

Thermal solar systems and components — Solar collectors —

Part 1: General requirements

ICS 27.160

National foreword



From well-managed forests

Cert no. SW-COC-004238
www.fsc.org
© 1996 Forest Stewardship Council

This British Standard is the UK implementation of EN 12975-1:2006+A1:2010. It supersedes BS EN 12975-1:2006 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee RHE/25, Solar heating.

A list of organizations represented on this committee can be obtained on request to its secretary.

BSI committee RHE/25, Solar heating, would like to draw users attention to the fact that for solar collectors using absorbers that contain silicone rubber to enclose the fluid, the absorber should be tested in accordance with the requirements for organic materials.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 April 2006

© BSI 2010

ISBN 978 0 580 70583 0

Amendments/corrigenda issued since publication

Date	Comments
May 2006	Correction to national foreword
31 December 2010	Implementation of CEN amendment A1:2010

English Version

Thermal solar systems and components - Solar collectors - Part 1: General requirements

Installations solaires thermiques et leurs composants -
Capteurs solaires - Partie 1 : Exigences générales

Thermische Solaranlagen und ihre Bauteile - Kollektoren -
Teil 1: Allgemeine Anforderungen

This European Standard was approved by CEN on 6 February 2006 and includes Amendment 1 approved by CEN on 7 September 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Symbols and units	5
5 Durability and reliability	5
5.1 Materials and design	5
5.2 Required tests	6
5.3 Pass criteria.....	6
5.3.1 General.....	6
5.3.2 Internal pressure for absorber	7
5.3.3 High temperature resistance	7
5.3.4 Exposure.....	7
5.3.5 External thermal shock	7
5.3.6 Internal thermal shock	7
5.3.7 Rain penetration.....	7
5.3.8 Mechanical load test.....	7
5.3.9 Thermal performance	8
5.3.10 Freeze resistance test	8
5.4 Procedure	8
6 Safety	8
7 Collector identification	8
7.1 Drawings and data sheet	8
7.2 Labelling	9
7.3 Installer instruction manual.....	9
Annex A (informative) Description of solar collectors materials and manufacture	10
A.1 General.....	10
A.2 Absorbers	10
A.3 Transparent covers.....	11
A.4 Insulation materials	11
A.5 Reflectors	11
A.6 Diffusion barriers	11
Annex B (informative) Environmental protection	12
B.1 Heat transfer fluid	12
B.2 Insulation materials	12
B.3 Recycling of the collector materials	12
Annex C (informative) Tests to be repeated in collector design modifications	13
Bibliography	14

Foreword

This document (EN 12975-1:2006+A1:2010) has been prepared by Technical Committee CEN/TC 312 “Thermal solar systems and components”, the secretariat of which is held by ELOT.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes  EN 12975-1:2006 .

This document includes Amendment 1 approved by CEN on 2010-09-07.

The start and finish of text introduced or altered by amendment is indicated in the text by tags  .

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard, it is pointed out that:

- a) This standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- b) It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.