



The Certification Mark for Onsite
Sustainable Energy Technologies

Microgeneration Certification Scheme: MCS 004

Product Certification Scheme Requirements:
Solar Collectors

Issue 3.3

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

This Standard was prepared by the Microgeneration Certification Scheme Working Group 1 'Solar Heating Systems'.

REVISION OF MICROGENERATION CERTIFICATION STANDARDS

Microgeneration Standards will be revised by issue of revised editions or amendments. Details will be posted on the website at www.microgenerationcertification.org

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FOREWORD

The following document contains provisions, which, through reference in this text, constitute normative or informative provisions of this document MCS 004. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties applying this document MCS 004 are encouraged to investigate the possibility of applying the most recent editions of the documents referenced.

The following document MCS 004 issue 3.3 is a minor update to MCS 004 issue 3.2. It is available for reference from the date of publication 06/05/2015. Manufacturers or importers of microgeneration systems who have certificated a microgeneration product in accordance with MCS 004 may commence working in accordance with this update from the date of publication 06/05/2015. Manufacturers or importers of microgeneration systems who have certificated a microgeneration product in accordance with MCS 004 shall commence working in accordance with this update from 06/08/2015.

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1. INTRODUCTION

1.1 This document identifies the evaluation and assessment requirements and practices for the purposes of certification and listing of Solar Thermal Collectors. Certification and listing of products is based on evidence acceptable to the Certification Body:

- that the product meets the standard;
- 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.

2. DEFINITIONS

Installation	The activities associated with placement and fixing of a microgeneration system.
Solar Heating System	System composed of Solar Thermal Collectors and other components for the delivery of thermal energy.
Solar Thermal Collector	Device designed to absorb solar radiation and to transfer the thermal energy so produced to a <u>fluid</u> (liquid or gas) passing through it without a change in state. Note: A fluid may be a liquid, air or other gas.

3. SCOPE

3.1 This Scheme provides ongoing independent, third party assessment and approval of companies who wish to demonstrate that their Solar Thermal Collector meets and continues to meet the requirements of:

- EN12975-1: 2006 Thermal solar systems and components. Solar collectors. General requirements;
- EN12976-1:2006 Thermal solar systems and components. Factory made systems. General requirements; or,
- For Solar Thermal Collectors that use air as the primary working fluid an adapted version of the aforementioned standards. (See Note 3 on page 7).

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Note: This Scheme has some additional requirements for roof-integrated Solar Thermal Collectors (see 6.1.2).

3.2 The scope of this MCS product certification scheme document is limited to single Solar Thermal Collectors up to a 45 kWth output under the type test conditions specified in this Standard.

4. APPLICATIONS TO JOIN THE SCHEME

4.1 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.

5. MANAGEMENT SYSTEMS CERTIFICATION

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

6. CERTIFICATION AND APPROVAL

6.1 Certification and approval is based on the following:

6.1.1 Evidence of compliance with:

- EN12975-1: 2006 Thermal solar systems and components. Solar collectors. General requirements; or,
- EN12976-1: 2006 Thermal solar systems and components. Factory made systems. General requirements.

6.1.1.1 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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NOTE:

1. *For Solar Thermal Collectors with absorbers that contain silicone rubber to enclose the heat transfer fluid, the absorber shall be tested in accordance with the requirements for organic materials.*
2. *For Solar Thermal Collectors which are claimed to be freeze resistant and which are tested in accordance with the requirements for organic materials, it is permissible for a manufacturer to specify different maximum pressures for the frozen and unfrozen conditions. Certification Bodies will accept satisfactory results of separate internal pressure tests for these conditions, at appropriate temperatures and pressures.*
3. *For Solar Thermal Collectors that use air as the primary working fluid, a test standard does not currently exist. In this case, the Certification Body may accept a test report from an independent and suitably accredited testing laboratory for EN 12975 / 76 holding IEC 17025 accreditation from UKAS (or equivalent), detailing tests carried out generally in accordance with the EN 12975 / 76 standards, but with justification of specific modifications accommodating the change in working fluid.*

6.1.2 For roof-integrated Solar Thermal Collectors (i.e. those that replace part of the roof covering and, hence, perform some of the functions of the roof covering) the installation instructions shall specify:

- i) The types of roof constructions (e.g. slate, shingle, seam, concrete tile etc) with which the Solar Thermal Collectors can be integrated and, for each of these roof types, shall give full instructions of how the collector is to be installed to provide a weatherproof installation (i.e. details of any flashing or sealing kits and how these are fitted to the collector and to the adjoining roof covering). Particular attention should be paid into roof-integration with double lap plain clay tiles.
- ii) Any limitations on the use of the Solar Thermal Collectors required to meet building regulation requirements, in particular those relating to external fire spread.

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

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

6.2 Applications for a range of common products (product families) will be dealt with on a case by case basis. 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.

6.3 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 (FPC) and technical documentation.

6.4 Certificates contain the name and address of the manufacturer, model and reference number of the Solar Thermal Collector, a unique certificate reference number and the issue number and date.

6.5 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.

6.6 Details of the manufacturer and the certificated product(s) are listed on the website at www.microgenerationcertification.org.

7. TECHNICAL DOCUMENTATION

7.1 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:

- a) Details of intended use, application and classifications (if any) required;

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- 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); and,
- g) Installation, use and maintenance instructions.

8. MAINTENANCE OF CERTIFICATION AND LISTING

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

8.1 Factory Audits

8.1.1 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

8.2.1 Product audits will be conducted as follows:

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

9. CERTIFICATION MARK AND LABELLING

9.1 All approved products listed under this Scheme shall be traceable to identify that they have (marked with a label to confirm that the product has) been tested and

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certificated in accordance with the requirements of the appropriate test standard. See below for details.

9.2 The supplier shall use the Certification Mark(s) only in accordance with the Certification Body's instructions.

9.3 An example of the certification mark that can be used for this Scheme is as follows:



Certificate Number MCS "XXX"

"Description of the Technology certificated"

9.4 Where 'XXX' is used, the certificate number and the logo of the Certification Body issuing the certification would sit in the right hand box.

9.5 Companies may only use the Mark while the certification is maintained.

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REVISION OF MICROGENERATION CERTIFICATION SCHEME (MCS)

REQUIREMENTS

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AMENDMENTS ISSUED SINCE PUBLICATION

Document Number:	Amendment Details:	Date:
1.1	'UK' removed from scheme name; 'Department of Trade and Industry' MCS mark replaced by 'BERR' MCS Mark	11/01/2008
1.2	Revision details added BRE Certification Limited mark replaced by BRE Global mark	25/02/2008
2.0	Requirements for roof integrated collectors added. For immediate implementation. N.B. These changes do not affect products already certificated	23/06/2008
2.1	Gemserv details added as Licensee. Document reformatted to reflect brand update. References to BERR updated to DECC, MCS logo updated accordingly. Website and email addresses updated to reflect new name.	01/12/2008
2.2	Quality review	10/01/2009
2.3	MCS Marks updated	25/02/2009

3.0	Definitions section added. Guidance for Solar Thermal Collectors which use air added.	01/10/2013
3.1	Definitions for Solar Thermal Collector updated to reflect definition in installation standard.	16/12/2013
3.2	Update to definitions.	01/05/2015
3.3	Minor corrections to cross referencing	06/05/2015