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Agrément Certificate
02/3934
Product Sheet 1

NORBORD FLOORING BOARDS

CABERDEK

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Caberdek, a P5 flooring grade chipboard, faced on one side with a cross-orientated, laminated polyethylene peel-off film, for use in joisted floor construction. The film, together with glued and taped joints, provides temporary weather protection to the boards prior to completion of the building envelope.

AGRÉMENT 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

Resistance to weather — a constructed floor will have satisfactory resistance to weather and can be left exposed for up to 42 days (see section 5).

Slip resistance — the peel-off film has a moderate potential for slip in wet conditions, and a low potential for slip in dry conditions (see section 6).

Properties in relation to fire — chipboard is given a Class 3 classification by Appendix A, Table A8 of Approved Document B of the Building Regulations 2010 (England and Wales) (see section 7).

Impact resistance — the boards have satisfactory resistance to impact (see section 8).

Durability — the completed flooring will have a life equal to 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. The 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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of Second issue: 20 September 2011

Originally certificated on 17 June 2002

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.

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Regulations

In the opinion of the BBA, Caberdek, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales)

Requirement: A1(1)	Loading
Comment:	The product has sufficient strength and stiffness to sustain and transmit the design load, without excessive deflection to the primary structure. See section 3.1 of this Certificate.
Requirement: B3(1)(3)	Internal fire spread (structure)
Comment:	The product can contribute to meeting this Requirement. See sections 7.1 to 7.3 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The product is acceptable. See section 11 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 product can contribute to a construction meeting this Regulation. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards – construction
Standard: 1.1(a)	Structure
Comment:	The product has sufficient strength and stiffness to sustain and transmit the design load, without excessive deflection, to the primary structure, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See section 3.1 of this Certificate.
Standard: 2.3	Structural protection
Comment:	The product can contribute to a construction satisfying this Standard, with reference to clauses 2.3.0 ⁽¹⁾⁽²⁾ , 2.3.1 ⁽¹⁾⁽²⁾ , 2.3.2 ⁽¹⁾⁽²⁾ and 2.3.3 ⁽¹⁾⁽²⁾ . See sections 7.1 to 7.3 of this Certificate.
Standard: 7.1(a)	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.
Regulation: 12	Building standards – conversions
Comment:	Comments made in relation to the product under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1 ⁽¹⁾⁽²⁾ and Schedule 6 ⁽¹⁾⁽²⁾ . (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation: B2	Fitness of materials and workmanship
Comment:	The product is acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation: D1	Stability
Comment:	The product has sufficient strength and stiffness to sustain and transmit the design load, without excessive deflection, to the primary structure. See section 3.1 of this Certificate.
Regulation: E4(1)(3)	Internal fire spread – Structure
Comment:	The product can contribute to meeting this Regulation. See sections 7.1 to 7.3 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: 1 *Description* (1.2), 2 *Delivery and site handling* (2.2), 6 *Slip resistance* of this Certificate.

Non-regulatory Information

NHBC Standards 2011

NHBC accepts the use of Caberdek, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.4 *Timber and concrete upper floors*, 6.10 *Light steel framed walls and floors* and 8.3 *Floor finishes*.

Technical Specification

1 Description

1.1 This Certificate relates to Caberdek, a P5 flooring grade chipboard, faced on one side with a cross-orientated, laminated peel-off film. The boards are manufactured in accordance with BS EN 312 : 2010.

1.2 The product characteristics are:

Thickness (mm)	18, 22
Length (mm)	2400
Width (mm)	600
Density (kg·m ⁻³)	600 to 690
Edge profile	tongue-and-groove ⁽¹⁾

(1) TG2 panels, which are available as 2400 mm by 1200 mm boards with the tongue-and-groove down the longer edges only, may be used but the butt joints must be bonded using a D3 type adhesive.

1.3 In the manufacturing process, chipboard, laminate and adhesive are brought together under controlled pressure, temperature and line speed. Quality control is carried out on raw materials, during manufacture, and on the finished product.

1.4 Ancillary components comprise:

- Caberfix water-resistant tape — for taping joints between boards and for application to exposed board edges
- Caberfix T&G Jointing Adhesive — a PVA adhesive to BS EN 204 : 2001, Class D3, for use in bonding board joints
- Caberfix Joint & Joist Adhesive — a one-part polyurethane adhesive for bonding the boards to joists
- annular ring-shank nails, 55 mm long for 22 mm thick boards and 50 mm long for 18 mm boards
- Posidrive No 8 particle screws of length 50 mm.

2 Delivery and site handling

2.1 The boards are delivered in banded packs, wrapped in polythene. Each pack contains a label bearing the product name, board thickness and type.

2.2 The boards are supplied in pack sizes given in Table 1.

Table 1 Pack sizes

Thickness (mm)	No of panels per pack	Approx weight (tonne)
18	80	1.4
22	66	1.4

2.3 Boards should be stored off the ground, preferably on bearers, to allow air to circulate. If stored outside, the boards must be protected with a weatherproof sheeting.

2.4 Caberfix Joint & Joist Adhesive should be stored under cover, in the original packaging, between temperatures of 5°C and 25°C. The adhesive has a shelf-life of 12 months.

2.5 Caberfix Joint & Joist Adhesive is classified as 'harmful' under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP4)/Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) 2009*. Containers bear the appropriate hazard warning.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Caberdek.

Design Considerations

3 Use



3.1 Caberdek is suitable for use as a flooring grade chipboard in joisted constructions and conforms to the requirements of BS EN 312 : 2010.

3.2 With glued and taped joints, the flooring boards can be left exposed to the weather for a period of up to 42 days during the building process.

4 Practicability of installation

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

5 Resistance to weather

5.1 When subjected to standing water for a period of 42 days, a test floor with glued and taped joints performed satisfactorily.

5.2 In persistently wet conditions, some water penetration may be expected. This could result in some swelling around joints and nail fixings.

6 Slip resistance

Slip resistance values indicate that the boards have a moderate potential for slip in wet conditions and a low potential for slip in dry conditions. The results of the performance tests and the classification of slip resistance are given in Table 2.

Results of test	4S/standard pedestrian hard rubber (shoes)	Classification ⁽²⁾
–	<25	high slip potential
25 (wet)	25–35	moderate slip potential
38 (dry)	>36	low slip potential

(1) TRL Pendulum test.

(2) This classification is based on the pendulum test value (PTV) and the recommendations given in *The Assessment of Floor Slip Resistance : The UK Slip Resistance Group Guidelines : Issue 3 : 2005*.

7 Properties in relation to fire



7.1 An assessment of the chipboard to BS 476-7 : 1997 gave a classification of Class 3 Surface spread of flame and is also given a Class 3 classification by Appendix A, Table 8 of Approved Document B to the Building Regulations 2010 (England and Wales).

7.2 As detailed in BRE report (BR 128 : 1988) *Guidelines for construction of fire-resisting structural elements*, an intermediate floor construction incorporating tongue-and-groove boards supported on timber joists at least 37 mm wide, a ceiling of 12.5 mm thick plasterboard, fixed with 40 mm long galvanized nails at 150 mm centres, joints taped and filled, and backed by timber has been assessed as having a fire-resistance rating (in minutes) of:

Loadbearing capacity 30

Integrity 15

Insulation 15

7.3 Where any other form of floor construction incorporating the product is subject to fire-resistance requirements, an appropriate assessment of test must be carried out by a UK Accreditation Service (UKAS) laboratory accredited for the test concerned.

8 Impact resistance

The boards have satisfactory resistance to hard body impact.

9 Formaldehyde

The boards achieve a Class E1 formaldehyde specification to BS EN 13986 : 2004 and BS EN 312 : 2010.

10 Maintenance

As the product is normally covered with a floor finish and has suitable durability (see section 11), maintenance is not required, however where damage has occurred it should be repaired promptly (see section 15).

11 Durability



Provided the product is fixed to suitably, stable and durable floor joists, it will have a life equal to that of the building in which it is installed.

Installation

12 General

12.1 Installation of Caberdek boards must be carried out in dry conditions.

12.2 During periods of severe weather it is advisable to remove any pools of standing water prior to commencing work on the installed floor.

12.3 Floor joists and beams must be secured and braced before laying the boards. Prior to fixing, any standing water or moisture on surface flanges should be wiped down.

12.4 On joists up to 450 mm centres, 18 mm thick panels may be used. On joists of wider spacing, up to 600 mm centres, 22 mm thick panels must be used.

12.5 Future access to any pipes and services running between joists should be ensured. Traps for this purpose should be supported on all sides. If access traps are cut and edges supported, the cut edges must be protected from water by application of Caberfix water-resistant tape.

12.6 Any exposed edges around the perimeter must be sealed using Caberfix water-resistant tape prior to laying the product.

13 Supervision of workmanship

The level of supervision during installation of Caberdek and the associated structure must be sufficient to ensure the quality of workmanship described in BS 8000-5 : 1990.

14 Procedure

Laying

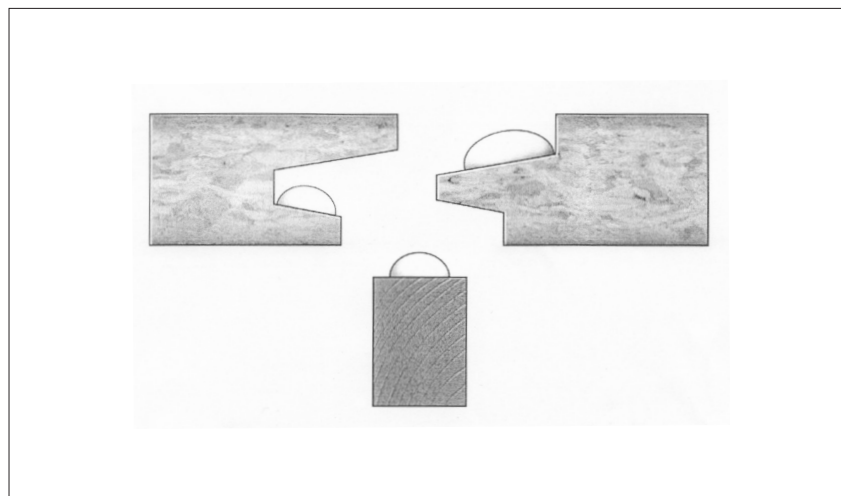
14.1 The tongue-and-groove flooring boards are laid on top of the joists with the longest edges at right angles to the joists. Short end joints should be staggered by approximately half a board in a brick bond pattern with these ends falling on the centre line of the joist. If they overhang, additional timber supports or noggings must be provided. Although long edges do not need intermediate support between joists, support noggings should be fixed at floor perimeters where unsupported edges abut a wall.

14.2 Laying starts with a single row of boards parallel to the longest wall allowing for a suitably sized expansion gap. A minimum gap of 10 mm, or 2 mm per metre run of floor, whichever is greater, should be left against all walls and abutments. Particular attention must be paid to maintaining expansion gaps at all times during construction. When large single run floors are being laid, it is necessary to incorporate intermediate expansion gaps to allow for possible movement.

14.3 All tongue-and-groove edges must be glued with an ample bead of Caberdek T&G Jointing Adhesive applied to the grooved edge and a smaller bead applied to the top edge of the tongue (see Figure 1). When the boards are butted tightly, any extruded residues should be removed with a damp cloth.

14.4 Heads of nails or screws driven through the top surface of the board must be protected by application of a covering layer of Caberfix water-resistant tape.

Figure 1 Glueing



Fixing to I-joists

14.5 Timber based I-joists are proprietary products which have specific installation requirements, concerning their installation for example relating to lateral restraint. The number of fixings required will vary depending on factors such as the geometry of the particular installation, the dimensions of the I-joist and whether the deck is required to act as a diaphragm. When installing the boards on I-joists, the recommendations of the joist manufacturer should be followed.

14.6 The method set out in sections 14.9 to 14.14 uses a fixing at every joist for each board (equivalent to a fixing every 600 mm along each joist). However, for each installation, guidance from the I-joist manufacturer, or other suitably qualified persons, should be obtained and followed, including increasing the number of fixings where appropriate.

Method 1 – Mechanical Fixing with tape at joints and perimeter

14.7 Boards are glued to the joists and noggings using the Caberfix T&G Jointing Adhesive and fixed using 10 gauge annular ring-shank nails of length 2.5 times the thickness of the board, at a rate of four nails per joist and hammered flush with the surface of the board. Boards should be fixed along the perimeter at 200 mm to 300 mm centres, approximately 25 mm from the edge of the board.

14.8 Where nailing could damage ceilings or joists, boards should be fixed using countersunk Posidrive No 8 particle board screws in pre-drilled holes.

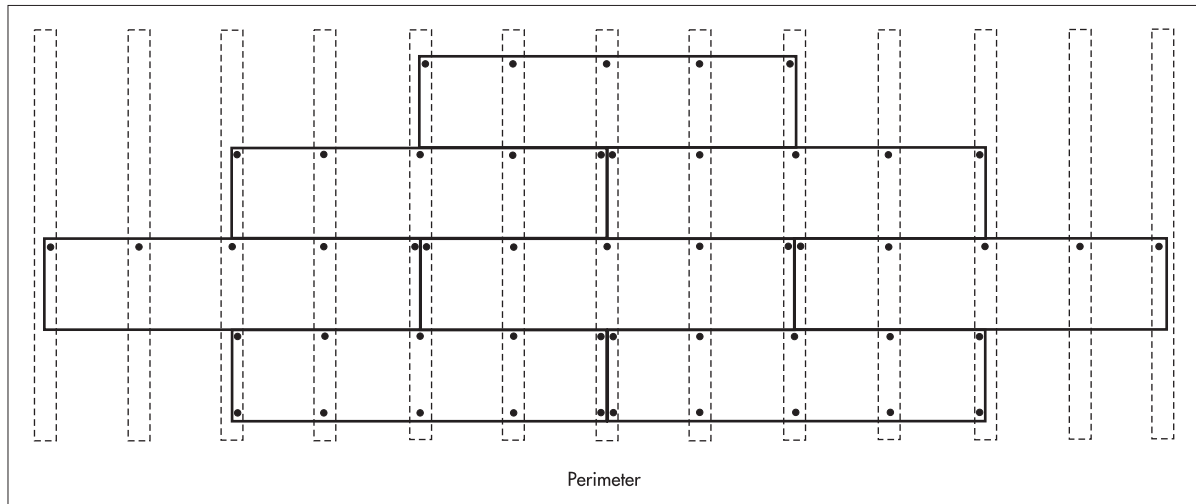
Method 2 – Caberfix Joint & Joist Adhesive with Caberfix water-resistant tape at joints and perimeter

14.9 A 6 mm bead of Caberfix Joint & Joist Adhesive is applied centrally to the top of the I-joists in 600 mm lengths, for the first run of boards.

14.10 Boards must be fixed within 15 minutes, the first run being placed into position squarely, avoiding any unnecessary dragging which will disturb the adhesive. The first run is fixed to each joist along the perimeter 50 mm from the board edge using 55 mm annular ring-shank nails or screws. The boards are also fixed by secret nailing through the tongue of the long edge at 20° to the vertical, one annular ring-shank nail (or screw) being fixed to every I-joist.

14.11 Caberfix Joint & Joist Adhesive is applied along the next 600 mm run of joists and the next row of boards is staggered to form a brick bond pattern. The boards are then fixed by secret nailing (or screwing) through the board tongue at each joist (see Figure 2).

Figure 2 Nailing pattern for 2400 mm x 600 mm boards fixed to I-joists at 600 mm centres



14.12 Subsequent rows are fixed as described in section 14.11. The last row of boards is fixed to each joist along the perimeter, 50 mm from the board edge.

14.13 The floor deck can be walked on immediately after fixing but further heavy construction work should be avoided for 24 hours.

14.14 Any excess adhesive on the tongue-and-groove joint should be wiped clean within 15 minutes using a plastic hand scraper or similar.

Fixing to solid timber joists

14.15 The methods described in sections 14.5 to 14.14 can also be used when fixing the product to solid timber joists.

Sealing

14.16 Immediately a run of panels is fixed, all board joints, nail runs and exposed edges around the perimeter are sealed with Caberfix water-resistant tape. This operation must be carried out in dry conditions.

Finishing

14.17 If the board surface or edge tape is damaged during the construction process it must be repaired immediately.

14.18 The product tolerates wet conditions but these may have an adverse effect on site safety.

14.19 When all construction and decoration work is complete and the building is weathertight, the deck should be swept down and the peel-off covering removed by pulling firmly but slowly from the short end. A sharp knife should be used around the perimeter to free any of the covering which may have become snagged.

15 Repairs

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

16 Tests

Tests were carried out, and the results assessed, to determine:

- slip resistance in dry and wet conditions
- resistance to hard body impact
- tear resistance of Caberdek film and Caberfix water-resistant tape
- resistance to abrasion
- standing water resistance
- dimensional accuracy of panels
- squareness of panels
- resistance to peel
- water resistance of Caberfix water-resistant tape
- water resistance and adhesive characteristics of Caberfix T&G Jointing Adhesive and Caberfix Joint & Joist Adhesive.

17 Investigations

17.1 An assessment of the product's performance in relation to fire was made by reference to BRE report (BR 128 : 1988), the relevant national Building Regulations and data relating to BS 467-7 : 1997.

17.2 The manufacturing process for the panels was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

17.3 A site in progress was witnessed to establish the practicability of installation.

17.4 A user survey of builders who had used Caberdek was conducted to establish the practicability and performance.

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 8000-5 : 1990 *Workmanship on building sites — Code of practice for carpentry, joinery and general fixings*

BS EN 312 : 2010 *Particleboards — Specifications*

BS EN 13986 : 2004 *Wood-based panels for use in construction — Characteristics, evaluation of conformity and marking*

18 Conditions

18.1 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.

18.2 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.

18.3 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.

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

18.5 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
- individual 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.

18.6 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.