ISSUE 2.2

MICROGENERATION INSTALLATION STANDARD: MCS 023

MCS Additional Requirements for MCS Contractors to Demonstrate PAS2030 Equivalence for the Installation of Microgeneration Technologies.

This Standard has been approved by the Steering Group of the Microgeneration Certification Scheme (MCS).

REVISION OF MICROGENERATION INSTALLATION STANDARDS

Microgeneration Installation Standards will be revised by issue of revised editions or amendments. Details will be posted on the website at www.mcscertified.com

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.

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CONTENTS

FOREWORD

The following document (MCS 023) contains provisions, which, through reference in this text, constitute normative or informative provisions of this document (MCS 023). At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties applying this document (MCS 023) shall investigate the possibility of applying the most recent editions of the documents referenced.

The following document (MCS 023 Issue 2.1) is a minor update to MCS 023 Issue 2.0. It is available for reference from the date of publication (23/11/2017). Installers of microgeneration systems who wish to become certificated in accordance with MCS 023 Issue 2.1 may commence working in accordance with this standard from (23/11/2017). Installers of microgeneration systems who wish to operate under Energy Efficiency schemes including funding options such as ECO (Energy Company Obligation) or Green Deal to install microgeneration measures must be authorised to do so in accordance with MCS 023 Issue 2.1 from 23/02/2018.

1. INTRODUCTION

1.1 The objective of this document is to set out the additional requirements to be fulfilled by an MCS Contractor in order for an MCS installation to be eligible to claim equivalent compliance with the Specification for installation of energy efficient measures in existing buildings. Compliance with this document is in addition to the requirement for MCS Contractors to comply with all MCS Contractor Certification Scheme Requirements, the Green Deal Code of Practice, where relevant, or any other relevant standards, legislation, regulations or other referenced documents.

1.2 The requirements here-in are derived from PAS 2030:2017. MCS acknowledges and thanks the British Standards Institution (BSI) and the PAS 2030 Steering Group for allowing those requirements to be reflected in this document.

2. SCOPE

2.1 The scope of this standard includes the supply, design, installation, set to work and commissioning of the following Microgeneration technologies:

- Microgeneration Heat Pump Systems
- Solid Biofuel Heating Systems
- Heat Led Micro-CHP Systems
- Electricity-Led Micro-CHP Systems
- Micro and Small Wind Turbine Systems
- Solar Photovoltaic (PV) Microgeneration Systems
- Solar Heating Microgeneration Systems

2.2 Certification to this standard only covers the technologies listed above and does not confer authorisation to install any other Energy Efficiency Measures (EEMs).

2.3 For the avoidance of doubt, the MCS Contractor is always responsible for ensuring all MCS requirements in relation to each installation have been met in full.

3. DEFINITIONS

Accredited Certification Body	A body that undertakes the assessment of microgeneration installation companies in accordance with the requirements of this scheme and is accredited to do so in accordance with ISO/EN 17065 by UKAS or an equivalent (i.e. a member of the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA)) as well as being party to a valid Sub-Licence for use of the MCS Mark, and a valid Sub-Licence for use of the Green Deal Mark.
Commissioning	Activities that ensure that the installed measure operates within the boundaries and conditions of the design specification.
Customer	The end-user for whom the microgeneration installation will be carried out. In consumer contracts this may be the householder or property owner (e.g. a social or private landlord).
Energy efficiency measure (EEM)	Planned work undertaken to improve the energy performance of a building by saving or generating energy.
EEM system	Combination of particular products, installation equipment and materials, method of installation and performance objectives included on the approved (EEM) register.
Green Deal Provider (Provider)	Entity providing specification services to customers under the Green Deal in relation to products/systems identified on the approved (EEM) register. NOTE: The Green Deal Provider will also have responsibilities relating to the financing of the EEM to be installed.
MCS Contractor	An organisation that is responsible for all of the following activities: supply, design or design review, installation, set to work and commissioning Microgeneration systems and technologies.
Installation	Location, placement and/or fixing of an EEM in, or connected to, an existing building excluding any related work to enable the installation of the measure.
Operative	Person employed by the installation company, either directly or under a subcontract arrangement, to undertake installation tasks on an energy efficiency measure in accordance with the relevant method statement and the related requirements of this Standard. NOTE: Individuals employed to provide labouring, carrying or loading/unloading capability do not constitute operatives in the terms of this Standard.
Pre-installation Building survey	Inspection and assessment undertaken by, or on behalf of, the MCS Contractor prior to commencement of installation, to confirm that the design can be fulfilled at the location specified and that the proposed installation will not result in non-compliance with MCS scheme requirements.

4. ASSESSMENT BY THE CERTIFICATION BODY

4.1 In addition to the assessment scope and methodology outlined in the MCS scheme documents, the scope of the assessment and surveillance will also include this Standard. For those installers who are operating under Green Deal funding the assessment will also include the Green Deal Code of Practice.

5. CERTIFICATION AND LISTING

5.1 Current certification on the MCS Contractor Scheme, demonstrating conformity with MCS 001 and the appropriate MIS standard(s), is compulsory for Certification against this Standard.

5.2 Once the Certification Body has completed assessment against this Standard, and all non-conformities are closed, the Certification Body may provide the installation company with a certificate detailing their certification to this and any other relevant Standards under MCS.

5.3 The certificate remains the property of the issuing Certification Body.

5.4 The details of the installation company may then be published on the MCS website www.mcscertified.com and where relevant, the Green Deal ORB website http://gdorb.decc.gov.uk/green-deal-participant-register.

6. CERTIFICATION MARK

6.1 The MCS Contractor shall use the Certification Mark(s) only in accordance with the Certification Bodies' instructions.

7. ADDITIONAL INFORMATION

7.1 For the purposes of Green Deal oversight, in addition to MCS scheme requirements regarding sharing of applicant and certificate holder information, such information may also be shared by the Certification Body and/or MCS with the Green Deal Oversight and Registration Body.

The following sets out the requirements against which the MCS Contractor will be assessed:

8. BUSINESS AND FINANCIAL PROBITY

8.1 The MCS Contractor shall be able to demonstrate the financial stability and business resources likely to sustain the operation of the installation service and shall have adequate arrangements including insurance, to underwrite the liabilities arising from any claims resulting from deficiencies of product or system selection, design, detailing or installation. Together with appropriate guarantees and warranties for the work, as required by the design and specification or by MCS or the Consumer Code, in respect of its operations and/or activities undertaken.

9. DESIGN

9.1 The design for installation may be produced by a third-party design source (an individual or an organisation) or by the MCS Contractor. But in either situation for each planned installation, the MCS Contractor shall obtain from the design source, a location specific design for the complete package of energy efficiency measures to be installed at that location. The MCS Contractor shall not commence installation until all of the specified information has been obtained and confirmed. The MCS Contractor shall remain responsible for ensuring that design is in accordance with the MCS scheme requirements.

9.2 In incorporating the design in the location specific installation method statement, the MCS Contractor shall confirm the inclusion of, take into account and make provision for the requirements set out in this Clause as specified in the design. Where any of these elements has not been accounted for, the MCS Contractor shall consult with the design source as to whether or not this was intended:

- construction details at all corners, junctions, and edges of installed measures, and all interfaces between measures (both physical junctions and technical interactions as identified by the *Measures Interaction Matrix* (**Annex A**));

- improvement of the air-tightness of the building envelope, i.e. reduction of wind-driven infiltration and air leakage;
- provision of deliberate ventilation sufficient to ensure adequate internal air quality and minimise internal surface condensation risk, especially where the air-tightness of the building envelope will be improved by the installation of insulation, draught stripping, new windows or any other measure;
- provision of combustion air supplies for any open-flued combustion appliances located within the dwelling;
- mitigation of the risk of summer overheating, with regard to the temperature predictions for the period to 2050 published by the UK Climate Impact Programme (UKCIP);
- maintenance requirements to ensure the long-term integrity of the installation;
- protection of the building against the impact of fire occasioned by the installation of EEM;
- resilience of installed measure to flood risk.

10. ADDITIONAL SITE-SPECIFIC REQUIREMENTS (PRE-INSTALLATION BUILDING INSPECTION)

10.1 The MCS Contractor shall undertake a pre-installation inspection of the designated location on the basis of the installation method statement prepared.

10.2 The inspection shall be undertaken at a level of detail sufficient to confirm that the specified measure can be safely and effectively installed at the designated location paying particular attention to potential moisture build-up as a result of the installation and taking into account the functionality and/or safety of installed services (gas, electricity, water, telecommunications, etc.). Additionally, in the event that species (e.g. bats, birds, butterflies, dormice) or plants that could be subject to special protection are found to be present at the designated location the MCS Contractor shall include report of that presence in the survey record, and if a third party design source was used include them with this record. The MCS Contractor or the third party design source shall notify any relevant statutory authorities, and work with the Customer as necessary to develop a mutually agreed solution. Installation shall not commence until such solution has been agreed.

10.3 The MCS Contractor shall provide information as to the location and timing of forthcoming pre-installation building inspections to any relevant Certification Body, upon request by that body to do so.

10.4 The suitability and completeness of the installation method statement shall be checked as part of the pre-installation building inspection. In the event that the method statement is found to be inadequate, the findings of the pre-installation inspection shall be used to inform the correction or further development of the method statement.

10.5 The suitability and completeness of the design shall be reviewed as part of the pre-installation building inspection and action taken to bring to the attention of the design source:

- anything missing from the design that might reasonably be expected to be included;
- anything that is contrary to the stated design assumptions (e.g. assumptions about areas that can only be examined after opening-up the construction);
- any aspect of the design and specification that cannot be implemented, for whatever reason, and request an appropriate amendment or written confirmation that installation can proceed without amendment.

10.6 Before conclusion of the pre-installation building inspection, the MCS Contractor shall confirm with the customer that:

- the nature and extent of the specified installation is known to the customer and is in line with that customer's expectations;
- the arrangements made for site access and installation materials storage are adequate and appropriate for the installation to be undertaken.

10.7 Record of the pre-installation building inspection and its findings, including those relating to the suitability and completeness of the installation method statement, the design and any customer-related issues, shall be retained by the MCS Contractor, with copy being made available to the design source and/or any relevant validation body, on request.

10.8 Any variation to the method statement and/or installation methods shall be defined, documented and agreed with the design source and confirmed with the customer, before proceeding with the installation.

11. EQUIPMENT

11.1 In the event that the MCS Contractor has reason to believe that a calibrated item may be out of calibration (e.g. the item has been dropped or mistreated), the MCS Contractor shall have in place instruction that operatives cease using the item immediately and arrangement for its recalibration or replacement at the earliest practicable time. The MCS Contractor shall record the date and time of all instances where recalibration or replacement is required during an installation and take action to confirm any measurements that may have been made while the item was out of calibration.

12. CLAIMS OF COMPLIANCE

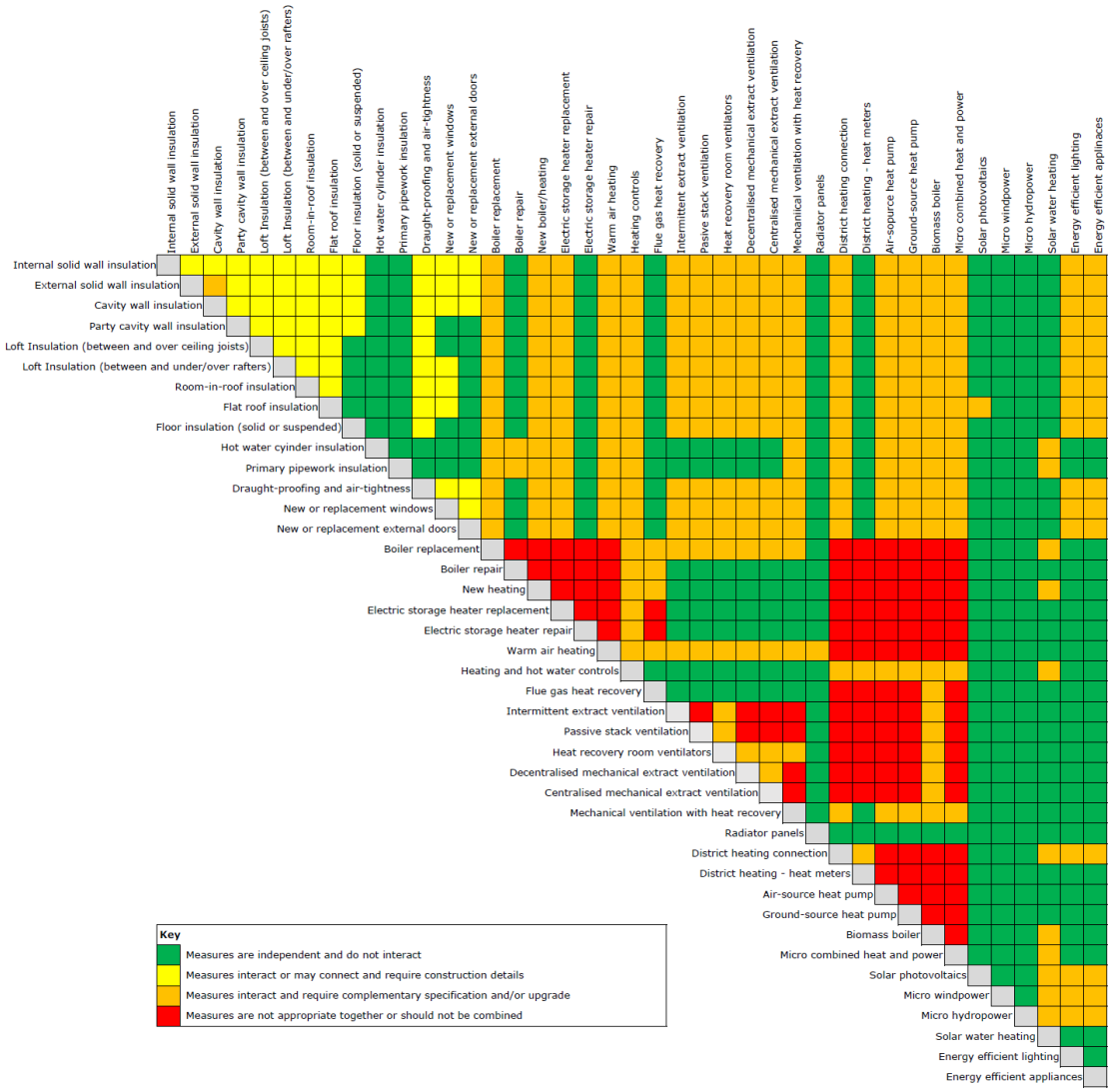
12.1 The installation of each energy efficiency measure claimed to be in compliance with the requirements of this standard shall be supported by a declaration of conformity selected from the options below to this MCS standard and issued to the customer.
Where the EEM design/ specification is provided by the MCS Contractor and compliance with MCS 023 validated by the MCS Contractor:

12.1.1 Design and installation by MCS Contractor
The design and installation of [*microgeneration energy efficiency measure(s)*] at [*location of installation*] and handed over on [*date of handover*] has been undertaken by [*name of MCS Contractor*] using a process complying with MCS 023 Issue 2.0, including measure(es) [*insert references to relevant MCS Installation Standards*]. [Include name of Certification Body] certified.

12.1.2 Design by Third Party Design Source and Install by MCS Contractor

The installation of [*microgeneration energy efficiency measure(s)*] at [location of installation] and handed over on [date of handover] has been undertaken by [*MCS Contractor*] in accordance with a design provided by [name of designer] using a process complying with PAS 2030:2017, including Annex(es) *insert references to relevant MCS Installation Standards*]. [Include name of Certification Body] certified.

ANNEX A


Internal solid wall insulation
External solid wall insulation
Cavity wall insulation
Party cavity wall insulation
Loft Insulation (between and over ceiling joists)
Loft Insulation (between and under/over rafters)
Room-in-roof insulation
Flat roof insulation
Floor insulation (solid or suspended)
Hot water cyinder insulation
Primary pipework insulation
Draught-proofing and air-tightness
New or replacement windows
New or replacement external doors
Boiler replacement
Boiler repair
New heating
Electric storage heater replacement
Electric storage heater repair
Warm air heating
Heating and hot water controls
Flue gas heat recovery
Intermittent extract ventilation
Passive stack ventilation
Heat recovery room ventilators
Decentralised mechanical extract ventilation
Centralised mechanical extract ventilation
Mechanical ventilation with heat recovery
Radiator panels
District heating connection
District heating - heat meters
Air-sopurce heat pump
Ground-source heat pump
Biomass boiler
Micro combined heat and power
Solar photovoltaics
Micro windpower
Micro hydropower
Solar water heating
Energy efficient lighting
Energy efficient appliances
Key
Measures are independent and do not interact
Measures interact or may connect and require construction details
Measures interact and require complementary specification and/or upgrade
Measures are not appropriate together or should not be combined

PUBLICATIONS REFERRED TO

The following list implies the latest edition and amendments:

- Green Deal Code of Practice. Available from: http://gdorb.decc.gov.uk/code-of-practice
- MCS 001: Installer Certification Scheme Requirements. Available from: www.mcscertified.com
- PAS 2030: Improving the Energy Efficiency of Existing Buildings – Specification for the installation of energy efficiency measures (EEM) in existing buildings. Available from http://shop.bsigroup.com/ProductDetail/?pid=000000000030353572

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AMENDMENTS ISSUED SINCE PUBLICATION

Document no.	Amendment details	Date
1.0	First publication	28/01/2013
1.1	Amendment to definition of customer.	21/11/2014
2.0	Updated in line with PAS 2030: 2017 changes	20/11/2017
2.1	Updated to include a 3-month implementation timeline	23/11/2017
2.2	Rebranding of document, update of email and website addresses and cosmetic changes.	19/06/2019