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BSI Standards Publication

## Solar collectors — General requirements

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## National foreword

This British Standard is the UK implementation of EN 12975:2022. It supersedes BS EN 12975-1:2006+A1:2010, which is withdrawn.

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 committee manager.

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### Amendments/corrigenda issued since publication

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English Version

## Solar collectors - General requirements

Capteurs solaires - Exigences générales

Sonnenkollektoren - Allgemeine Anforderungen

This European Standard was approved by CEN on 31 January 2022.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 12975:2022) has been prepared by Technical Committee CEN/TC 312 "Thermal solar systems and components", the secretariat of which is held by NQIS/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of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by December 2023.

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

This document supersedes EN 12975-1:2006+A1:2010.

In comparison with the previous edition, the following technical modifications have been made:

- the references to the underlying testing standard EN ISO 9806 were updated;
- the gross yield concept is introduced;
- the concept for families of similar collectors is introduced.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## 1 Scope

This document is applicable to all types of fluid heating solar collectors. This document specifies performance requirements for fluid heating solar collectors with respect to durability, reliability, safety and thermal performance.

This document deals with the solar collector and not with assemblies. This document is not applicable to those devices in which a thermal storage unit is an integral part to such an extent that the collection process cannot be separated from the storage process for making the collector thermal performance measurements.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 9488, *Solar energy - Vocabulary (ISO 9488)*

EN ISO 9806:2017, *Solar energy - Solar thermal collectors - Test methods (ISO 9806:2017)*

EN 13501-1:2018, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 13501-5, *Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roofs tests*

EN 13823, *Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 11925-2, *Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2)*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 9488, EN ISO 9806 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### Gross Thermal Yield

$GT_Y(\vartheta_{op}, Loc)$

thermal energy yield of a collector for the operating temperature  $\vartheta_{op}$  and the ambient conditions  $Loc$

### 3.2

#### Gross Electric Yield

$GE_Y(\vartheta_{op}, Loc)$

electric energy yield of a collector for the operating temperature  $\vartheta_{op}$  and the ambient conditions  $Loc$

### 3.3

#### Gross Solar Yield

$GS_Y(\vartheta_{op}, Loc)$

total energy yield of a collector for the operating temperature  $\vartheta_{op}$  and the ambient conditions  $Loc$