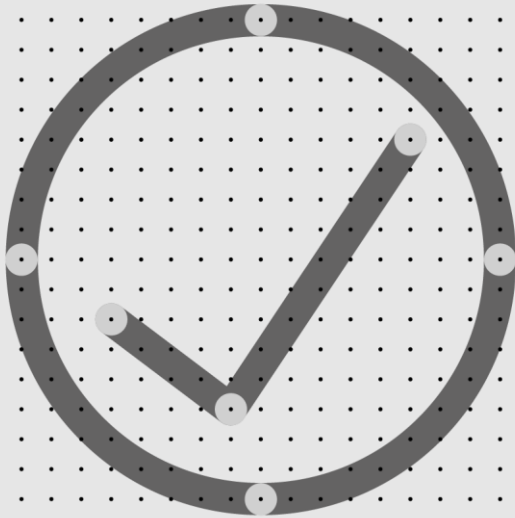


The Solar Thermal Standard

(Product)



This Standard was prepared by the MCS Working Group 1 ‘Solar Thermal’.

It is published by The MCS Service Company Ltd on behalf of the MCS Charitable Foundation.

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The MCS Service Company Ltd
Innovation Centre,
Sci-Tech Daresbury,
Keckwick Lane,
Cheshire WA4 4FS

www.mcscertified.com
hello@mcscertified.com
0333 103 8130

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ABOUT MCS

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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CHANGES TO STANDARDS

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

Technical or other significant 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 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
1.1	'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
3.1	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
3.4	MCS Mark Updated. Rebranding of document, update of email and website addresses and cosmetic changes.	01/12/2019
4.0	Update in response to MCS Standards Project review: <ul style="list-style-type: none"> • Modernised document style and updated to new MCS standard text. • Removed collectors which are not of the liquid flat plate or liquid evacuated tube type from the standard. • Testing criteria now includes reference to ISO 9806. • New definitions for Solar Thermal Product, Solar Thermal Array and Solar Thermal System and included informative reference to ISO 9488. 	XX/XX/2022

FOREWORD

This document contains references to other documents which may be either normative or informative. At the time of publication any editions of those documents, where indicated, were valid. However, as all documents are subject to revision, any users of this document should apply the most recent editions of those referenced documents (unless a dated version is specified).

This issue 5.0 is a significant update to issue 3.4. It is available for reference from the date of publication **XX/XX/2022**. Manufacturers or importers of microgeneration systems who have certificated products in accordance with MCS 004 may start working in accordance with this update from the date of publication. Compliance with this update is mandatory for products to be certified in accordance with MCS 004 from the date of implementation **XX/XX/2022**.

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1 INTRODUCTION & SCOPE

This Scheme document identifies the evaluation and assessment practices for the purposes of certification and listing of Solar Thermal Products. 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.

For the purposes of this Standard, Solar Thermal Products are defined as liquid filled flat plate or evacuated tube solar collectors that are designed to absorb solar radiation and transfer thermal energy so produced to the liquid passing through it.

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

- BS EN 12975-1 Thermal solar systems and components. Solar collectors. General requirements and tests performed in accordance with BS EN 12975-2 or ISO 9806.
- BS EN 12976-1 Thermal solar systems and components. Factory made systems. General requirements and tests performed in accordance with BS EN 12976-2.

Note: This Scheme has some additional requirements for roof-integrated solar thermal collectors (see Section 7).

2 DEFINITIONS

Solar Thermal Product	Liquid filled flat plate or evacuated tube solar collector that is designed to absorb solar radiation and transfer thermal energy so produced to the liquid passing through it.
Solar Thermal Array	Group of one or more Solar Thermal Products that are located closely together (including mounting and connecting fluid pipework).

Solar Thermal System	System composed of one or more Solar Thermal Arrays and other components for the delivery of thermal energy for space heating, and/or domestic hot water.
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Where a definition does not appear in this Standard, informative reference is made to ISO 9488 (Solar energy – Vocabulary).

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 documented manufacturing quality control system, certified in accordance with the requirements of MCS 010 - 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 options listed in the scope and the performance 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).

- 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 and with the provisions of the standard with which conformity is being claimed.

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 Solar Thermal Product, 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 at www.mcscertified.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:

- 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) User and installation documentation, including commissioning requirements, use and maintenance instructions with evidence that the installed system is able to meet the installation requirements of Building Regulations of the country where the product will be installed.

7 PERFORMANCE AND TESTING CRITERIA

Certification and approval is based on the following:

- a) Evidence of compliance with:
 - BS EN 12975-1 Thermal solar systems and components. Solar collectors. General requirements and tests performed in accordance with BS EN 12975-2 or ISO 9806.
 - BS EN 12976-1 Thermal solar systems and components. Factory made systems. General requirements and test performed in accordance with BS EN 12976-2.

Note: PVT (Photovoltaic Thermal Collector) Solar Thermal Products are in the scope of this Standard. Solar air heating collectors are not in the scope of this Standard.

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Note: The UK left the European Union on 31 January 2020 and as a result, manufacturers must ensure their Solar Thermal Products meet UK product standards and safety regulatory requirements. These may be different from those required for Solar Thermal Products sold in the European Union.

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).

- b) For roof-integrated Solar Thermal Products (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:
 - 1) The types of roof constructions (e.g. slate, shingle, seam, concrete tile etc) with which the Solar Thermal Products 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.
 - 2) Any limitations on the use of the Solar Thermal Products required to meet building regulation requirements, in particular those relating to external fire spread.
- c) Verification of the establishment and maintenance of the manufacturing company's quality management system in accordance with the Factory Production Control requirements (FPC).
- d) 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. 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 (FPC) and technical documentation.

Certificates contain the name and address of the manufacturer, model and reference number of the Solar Thermal Product, 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.

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Details of the manufacturer and the certificated product(s) are listed on the website at www.mcscertified.com/

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:

- 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

All approved products listed under this Scheme shall be traceable to identify that they have been tested and certificated in accordance with the requirements of the test standard. See below for details.

The Supplier shall use the Certification Mark(s) only in accordance with their Certification Body’s instructions.

An example of the Certification Mark(s) that can be used for this Scheme is as follows:

From the 1st December 2019 the new MCS Certification Mark is available for use:



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Prior to the 1st December 2019 but still in use until a product is phased out or a manufacturer wishes to migrate over to the new Certification Mark:



Certificate Number MCS "XXX"
"Description of the Technology certificated"

Where 'XXX' is the certificate number, and the logo of the Certification Body issuing the certification would sit on the right hand side of the logo.

Companies may only use the Mark while certification is maintained.

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