

BRITISH STANDARD

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

**Part 3: Specification for laminated
boards (roofboards) with auto-
adhesively or separately bonded
facings for use as roofboard thermal
insulation under built up bituminous
roofing membranes**

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This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 15, 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This part of BS 4841 supersedes BS 4841-3:1994, which is withdrawn.

Information about this document

BS 4841-3:1987 was based on a draft quality assurance guide¹⁾, derived from a co-operative study between the British Rigid Urethane Foam Manufacturers' Association (BRUFMA) and the Felt Roofing Contractors' Advisory Board (FRCAB)²⁾. It provided requirements for two types of thermal insulating polyurethane and polyisocyanurate cored roofboards, faced on the two major faces with either auto-adhesively or separately bonded facings, and suitable for use beneath built-up bituminous felt roofing membranes.

This edition introduces technical changes to reflect a full revision of the standard whilst taking into account the European Standard BS EN 13165:2001 (including amendments 1 and 2) for PIR and PUR factory made insulation products and now incorporates the European test methods. Attention is drawn to BS 8217:1984 which describes the recommended practice for laying the roofboards conforming to this standard, into roof structures and their weatherproofing, to maximise their service performance after installation.

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

¹⁾ First issued by BRUFMA and FRCAB in 1979.

²⁾ Now the Flat Roofing Alliance.

1 Scope

This British Standard specifies requirements for rigid polyisocyanurate (PIR) and polyurethane (PUR) cored laminated boards (roofboards) with auto-adhesively or separately bonded flexible and/or rigid facings, for use as roofboard thermal insulation under built-up bituminous roofing membranes. The standard also applies to product roofboards with one flexible and one rigid facing.

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

NOTE 2 Additional information for the guidance of users, installers and designers is given in informative Annexes A, B, C, D and E 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 3690-2:1989, *Bitumens for building and civil engineering – Part 2: Specification for bitumens for industrial purposes*

BS EN 300:1997, *Oriented strand boards (OSB) – Definitions, classification and specifications*

BS EN 636:2003, *Plywood – Specifications*

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 824, *Thermal insulating products for building applications – Determination of squareness*

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 1426, *Methods of test for petroleum and its products – Bitumen and bituminous binders – Determination of needle penetration*

BS EN 1427, *Methods of test for petroleum and its products – Bitumen and bituminous binders – Determination of softening point – Ring and ball method*

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

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

BS EN 13169:2001, *Thermal insulation products for buildings – Factory made products of expanded perlite (EPB) – Specification*

BS EN 13170:2001, *Thermal insulation products for buildings – Factory made products of expanded cork (ICB) – Specification*

BS EN 13171:2001, *Thermal insulation products for buildings – Factory made wood fibre (WF) products – Specification*

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

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this part of BS 4841 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 material or product with a substantially closed cell structure mainly based on polymers of the isocyanurate type

3.1.4 polyurethane product

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

3.2 Symbols

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

4 Construction and composition

4.1 General

The roofboards 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 rigid facing (4.4).

4.2 Core product type

The cores of the product type shall be of rigid polyisocyanurate (PIR) or polyurethane (PUR).