

BRITISH STANDARD

Rigid polyisocyanurate (PIR) and polyurethane (PUR) products for building end-use applications –

Part 2: Specification for laminated boards with auto-adhesively bonded facings for use as thermal insulation for internal wall linings and ceilings

ICS 91.100.60

Confirmed December 2011

BSi
British Standards

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

Documents
Document Sharing Hub

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© BSI 2006

ISBN 0 580 48190 5

The following BSI references relate to the work on this standard:

Committee reference PRI/72/4

Draft for comment 05/30121972 DC

Publication history

First published, July 1975

Second edition, July 2006

Amendments issued since publication

Amd. no.	Date	Text affected
-----------------	-------------	----------------------

Contents

Foreword *ii*

0	Introduction	<i>1</i>
1	Scope	<i>1</i>
2	Normative references	<i>1</i>
3	Terms, symbols and definitions	<i>2</i>
4	Construction and composition	<i>2</i>
5	Requirements	<i>3</i>
6	Designation	<i>6</i>
7	Marking	<i>6</i>

Annexes

Annex A (informative)	Method for the determination of areas of unbonded facings	<i>7</i>
Annex B (informative)	Information for users and designers	<i>9</i>
Annex C (informative)	Fire performance of PIR and PUR insulation products and fire recommendations regarding their use	<i>9</i>
Annex D (informative)	Notes to installers	<i>10</i>

Bibliography *12*

List of figures

Figure 1	Diagram to explain orientations for compressive strength measurements	<i>5</i>
Figure A.1	Determination of area(s) of unbonded facings: cutting and marking of the test specimen	<i>8</i>

List of tables

Table 1	Tolerances for lengths and widths	<i>3</i>
Table 2	Classes for thickness tolerances	<i>3</i>
Table 3	Deviation from flatness	<i>4</i>

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard was published by BSI and came into effect on 20 July 2006. It was prepared by Subcommittee PRI/72/4, *Polyurethane*, under the authority of Technical Committee PRI/72, *Rigid cellular materials*.

Supersession

This part of BS 4841 supersedes BS 4841-2:1975, which is withdrawn.

Information about this document

This British Standard has been introduced to specify the requirements needed to ensure fitness for purpose of those rigid polyurethane and polyisocyanurate cored laminated insulation boards with auto-adhesively or separately bonded flexible and/or rigid facings used in the insulation of internal walls and ceilings of buildings in the United Kingdom. The requirements have been written so that products conforming to BS 4841-2 also conform to BS EN 13165:2001 (including amendments 1 and 2) whilst satisfying the specified minimum performance levels of the properties included in the current standard.

Additional information for the guidance of users, installers and designers is given in informative Annexes A, B, C and D to this standard.

The other parts of BS 4841 have also been revised to reflect recent technical advances and to take into account the European Standard BS EN 13165:2001 (including amendments 1 and 2).

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are presented in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal obligations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

0 Introduction

For more than 30 years the types of wall and ceiling products described in this standard have been safely used in the UK as non-loadbearing insulated internal wall linings and ceiling products which are usually fixed to a masonry supporting structure. Because of their high thermal efficiency these products provide the necessary insulation requirement at minimum thickness. In this way the loss of usable internal space in the room is minimized.

These composite products have either two flexible faces bonded to the core or more frequently one substantial rigid facing (usually plasterboard) and a flexible face so that the product is installed with the plasterboard facing the interior of the room.

1 Scope

This British Standard specifies requirements for rigid polyisocyanurate (PIR) and polyurethane (PUR) cored laminated insulation boards with auto-adhesively or separately bonded flexible or substantial rigid facings, for use as thermal insulation for internal wall linings and ceilings. The standard also applies to products with one flexible and one substantial rigid facing.

NOTE 1 Because of the changes introduced into this standard, products conforming to this standard also conform to BS EN 13165:2001 (including amendments 1 and 2).

NOTE 2 Additional information for the guidance of users, installers and designers is given in informative Annexes A, B, C, and D to this standard.

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.

BS EN 822:1995, *Thermal insulating products for building applications – Determination of length and width*

BS EN 823, *Thermal insulating products for building applications – Determination of thickness*

BS EN 825:1995, *Thermal insulating products for building applications – Determination of flatness*

BS EN 826:1996, *Thermal insulating products for building applications – Determination of compression behaviour*

BS EN 1607:1997, *Thermal insulating products for building applications – Determination of tensile strength perpendicular to faces*

BS EN 13165:2001 (including amendments 1 and 2), *Thermal insulation products for buildings – Factory made rigid polyurethane foam (PUR) products – Specification*

BS EN 13501-1:2002, *Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests*

3 Terms, symbols and definitions

3.1 Terms and definitions

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

3.1.1 auto-adhesively bonded facing

NOTE These facings can be flexible or rigid.

facing that becomes bonded onto the PIR or PUR core during the process of creating it

3.1.2 separately bonded facing

NOTE These facings can be flexible or rigid.

facing that is bonded onto the PIR or PUR core in a separate manufacturing process

3.1.3 polyisocyanurate product

rigid cellular plastics insulation product with a substantially closed cell structure mainly based on polymers of the isocyanurate type

3.1.4 polyurethane product

rigid cellular plastics insulation product with a substantially closed cell structure mainly based on polymers of the polyurethane type

3.2 Symbols

d_N	nominal thickness of the product in mm
λ_D	declared thermal conductivity in mW/(m·K)
S_b	deviation from squareness in mm/m
S_{max}	maximum deviation from flatness in mm/m

4 Construction and composition

4.1 General

The insulation boards shall consist of an insulating core (4.2) with either two bonded flexible facings (4.3) or two rigid facings (4.4), or one flexible facing (4.3) and one substantial rigid facing (4.4).

4.2 Flexible facings

The flexible facings of the insulation boards shall be either functional or decorative, e.g. paper, metal foil, glass tissue or mineralized glass with a minimum weight of 100 g/m² or polyethylene coated glass fibre.

NOTE The two facings need not be identical.