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Glossary of  
**Thermal insulation terms**

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Glossaire de termes d'isolation thermique

Glossar von Ausdrücken der Wärmedämmung

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**Foreword**

BS 3533 was first issued in 1962. The standard originated as a result of work on the preparation of British Standards for the properties, methods of test and applications of thermal insulating materials in general; it was recognized that the nomenclature employed required definition in order to avoid misrepresentation.

In the present revision the text has been brought up to date with technical developments and takes into account the need for harmony with other standard glossaries in related fields published since 1962. It also takes account of current work being undertaken by the International Organization for Standardization (ISO).

This glossary is intended to explain terms used in the insulation industry rather than to provide a full list of relevant scientific definitions. For this reason the term 'description' is considered more appropriate than 'definition' as normally used in British Standard glossaries. The descriptions are however compatible with the scientific definitions given in BS 874 and other British

Standards publications. Where it has been considered to be helpful, the descriptions have been elaborated by explanatory notes, references and symbols.

Where units are indicated (in parentheses at the end of appropriate definitions), these are given in terms of the *Système International d'Unités* (abbreviated to 'SI units'). For details see PD 5686.

The glossary has been divided somewhat arbitrarily into four sections dealing respectively with physical properties, insulating materials, descriptive terms, and fittings and accessory materials. In view of the relative infrequency of associated terms, items in the four sections have been tabulated in alphabetical order and an index has been provided for ease of reference.

Preferred terms are printed in bold type, and non-preferred terms in non-bold type. Terms considered undesirable because their use could lead to confusion are followed by the word 'deprecated' in italics.

## British Standard Glossary of Thermal insulation terms

### References

The titles of the standards publications referred to in this standard are listed on the inside back cover.

### Section one. Physical properties

NOTE. For more detailed definitions of a number of the terms relating to thermal properties, see BS 874.

No.	Term	Description
101	<b>absorptivity</b>	The ratio of the amount of radiation absorbed by a surface to the amount falling on the surface. It can refer to radiation of any wavelength but commonly refers to solar radiation.
102	<b>air permeability</b>	The fluid permeability of a material where air is the given fluid. See 113.
103	<b>bulk density</b>	The mass per unit volume of the insulating material ( $\text{kg}/\text{m}^3$ ).
104	<b>compressibility</b>	The relation between deformation and applied mechanical pressure on a material.
105	<b>compressive strength</b> <b>crushing strength</b>	The capacity of a material to withstand mechanical pressure up to the point of fracture.  NOTE. For materials that do not fail by shattering, the compressive strength may be deduced arbitrarily from a load/deformation curve.
106	<b>convection coefficient (<math>f_c</math>)</b>	The quantity of heat transferred by convection in unit time to or from unit area of surface, divided by the temperature difference between the surface and the surrounding air or other fluid ( $\text{W}/(\text{m}^2 \text{K})$ ).
107	<b>covering capacity (dry)</b>	The area covered to unit thickness by unit mass of material as supplied, when it has been applied and dried to constant mass in accordance with BS 2972 ( $\text{m}^2$ per tonne at unit thickness).
108	<b>creep</b>	Progressive permanent deformation of a material under load.
109	<b>dimensional change</b> <b>(expansion or shrinkage)</b>	The increase or decrease in a characteristic dimension, which may be measured in linear, superficial or volumetric units.
110	<b>emissivity (<math>E</math>)</b>	The ratio of the thermal radiation from unit area of a surface to the radiation from unit area of a full emitter ('black body') at the same temperature.
111	<b>equivalent thermal conductivity</b>	The thermal conductivity assigned to a hypothetical uniform material of the same dimensions as a particular composite insulation that would give the same rate of heat flow under identical conditions.
112	<b>flexural strength</b> <b>modulus of rupture</b> <b>cross-breaking strength</b>	The capacity of a material to withstand bending up to the point of fracture.
113	<b>fluid permeability</b>	The property of a material that determines the rate at which a given fluid passes through it under the influence of unit pressure gradient. See 102.
114	<b>mean free path</b>	The average distance travelled by a gas molecule between successive collisions with other molecules.
115	<b>nominal thickness</b> <b>designated thickness</b>	Manufactured thickness within agreed tolerances.
116	<b>packing density</b>	The bulk density of loose-fill insulating material after application.
117	<b>permanent set</b>	The deformation of a material that remains after removal of the deforming stress.
118	<b>porosity (apparent)</b>	The volume of open pores in a material expressed as a percentage of the total volume of the material.