



Specific Accreditation Criteria

ISO/IEC 17025 Application Document Manufactured Goods - Annex

Thermal performance testing

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Thermal performance testing

This document provides interpretative criteria and recommendations for the application of ISO/IEC 17025 for both applicant and accredited facilities conducting thermal performance testing.

Applicant and accredited facilities must comply with all relevant documents in the NATA Accreditation Criteria (NAC) package for Manufactured Goods (refer to NATA Procedures for Accreditation).

The clause numbers in this document follow those of ISO/IEC 17025 but since not all clauses require interpretation the numbering may not be consecutive.

7 Process requirements

7.2 Selection, verification and validation of methods

7.2.1 Selection and verification of methods

7.2.1.1 When testing low density fibrous materials, extrapolation of results to different thicknesses outside the sample thickness(es) tested is not permitted.

Note: ASTM C653 states that extrapolation of the apparent thermal conductivity or the thermal resistance beyond the ranges of thickness or density of products tested is not valid.

7.2.2 Validation of methods

7.2.2.1 When testing compliance to AS/NZS 4859.1, if a facility does not use ASTM C653 and ASTM C167 to test low density fibrous insulation, then it must:

- document how it has determined the uniformity of performance of the samples tested to within the limits prescribed in AS/NZS 4859.1 clause 2.3.2 c;
- validate the method used in determining whether a statistically valid population has been used to achieve a 95% confidence level.

An appropriate description of the method used will be included in the scope of accreditation.

Where the product thickness is beyond the capacity of the facility's equipment, there must be a process to demonstrate that splitting of the sample is valid. This issue is addressed in EN 12939: *Thermal Performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter method-thick products of high and medium thermal resistance.*

7.6 Ensuring the validity of results

7.7.1 Proficiency testing completed prior to an initial assessment for thermal conductivity must include low density fibrous materials in cases where the facility requests to be accredited to test such materials.

7.8 Reporting of results

7.8.1 General

7.8.1.2 Facilities engaged in determining the thermal conductivity of materials must observe the following requirements, when applicable:

- the reporting requirements of all the relevant standards must be followed; for example, if the report is to AS/NZS 4859.1, the reporting requirements of that standard in addition to the reporting requirements of the relevant called-up standards (e.g. ASTM C518, ISO 8302, or ASTM C653 and ASTM C167), as appropriate, must be adhered to.
- a facility cannot report to a standard that is not in its scope of accreditation. For example, a facility accredited for ASTM C518 cannot issue an AS/NZS 4859.1 report.
- a statement as to how uniformity of performance was demonstrated must also be included on the test report.

7.8.3 Specific requirements for test reports

7.8.3.1 Facilities engaged in determining the thermal conductivity of materials must observe the following requirements, when applicable:

- AS/NZS 4859.1 compliance reports must clearly state the manufacturer's name and address and the Batch number in order to ensure there is clear traceability between the compliance report and the sample tested;
- if the manufacturer is not known, there must be a clear statement on the front page of the test report as follows:

Part testing only – this test has looked at the thermal resistance testing only as the manufacturer was not able to be identified.

Full compliance to AS/NZS 4859.1 cannot be stated.

Reports must describe the sample "as received".

7.8.6 Reporting statements of conformity

7.8.6.1 Facilities engaged in determining the thermal conductivity of materials must observe the following requirements, when applicable:

- when making a statement of conformity, the measurement uncertainty is not to be included in the assessment. However, if the facility's uncertainty means the result could have been below the compliance limit, the measurement uncertainty must be included in the test report.
- a statement of conformity to AS/NZS 4859.1 under clause 2.3.3.9 requires the average thermal resistance to be greater than or equal to the declared value (refer AS/NZS 4859.1 Clause 2.3.3.7). It is noted, the standard requires for the thermal resistance of 95% of the packs must be within 10% of the declared value.

References

This section lists publications referenced in this document. The year of publication is not included as it is expected that only current versions of the references shall be used.

Standards

AS/NZS 4859.1	Materials for the thermal insulation of buildings - General criteria and technical provisions
ASTM C167	Standard Test Methods for Thickness and Density of Blanket or Batt Thermal Insulations
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM C653	Standard Guide for Determination of the Thermal Resistance of Low-Density Blanket-Type Mineral Fiber Insulation
EN 12939	Thermal Performance of Building Materials and Products - Determination of Thermal Resistance By Means Of Guarded Hot Plate and Heat Flow Meter Methods - Thick Products of High and Medium Thermal Resistance
ISO 8302	Thermal insulation - Determination of steady-state thermal resistance and related properties - Guarded hot plate apparatus
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories

NATA publications

NATA Accreditation Criteria (NAC) package for Manufactured Goods

Amendment Table

The table below provides a summary of changes made to the document with this issue.

Section or Clause	Amendment
Whole document	<p>Clauses have been aligned with ISO/IEC 17025:2017.</p> <p>Any criteria included in the previous issue that are now covered by ISO/IEC 17025:2017 have been removed.</p> <p>No new interpretative criteria or recommendations have been included other than editorial changes.</p>