOTIFICATION

- 6.3.1 For the purpose of Government funded incentives such as RHI, details of the appliance PPM activity must be provided to the consumer who is the recipient of RHI Payments. This ensures that the consumer can provide evidence of PPM activity to Ofgem to satisfy payment obligations if requested.

APPENDIX A – EXAMPLE MAINTENANCE CHECKLIST / SERVICE REPORT

Date of Service:
Boiler Type:
Name of Engineer:
Start Time:
End Time:

REQUIRED CHECKS	PASS	FAIL	COMMENTS
Damage to Grate or Refractory Material Surrounding Combustion Chamber			
Wear to Biomass Appliance and Components			
Cleaning of Components			
Doors / Lids / Seals / Gaskets			
Lining / Insulation / Fire Bricks			
System Water Content / Levels			
Condensation Drains			
Motors & Gearing			
Flue & Draught Regulator			
Air Pressure			
Air Inlets / Vents			
Flue / Chimney / Flue Pipe / Gasket / Fans			
Fuel Store			
Heat Exchanger			
Heat Exchanger Cleaning Mechanism			
Flue Gas Temperature Sensor			
Lambda Sensor			
Combustion Controller (pcb)			
Air Filtration System / Filters			
Unburnt Material or Clinker Removed			
Mechanical Components Lubricated			
Extraction Systems			
Burn Back Flaps & Fire Protection Features			
Leaks (Gas or Water)			
Ignition / Igniter			
Boiler Settings / Controls			
Flue Gas Reading - Must be taken once the system is running in normal heating mode			
Safety Valves / Pressure Relief Valves			
Other Valves (Fuel / Water)?			
Wood Pellet:			
Fuel Supply System - Suction and Drive Feed Systems			

Automatic Ignition System			
Automatic Heat Exchanger / Flue Cleaning Mechanism			
Automatic Ash Removal System			
Combustion Air Fan (Forced Draught and Induced Draught)			
Log:			
Ash Boxes / Ash Removal			
Fire Bed / Combustion Chambers			
Primary / Secondary Air Control			
Air Supply (Suction) Fan			
Flue Gas Exhaust Control			

APPLIANCE MAINTAINED IN ACCORDANCE
WITH THE MANUFACTURERS
INSTRUCTIONS

YES NO

DECLARATION:

Planned Preventative Maintenance carried out
in accordance with the Standard,
Manufacturers' Guidance and Best Practice

Signature
(Engineer).....

Signature
(Site Representative / Consumer)
.....

Date.....

