

EGGER Holzwerkstoffe Wismar GmbH & Co KG

Am Haffeld 01
D-23970 Wismar
Germany

Tel: 00 49 3841 301 21250 Fax: 00 49 3841 301 20222
e-mail: info.uk@egger.com
website: www.egger.com



Agrément Certificate
08/4546
Product Sheet 1

EUROSTRAND BOARDS

EUROSTRAND OSB 3 AND OSB 3 E0 BOARDS FOR FLOORING

This Agrément Certificate Product Sheet⁽¹⁾ relates to Eurostrand OSB 3 and OSB 3 E0 Board for Flooring, loadbearing oriented strand panels suitable for use as structural floor decking on joists in domestic, residential and office buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Structural performance — the panels, when incorporated into a floor structure, can contribute to structural strength and stiffness by distributing the dead and imposed loads to the supporting structure (see section 6).

Behaviour in relation to fire — for reaction to fire, the panels may be regarded as having a class 3 surface spread of flame rating (see section 7).

Resistance to moisture — the panels have adequate moisture resistance (see section 8).

Durability — the completed flooring will have a life equal to that of the building in which it is installed (see section 11).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 2 May 2013

Brian Chamberlain
Head of Approvals — Engineering

Greg Cooper
Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

British Board of Agrément
Bucknalls Lane
Watford
Herts WD25 9BA

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tel: 01923 665300
fax: 01923 665301
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk

Regulations

In the opinion of the BBA, Eurostrand OSB 3 and OSB 3 E0 Boards for Flooring, if installed, used and maintained in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement: A1	Loading
Comment:	The product has sufficient strength and stiffness to sustain and transmit design loads to the primary structure without excessive deflection. See sections 4.1 and 6 of this Certificate.
Requirement: B3(1)(3)(4)	Internal fire spread (structure)
Comment:	The product can contribute to meeting this Requirement. See section 7 of this Certificate.
Regulation: 7	Materials and workmanship
Comment:	The product is acceptable. See sections 11.1 and 11.2 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)	Fitness and durability of materials and workmanship
Comment:	The use of the product satisfies the requirements of this Regulation. See sections 11.1 and 11.2 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards applicable to construction
Standard: 1.1(a)(b)	Structure
Comment:	The product has sufficient strength and stiffness to sustain and transmit design loads to the primary structure without excessive deflection, in accordance with clause 1.1.1 ⁽¹⁾ , 1.1.2 ⁽¹⁾ and 1.1.3 ⁽¹⁾ of this Standard. See sections 4.1 and 6 of this Certificate.
Standard: 2.2	Separation
Standard: 2.3	Structural protection
Standard: 2.9	Escape
Comment:	The product can contribute to meeting regulatory requirements in accordance with clauses 2.2.1 ⁽¹⁾ , 2.2.2 ⁽¹⁾ , 2.2.3 ⁽¹⁾ , 2.2.4 ⁽¹⁾ , 2.2.6 ⁽¹⁾ , 2.2.8 ⁽¹⁾ and 2.3.2 ⁽¹⁾ . See section 7 of this Certificate.
Standard: 7.1(a)(b)	Statement of sustainability
Comment:	The product can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. (1) Technical Handbook (Domestic).



The Building Regulations (Northern Ireland) 2012

Regulation: 23(a)(i)(iii)(b)	Fitness of materials and workmanship
Comment:	The product is acceptable. See sections 11.1 and 11.2 and the <i>Installation</i> part of this Certificate.
Regulation: 30	Stability
Comment:	The product has sufficient strength and stiffness to sustain and transmit design loads to the primary structure without excessive deflection. See sections 4.1 and 6 of this Certificate.
Regulation: 35(3)(4)	Internal fire spread – Structure
Comment:	The product can contribute to meeting regulatory requirements. See section 7 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See sections: 3 *Delivery and site handling* (3.5) and 12 *General* (12.2) of this Certificate.

Non-regulatory Information

NHBC Standards 2013

NHBC accepts the use of Eurostrand OSB 3 and OSB 3 E0 Board for Flooring, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapters 5.2 *Suspended ground floors* and 8.3 *Floor finishes*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European Standard BS EN 13986 : 2004. An asterisk (*) appearing in this Certificate indicates that data shown is given in the manufacturer's Declaration of Performance.

Technical Specification

1 Description

1.1 Eurostrand OSB 3 Board for Flooring comprises softwood flakes/strands bonded together with MUF (melamine-urea formaldehyde) resin, MDI (diisocyanate diphenylmethane) binder and wax. Eurostrand OSB 3 EO Board for Flooring comprises softwood flakes/strands bonded together with formaldehyde-free MDI binder glue in core and surface layer.

1.2 The panel is produced in standard sizes⁽¹⁾ of:

thickness (mm)	15, 18, 22 and 25
length by width (mm)	2440 x 1220, 2500 x 1250,
Nominal density (kg·m ⁻³)	≥ 600.

(1) Other thicknesses (in range of 15 mm to 25 mm) and sizes are available to order

1.3 The panel is available with square edges as well as tongue-and-groove edges. It is either sanded or unsanded.

2 Manufacture

2.1 The panel is manufactured to the specification detailed in BS EN 300 : 2006 for OSB/3, loadbearing oriented strand boards. Timber logs, to the Certificate holder's specification, are debarked and cut into strands. After drying and screening to remove fines, the strands/flakes are blended with resin, binder and wax and formed into a three-ply mat. In the outer two layers the strands/flakes (and woodgrain) are bound with resin and oriented in the direction of the major axis; in the core layer the strands are in the direction of the minor axis. The panel is formed by curing the mat under pressure and temperature and cutting to size.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Egger Holzwerkstoffe Wismar GmbH & Co KG has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by IQNet and Quality Austria (Certificate AT-00184/0).

2.4 The product is manufactured in Germany by the Certificate holder, and distributed in the UK by EGGER (UK) Limited, Anick Grange Road, Hexham, Northumberland NE46 4JS. Tel: 01434 602191, Fax: 01434 605103, e-mail: building.uk@egger.com website: www.egger.com

3 Delivery and site handling

3.1 Handling, storage and delivery of the panels should be carried out in accordance with the requirements of DD CEN/TS 12872 : 2007 and BS 8103-3 : 2009.

3.2 To prevent distortion, panels should be stacked flat, clear of the floor, on level bearers, at centres not exceeding 600 mm. The top board should be covered to prevent warping.

3.3 The panels should be stored on a level surface in a dry environment.

3.4 Each standard size panel bears the product name, the production date and time, nominal thickness, 'EN 13986', 'OSB/3', 'E1' (formaldehyde class), and the BBA Certificate number. Where panels are cut to special order this information is given on a label attached to the packaging.

3.5 For delivery, the panels are banded together in bundles up to 2 tonnes in weight and 1030 mm in height. The panels are covered in transit to minimise changes in moisture content. Particular care should be taken to protect the edges and corners. Banding should be cut on arrival at site but protective covering should not be removed until the panels are ready for conditioning (see section 8.4).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Eurostrand OSB 3 and OSB 3 EO Boards for Flooring.

4 General



4.1 Eurostrand OSB 3 and OSB 3 E0 Boards are suitable for use as flooring on domestic residential and office buildings (load category A and B as defined in BS EN 1991-1-1 : 2002) as specified for OSB/3 in DD CEN/TS 12872 : 2007 or BS 8103-3 : 2009. The panels may be supported on joists, battens or solid floors.

4.2 The panels are suitable for use in dry and humid conditions, corresponding to service classes 1 and 2 respectively of BS EN 1995-1-1 : 2004. This is characterised by a moisture content in the material corresponding to a temperature of 20°C and a relative humidity of the surrounding air exceeding 85% for only a few weeks per year.

4.3 Design and installation of the panel should be in accordance with BS EN 1995-1-1 : 2004 and DD CEN/TS 12872 : 2007 or BS 8103-3 : 2009.

4.4 In accordance with BS EN 300 : 2006, the Eurostrand OSB 3 and OSB 3 E0 Boards are suitable for use in environmental conditions covered by biological hazard class 2 for wood and wood-based products, as defined in BS EN 335-3 : 1996. In such environments, the panels are covered and fully protected from the elements. Prolonged exposure to an air temperature of 20°C and a relative humidity of 90% may result in the recommended moisture content being exceeded.

4.5 The design thermal conductivity of OSB, given in BS EN 12524 : 2000, is $0.13 \text{ W}\cdot\text{m}^{-1}\text{K}^{-1}$ and as such will not have a significant effect on the thermal transmittance (U value) of the floor construction.

4.6 In suspended timber floor applications:

- the panels must have a minimum thickness of 15 mm (in domestic applications) and 18 mm (in non-domestic applications)
- timber support work must be designed and used in accordance with BS EN 1995-1-1 : 2004 and/or the relevant building regulations
- ventilation underneath ground floors must be provided in accordance with BS 5250 : 2002. The ground beneath the floor should be free of topsoil and vegetation matter and be covered to resist moisture and prevent plant growth.

4.7 The panel will provide a suitable substrate for loose-laid floor coverings or those bonded with solvent or water-based adhesives. Resilient floor coverings such as cork, linoleum, rubber, or vinyl should be laid in accordance with BS 8203 : 2001.

5 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor, experienced with this type of product.

6 Structural performance



6.1 For domestic loading for buildings within the scope of BS 8103-3 : 2009 (low-rise buildings), OSB 3 and OSB 3 E0 floor decks should be designed with a minimum panel thickness of 15 mm for joist spacing up to 450 mm and 18 mm for joist spacing up to 600 mm, for domestic loading.

6.2 For floor applications not covered by BS 8103-3 : 2009, designers need to ensure that the selected panel will meet the load requirements specified in BS EN 1991-1-1 : 2002. Characteristic values for structural design using Eurostrand OSB 3 and OSB 3 E0 Boards may be taken from BS EN 12369-1 : 2001.

7 Behaviour in relation to fire



7.1 Both grades of OSB 3 and OSB 3 E0 Board, when tested in accordance with BS 476-7 : 1997, achieved a Class 3 surface spread of flame rating.

7.2 The fire resistance of other floor constructions incorporating the panel may be calculated with reference to BS EN 1995-1-2 : 2004 or, where necessary, by undertaking an appropriate test at a United Kingdom Accreditation Service (UKAS) laboratory accredited for the test concerned.

8 Resistance to moisture

8.1 In common with all timber products, OSB 3 and OSB 3 E0 are subject to moisture movement. As a guide, an increase in moisture content of 1% increases the length by 0.02%, width by 0.03% and thickness by 0.5%.

8.2 Under similar environmental conditions, OSB 3 and OSB 3 E0 will take longer to equilibrate and will attain an equilibrium moisture content approximately 2% to 3% lower than solid timber.

8.3 To avoid distortion and damage to finishes, movement gaps, in accordance with the recommendations of DD CEN/TS 12872 : 2007, should be provided when installing the panel.

8.4 To minimise subsequent movement, before installation all wet site operations should be completed and the panel conditioned as close as is practicable to the environmental conditions likely to occur in service. To achieve this, the maximum moisture content of the panel at the time of installation or fixing, as determined using a properly-calibrated

moisture meter, should be as given in BS 8103-3 : 2009, Annex A, Table A.1 (ie 12%). When quality of finish is of prime importance, floor panels should be laid at a moisture content within the range likely to be encountered in service and after the initial drying-out period is complete. The range of moisture content at the time of laying depends mainly on the type and intensity of heating to be employed in the building. As a guide, in accordance with BS 8103-3 : 2009, Annex A, Table A.1 (footnote), under normal circumstances, moisture content ranges encountered for various heating conditions are:

unheated:	15% to 19%
intermittent heating:	10% to 14%
continuous heating:	9% to 11%
underfloor heating:	6% to 8%.

8.5 Damp-proof membranes and vapour control layers should be incorporated as necessary in accordance with the requirements of BS 8103-3 : 2009 and BS 5250 : 2002.

8.6 In a floor construction, in calculations for interstitial condensation according to BS 5250 : 2002, the water vapour resistance factor (μ) of OSB 3 can be taken as 50 (dry cup) from BS EN ISO 10456 : 2007, Table 3 depending on the construction, or determined by testing in accordance with BS EN ISO 12572 : 2001.

8.7 Exposure to the elements should be minimised during installation. If wetted, the panels must be allowed to dry out thoroughly before applying any floor coverings or surface coatings, or applying the full design load.

8.8 When used in high risk areas, such as kitchens and bathrooms, the panel must be protected from wetting, eg by providing a continuous waterproof covering, turned up and sealed at junctions with walls and where services pass through the floor.

9 Formaldehyde content

The panels achieve a Class E1 formaldehyde specification in accordance with BS EN 300 : 2006. The OSB 3 E0 is bonded with formaldehyde-free MDI binder glue in core and surface layer, therefore, when used in accordance with this Certificate, the quantity of formaldehyde gas emitted from the panel alone will not raise the overall building level to an extent which will affect habitability.

10 Maintenance

As the product has suitable durability, will normally be confined within the flooring structure and, in most cases, will be covered with finishes, maintenance is not required.

11 Durability



11.1 The panel will have adequate durability and should have a life equal to that of the floor in which it is installed.

11.2 Care should be taken when designing, detailing and constructing buildings to ensure that moisture does not accommodate within the panel.

11.3 Under normal conditions of use the panels are unlikely to suffer damage, but if damage does occur, repairs can be carried out in accordance with the Certificate holder's instructions.

Installation

12 General

12.1 Eurostrand OSB 3 and OSB 3 E0 Boards for flooring are easily cut and fixed using conventional woodworking tools. Normal precautions should be taken to avoid inhalation of wood dust when cutting, drilling and sanding the panels.

12.2 The panel can withstand normal site handling and fixing. Damaged panels should not be used. Normal safety precautions should be observed when handling large panels.

13 Procedure

Installation of Eurostrand OSB 3 and OSB 3 E0 should be by use of conventional methods in accordance with DD CEN/TS 12872 : 2007 or BS 8103-3 : 2009 and the Certificate holder's recommendations.

Technical Investigations

14 Tests

Tests were carried out by independent laboratories on:

- material characteristics in accordance with the requirements of BS EN 300 : 1997 for OSB 3
- surface spread of flame in accordance with BS 476-7 : 1997
- hard body impact resistance in accordance with BS EN 1128 : 1996.

15 Investigations

15.1 An assessment was made of the product's durability and behaviour in relation to moisture.

Bibliography

- BS 476-7 : 1997 *Fire tests on building materials and structures — Method of test to determine the classification of the surface spread of flame of products*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS 8103-3 : 2009 *Structural design of low-rise buildings — Code of practice for timber floors and roofs for housing*
- BS 8203 : 1996 *Code of practice for installation of resilient floor coverings*
- BS EN 300 : 2006 *Oriented Strand Boards (OSB) — Definitions, classification and specifications*
- BS EN 335-3 : 1996 *Durability of wood and wood-based products — Definition of hazard classes of biological attack — Application to wood-based panels*
- BS EN 1128 : 1996 *Cement-bonded particleboards. Determination of hard body impact resistance*
- BS EN 1991-1-1 : 2002 *Eurocode 1 — Actions on structures — General Actions — Densities, self-weight, imposed loads for buildings*
- BS EN 1995-1-1 : 2004 *Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*
- BS EN 1995-1-2 : 2004 *UK National Annex to Eurocode 5 : Design of timber structures — General — Structural fire design*
- BS EN 12524 : 2000 *Building materials and products — Hygrothermal properties — Tabulated design values*
- BS EN ISO 10456 : 2007 *Building materials and products — Hygrothermal properties — Tabulated design values and procedures for determining declared and design thermal values*
- BS EN ISO 12572 : 2001 *Hygrothermal performance of building materials and products. Determination of water vapour transmission properties*
- BS DD/CEN/TS 12872 : 2007 *Wood-based panels — Guidance on the use of load-bearing boards in floors, walls and roofs*

16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

16.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

16.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

16.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

16.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.