

Thermal solar systems and components — Custom built systems —

Part 1: General requirements

ICS 27.160; 97.100.99

National foreword

This Draft for Development is the official English language version of ENV 12977-1:2001.

This publication is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature to allow further development. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

According to the replies received by the end of the review period, the responsible BSI committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee RHE/25, Solar Heating, at 389 Chiswick High Road, London W4 4AL, giving the document reference number and clause number and proposing, where possible, an appropriate revision of the text.

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

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

This Draft for Development, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 August 2001

Summary of pages

This document comprises a front cover, an inside front cover, the ENV title page, pages 2 to 17 and a back cover.

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English version

Thermal solar systems and components - Custom built systems - Part 1: General requirements

Installations solaires thermiques et leurs composants -
Installations assemblées à façon - Partie 1: Exigences
générales

Thermische Solaranlagen und ihre Bauteile -
Kundenspezifisch gefertigte Anlagen - Teil 1: Allgemeine
Anforderungen

This European Prestandard (ENV) was approved by CEN on 12 March 2001 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 312 "Thermal solar systems and components", the secretariat of which is held by ELOT.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Drinking water quality

In respect of potential adverse effects on the quality of drinking water intended for human consumption, caused by the product covered by this Prestandard it should be noted that:

- a) This Prestandard 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) while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

Factory Made and Custom Built solar heating systems

The standards EN 12976-1 and EN 12976-2 as well as ENV 12977-1 to ENV 12977-3 distinguish two categories of solar heating systems: **Factory Made** solar heating systems and **Custom Built** solar heating systems. The classification of a system as Factory Made or Custom Built is a choice of the final supplier, in accordance to the following definitions:

Factory Made solar heating systems are batch products with one trade name, sold as complete and ready to install kits, with fixed configuration. Systems of this category are considered as a single product and assessed as a whole.

If a Factory Made Solar Heating System is modified by changing its configuration or by changing one or more of its components, the modified system is considered as a new system for which a new test report is necessary. Requirements and test methods for Factory Made solar heating systems are given in EN 12976-1 and EN 12976-2.

Custom Built solar heating systems are either uniquely built, or assembled by choosing from an assortment of components. Systems of this category are regarded as a set of components. The components are separately tested and test results are integrated to an assessment of the whole system. Requirements for Custom Built solar heating systems are given in ENV 12977-1, test methods are specified in ENV 12977-2 and ENV 12977-3. Custom Built solar heating systems are subdivided into two categories:

- **Large Custom Built systems** are uniquely designed for a specific situation. They are in general designed by HVAC engineers, manufacturers or other experts.
- **Small Custom Built systems** offered by a company are described in a so called assortment file, in which all components and possible system configurations, marketed by the company, are specified. Each possible combination of a system configuration with components from the assortment is considered as **one** Custom Built system.

Table 1 shows the division for different system types.

Table 1 - Division for factory made and custom built solar heating systems

Factory Made Solar Heating Systems (EN 12976-1, -2)	Custom Built Solar Heating Systems (ENV 12977-1, -2, -3)
Integral collector-storage systems for domestic hot water preparation	Forced-circulation systems for hot water preparation and/or space heating, assembled using components and configurations described in a documentation file (mostly small systems)
Thermosiphon systems for domestic hot water preparation	
Forced-circulation systems as batch product with fixed configuration for domestic hot water preparation	Uniquely designed and assembled systems for hot water preparation and/or space heating (mostly large systems)

NOTE 1 Forced circulation systems can be classified either as Factory Made or as Custom Built, depending on the market approach chosen by the final supplier.

NOTE 2 Both Factory Made and Custom Built systems are performance tested under the same set of reference conditions as specified in annex B of EN 12976-2:2000 and annex A of ENV 12977-2:2001. In practice, the installation conditions may differ from these reference conditions.