INTERNATIONAL STANDARD

ISO 12575-1

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Thermal insulation products — Exterior insulating systems for foundations —

Part 1: Material specification

Produits isolants thermiques — Applications externes aux murs des fondations —

Partie 1: Spécification des matériaux

Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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

ISO 12575-1 was prepared by Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 3, *Thermal insulation products*.

ISO 12575 consists of the following parts, under the general title *Thermal insulation products — Exterior insulating systems for foundations*:

— *Part 1: Material specification*

— *Part 2: Principal responsibilities of installers*

Introduction

ISO 12575 (all parts) defines a number of types of foundation insulating systems and outlines the different roles the insulation plays within each system.

This part of ISO 12575 provides specifiers, designers and engineers of insulation systems with guidelines on what properties are to be considered for the thermal insulating materials for a building foundation insulating system where the insulation is in direct contact with ground soils. The designer shall consult the appropriate national regulations and application specifications for minimum requirements.

The designer selects the actual material in accordance with this part of ISO 12575 for the type of system to be used in a specific application. The designer also consults the appropriate material standard and national regulations for the material selected for added characteristics not specified in this part of ISO 12575.

The manufacturer produces the material according to any applicable material standards, declares that their material type meets the requirements of this part of ISO 12575, declares the fitness for the intended use, and labels the material according to this part of ISO 12575.

The installer follows the requirements of the designer, the manufacturer, local government regulations, ISO 12575-2 and assumes responsibility for installation.

Included as part of the development of ISO 12575 (all parts) is the review of applicable CEN documents; CEN standards were harmonized where appropriate.

Moisture control for this application is only partially addressed in the optional requirements in this part of ISO 12575.

Calculation methods are addressed in ISO 13793 and ISO 13370.

Thermal insulation products — Exterior insulating systems for foundations —

Part 1: Material specification

1 Scope

This part of ISO 12575 specifies the basic performance requirements for the insulating materials that form part of insulating systems used on the exterior of foundations and slabs where the insulation is in direct contact with the ground. This part of ISO 12575 does not address exterior insulating systems for foundations permanently immersed in water.

Minimum requirements are specified in the appropriate national regulations and application specifications.

The designer selects the actual material in accordance with this part of ISO 12575 for the type of system being considered. The designer also consults the appropriate material standard and national regulations for the product selected for added characteristics not specified in this part of ISO 12575.

NOTE This part of ISO 12575 requires the use of other International Standards specific for thermal insulation materials.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 846, *Plastics — Evaluation of the action of microorganisms*

ISO 2896, *Rigid cellular plastics — Determination of water absorption*

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

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

ISO 10456, *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*

ISO 11561, *Ageing of thermal insulation materials — Determination of the long-term change in thermal resistance of closed-cell plastics (accelerated laboratory test methods)*

ISO 12575-2, *Thermal insulation products — Exterior insulating systems for foundations — Part 2: Principal responsibilities of installers*

ISO 12576-1, *Thermal insulation — Insulating materials and products for buildings — Conformity control systems — Part 1: Factory-made products*

ISO 20392, *Thermal-insulating materials — Determination of compressive creep*

ISO 20393, *Thermal-insulating materials — Determination of long-term water absorption by diffusion*

ISO 20394, *Thermal-insulating materials — Determination of freeze-thaw resistance*

ISO 29469, *Thermal insulating products for building applications — Determination of compressive behaviour*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
footing
linear foundation
widened section, usually concrete, at the base or bottom of a foundation wall pier or column to transfer and spread the load of the buildings onto the supporting soil

3.2
water absorption increase by freeze-thaw cycling
maximum additional increase in water absorption above the long-term water absorption when the insulation is subject to freeze-thaw cycling

NOTE 1 Before the freeze thaw test, the material is exposed to the water absorption test by diffusion.

NOTE 2 The water absorption increase is expressed in units of volume percent.

3.3
compressive strength reduction by freeze-thaw cycling
maximum reduction of the average compressive strength in dry condition of the product as tested prior to freeze-thaw testing and after subjecting the test specimen to freeze-thaw cycling

NOTE The compressive strength reduction is expressed in units of percent.

3.4
frost insulation
insulation that is positioned in the ground so as to protect the foundation from frost-related movement

3.5
load bearing insulation
insulation that is capable of supporting the load of the building on the ground or load bearing slabs

3.6
perimeter insulation
insulation installed against the vertical exterior surfaces of the perimeter foundation walls, linear footings and/or floors at or below ground level that is subject to soil loads only

4 Exterior-foundation insulation system applications

Table 1 defines four exterior-foundation insulation systems based on their application, together with the associated figure numbers showing examples of these applications for the different types of foundation systems.