

TECHNICAL REPORT

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Thermal-insulation materials — Application categories and basic requirements — Guidelines for the harmonization of International Standards and other specifications

*Produits isolants thermiques pour le bâtiment — Catégories
d'applications et caractéristiques relatives aux performances
maximales — Guide pour l'harmonisation des Normes internationales et
autres spécifications*



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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.

The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/TR 9774, which is a Technical Report of type 3, was prepared jointly by Technical Committees ISO/TC 61, *Plastics*, and ISO/TC 163, *Thermal insulation*.

The form of a type 3 Technical Report has been chosen to enable the technical committees concerned to demonstrate, in their future standardization work, whether the basic requirements for any particular application of thermal insulation products for buildings are an appropriate basis for specifications.

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Thermal-insulation materials — Application categories and basic requirements — Guidelines for the harmonization of International Standards and other specifications

1. SCOPE

1.1 This Technical Report lists common applications for thermal insulating products for insulating of buildings and gives guidance on the selection of minimum performance characteristics.

This Technical Report is intended to serve as a background document for standardization and to assist in the harmonization of specifications for thermal insulating products of different origin.

This Technical Report is not intended to serve as a guide to users or producers to prove the suitability of any particular product or any given application.

The product properties listed for each application are expressed as minimum performance characteristics, which shall be maintained during the expected service life of the insulation within the structure^{*)}.

1.2 When standards or specifications are established or existing standards are revised on the basis of this Technical Report, the minimum performance characteristics of this Technical Report should in the standards or specifications be translated into product requirements (specified values) together with appropriate test methods, which must be fulfilled at the time of delivery, in order to ensure that the product fulfills the performance requirements in service. This relationship between specified values for the product and the service performance characteristic of the product in use can be different for different insulating products, depending on the characteristic of the material (e.g. aging or time-dependent behaviour). Not each basic requirement needs to be specified in each product standard, if it is obvious

- that certain requirements are always fulfilled
- that several requirements can be covered by one specified property.

^{*)} Note: The expected service lifetime depends on the application of the insulating product in the construction, taking into account the ease with which the product may be maintained or replaced. Service lifetime should be addressed by the product specifications.

1.3 This Technical Report applies only to prefabricated thermal insulating products. Products are any manufactured mats and boards including any facings or coverings, which may be present. The basic characteristics may also be applied to other insulation products, e.g. in situ, in systems or components, where appropriate.

The Technical Report covers only thermal insulating products for use in buildings within normal climatic conditions. It does not cover insulating products for building services, e.g. plumbing, heating and not for industrial use.

Acoustic properties are not included in the properties given in this Technical Report, although these may be additionally required for some application fields.

2. REFERENCE DOCUMENTS

ISO/TR 9165 : 1988, Practical thermal properties of building materials and products.

3. APPLICATIONS OF THERMAL INSULATING PRODUCTS IN BUILDINGS

A review of the most common applications of thermal insulating products in different structures of roofs, walls, ceilings and foundations is given in Table 1. The applications are illustrated in more detail in Figure 1.

The purpose of Figure 1 is only to illustrate the applications for the various insulating products and to assist in relating the performance characteristics for the products to their application. The Figure will also assist in determining requirements for other applications not listed.

The sketches are for illustration only and are not intended as construction drawings, for example water vapour barriers and air infiltration barriers which may be necessary, are not shown.

Waterproofings in the roof or foundation area are only shown to clarify the position of the insulation layer - in the area affected by precipi-