

Australian/New Zealand Standard™

Test methods for solar collectors

**Part 1: Thermal performance of glazed
liquid heating collectors including
pressure drop (ISO 9806-1:1994, MOD)**



AS/NZS 2535.1:2007

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CS-028, Solar Water Heaters. It was approved on behalf of the Council of Standards Australia on 22 December 2006 and on behalf of the Council of Standards New Zealand on 19 January 2007.
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The following are represented on Committee CS-028:

Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Australian and New Zealand Solar Energy Society
Department of Energy, Utilities and Sustainability (NSW)
Energy Efficiency & Conservation Authority of New Zealand
Gas Appliance Manufacturers Association of Australia
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Part 1: Thermal performance of glazed liquid heating collectors including pressure drop (ISO 9806-1:1994, MOD)

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS-028, Solar Water Heaters, to supersede AS/NZS 2535.1:1999, *Test methods for solar collectors—Thermal performance of glazed liquid heating collectors including pressure drop*.

This Standard incorporates Amendment No. 1 (August 2014). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide uniform test methods for the thermal performance of glazed liquid heating collectors.

This Standard is an adoption with national modifications and has been reproduced from ISO 9806:1994, *Test methods for solar collectors, Part 1: Thermal performance of glazed liquid heating collectors including pressure drop*, and has been varied as indicated to take account of Australian/New Zealand conditions. The modification is listed in Annex ZA. Annex ZB provides additional test requirements for the ‘Outdoor steady-state efficiency’ test of Clause 8.4 and the informative annexes ZB, ZC, ZD and ZE provide additional equations to cover a broad range of conditions.

As this Standard is reproduced from an international standard, the following applies:

- (a) its number appears on the cover and title page while the international standard number appears only on the cover
- (b) In the source text ‘ISO 9806-1’ should read ‘AS/NZS 2535.1’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

| <i>Reference to International Standard</i> | | <i>Australian/New Zealand Standard</i> | |
|--|--|--|---|
| ISO | | AS/NZS | |
| 9459-1 | Solar heating—Domestic water heating system—Part 1: Performance rating procedure using indoor test methods | 4445.1 | Solar heating—Domestic water heating systems—Performance rating procedure using indoor test methods |

This Standard is not intended to be a mandatory replacement for any performance rating test methods already in use in Australia or in New Zealand.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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Test methods for solar collectors—**Part 1: Thermal performance of glazed liquid heating collectors including pressure drop (ISO 9806-1:1994, MOD)****1 Scope**

1.1 This part of ISO 9806 establishes methods for determining the thermal performance of glazed liquid heating solar collectors. These tests are intended for use as part of the sequence of tests specified in ISO 9806-2.

1.2 This part of ISO 9806 provides test methods and calculation procedures for determining the steady-state and quasi-steady-state thermal performance of solar collectors. It contains methods for conducting tests outdoors under natural solar irradiance and for conducting tests indoors under simulated solar irradiance.

1.3 This part of ISO 9806 is not applicable to those collectors in which the thermal storage unit is an integral part of the collector to such an extent that the collection process cannot be separated for the purpose of making measurements of these two processes.

1.4 This part of ISO 9806 is not applicable to unglazed solar collectors nor is it applicable to tracking concentrating solar collectors. (See ISO 9806-3 for a test method for unglazed collectors.)

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9806. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9806 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9060:1990, *Solar energy — Specification and classification of instruments for measuring hemispherical solar and direct solar radiation.*

ISO 9459-1:1993, *Solar heating — Domestic water heating systems — Part 1: Performance rating procedure using indoor test methods.*

ISO 9806-2:—¹⁾, *Test methods for solar collectors — Part 2: Qualification test procedures.*

1) To be published.

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