

INTERNATIONAL STANDARD

ISO
8144-1

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Thermal insulation — Mineral wool mats for ventilated roof spaces —

Part 1:

Specification for applications with restricted
ventilation

*Isolation thermique — Feutres en laine minérale pour sous-toitures
ventilées —*

*Partie 1: Spécifications pour application dans des conditions de ventilation
restreinte*



Reference number
ISO 8144-1:1995(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8144-1 was prepared by Technical Committee ISO/TC 163, *Thermal insulation*, Subcommittee SC 3, *Insulation products for building applications*.

ISO 8144 consists of the following parts, under the general title *Thermal insulation — Mineral wool mats for ventilated roof spaces*:

- *Part 1: Specification for applications with restricted ventilation*
- *Part 2: Specification for horizontal applications with unrestricted ventilation*

Annexes A, B and C form an integral part of this part of ISO 8144. Annexes D, E and F are for information only.

Thermal insulation — Mineral wool mats for ventilated roof spaces —

Part 1:

Specification for applications with restricted ventilation

1 Scope

This part of ISO 8144 specifies the properties and acceptable tolerances for bonded man-made mineral wool thermal insulating mats (batts and rolls). The mats specified in this part of ISO 8144 are for use within ventilated roof spaces of buildings where the essential ventilation of the roof space may be restricted if the thickness recovery of the insulation is excessive. [See annex E and ISO/TR 9774:1990 (figure 1, sketches 1 and 5) for typical locations.] They may be supplied flat, folded or in the form of a roll.

The properties to be declared by the manufacturer at the time of delivery are specified, as are some test methods for the determination of these properties. Essentially, mats do not change their properties and are dimensionally stable for the temperature and humidity conditions within a ventilated roof.

This part of ISO 8144 provides limiting values for most of the properties. These limiting values are for specification purposes only; design values may be derived from these by taking into account the environmental factors affecting the thermal performance of the product, the influence of the product properties on installation, and the effect of workmanship on the thermal performance. For converting declared R - or λ -values to design values, see, for example, ISO 10456.

Mats may be supplied with a factory-applied facing, but facings are not covered by this part of ISO 8144.

In general, mats are not designed to support any applied load. For this reason, only the mechanical properties required for adequate handling during application are specified.

The sampling and conformity control procedures described in annex D, and the certification procedure described in annex F, are recommendations only.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8144. 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 8144 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 7345:1987, *Thermal insulation — Physical quantities and definitions*.

ISO 8301:1991, *Thermal insulation — Determination of steady-state thermal resistance and related properties — Heat flow meter apparatus*.

ISO 8302:1991, *Thermal insulation — Determination of steady-state thermal resistance and related properties — Guarded hot plate apparatus*.

ISO/TR 9774:1990, *Thermal-insulation materials — Application categories and basic requirements — Guidelines for the harmonization of International Standards and other specifications*.

ISO 10456:—¹⁾, *Thermal insulation — Building materials and products — Determination of declared and design thermal values*.

3 Definitions

For the purposes of this part of ISO 8144, the following definitions apply.

3.1 mineral wool: Vitreous fibres having a woolly consistency made from rock, slag or glass.

3.2 mat: Flexible fibrous insulation supplied in the form of rolls or batts, which may be faced but not enclosed.

3.3 batt: Portion of a mat in the form of a rectangular piece, generally between 1 m and 3 m in length and usually supplied flat or folded.

3.4 roll: Mat supplied in the form of spirally wound cylindrical packages.

4 Sampling and conformity control

For the purposes of sampling and conformity control by inspection lots, the procedures described in annex D are recommended.

In plants where different product types are manufactured on the same production line within short intervals as regards time and quantity, it is recommended that production be subjected to a third-party certification system as described in annex F.

NOTE 1 Annexes D and F, which are not normative parts of this part of ISO 8144, provide some possible procedures for attestation of conformity which have to be agreed between the manufacturer and the consumer. A general International Standard on the procedure of attestation of conformity for all thermal insulation products is being prepared and will replace the common clauses of annexes.

1) To be published.

5 Required properties

5.1 Dimensions

The manufacturer shall declare the nominal length, width and thickness of the mats.

These dimensions shall be measured in accordance with annex A and shall be subject to the tolerances detailed in table 1. Tighter tolerances may be necessary for certain applications; these shall be agreed to by the supplier and purchaser.

5.2 Fire behaviour

These insulation materials, including any facings, shall meet the fire regulations and codes that apply in the locality in which they are applied.

Table 1 — Dimensional tolerances

Dimension	Permissible deviations of measured values from nominal dimensions	Test method
Length, <i>l</i>	− 2 %, + excess permitted on average of measured values for each single specimen	Clause A.1
Width, <i>b</i>	± 2 % or + 10 mm, whichever is less, on average of measured values for each single specimen	Clause A.1
Thickness, <i>d</i>	− 5 %, + 20 %, (the plus tolerance is limited to a maximum of + 15 mm) on average of all specimens tested For any single specimen, the measured thickness at each individual measuring point shall not deviate by more than 10 mm from the mean of measurement on that specimen	Clause A.2
Squareness of batts (rolls need not be tested)	For each 100 mm along the shortest face dimension, the maximum deviation shall not be more than 1 mm	Clause A.3

5.3 Thermal transmission properties

The thermal transmission properties of a product shall be declared by the manufacturer as either thermal resistance, *R*, or thermal conductivity, *λ* (see ISO 7345). The mean test temperature shall also be declared.