



Norbord®

make it better

Caberboard®

www.norbord.com



About Norbord

Norbord is one of the World's leading manufacturers of engineered wood-based panel products. Our products are used extensively in the construction, furniture and DIY sectors.

Norbord's success comes from the pursuit of excellence in all areas. This is a key driver within Norbord and is integral to how we manage our business. Across all functions we aim to deliver the highest level of achievement as standard.

The result is a company that is responsive with dependable and dedicated customer service without compromising safety or the environment.

Norbord is committed to sourcing all of its timber from responsibly managed forests. All of our European manufacturing facilities have the capacity to produce products certified to Forest Stewardship Council standards.

The FSC product label allows consumers worldwide to recognise products that support the growth of responsible forest management. In an increasingly environmentally aware marketplace, many demand the FSC mark on their wood products. With Norbord it comes as standard.

OUR VALUES



About Caberboard

Caberboard is an engineered panel product used in several applications throughout the construction and furniture industries. The range consists of some of the UK's best known brands in both flooring and furniture grade panels.

The manufacturing process

A large percentage of the raw materials used in manufacturing Caberboard are sourced from recycled materials. The recycled components are sorted and broken down into fine strands which have to continuously pass stringent quality examinations.

The Caberboard particleboard range is manufactured at our state-of-the-art mills in the UK. By continually providing high quality boards, the Caberboard name is well known and respected throughout the construction industry.

The mixture of fresh softwood chips and recycled chips are bonded together with a resin under heat and pressure to form a rigid board with a smooth surface. The finished panels are then sanded and cut to size.



Product range

Caberfloor

With consistency, high density and a precision tongued and grooved profile, Caberfloor is the leading flooring. The moisture resistant P5 grade is the most commonly specified in the UK and is frequently used in the construction of cassette floors. Caberfloor P4 is ideal for dry, internal applications.

Caberdek

A winning combination. Caberdek combines the advantages of Caberfloor with a waterproof, slip-resistant film that further enhances its appeal. With health and safety of paramount importance, Caberdek is commonly specified throughout the UK construction industry.

Product range

Caberdek Sealfast

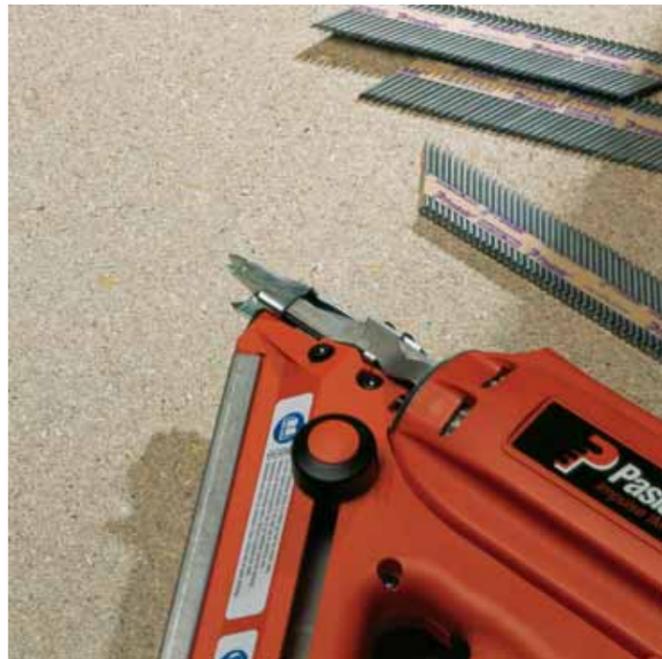
This time saving flooring system combines the benefits of using 22mm Caberdek and a double function waterproof adhesive that seals T&G joints and also bonds Caberdek to joists.

Caberboard Fixing Packs

The Caberdek Fixing packs contain everything required to install 50m² of Caberdek flooring to BBA standards. We've thought of everything from the tape for the joints to the wood working adhesive and structural Fastfix adhesive.

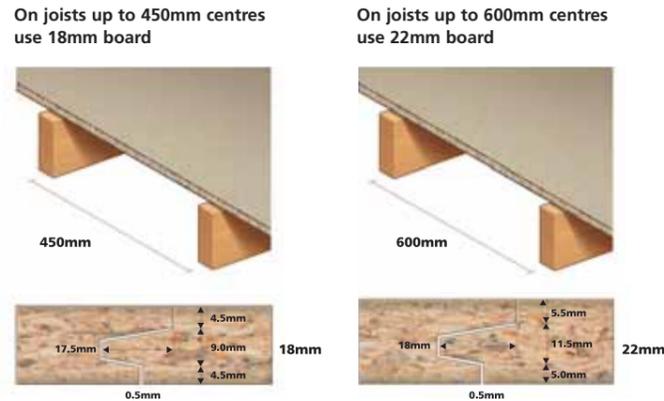
Caberboard

Caberboard is ideal for general applications including furniture manufacturing and kitchen worktops. When you demand quality, choice and availability, you can rely on Caberboard; the leading name in particleboard panels.



Application guidance

The following table provides general guidance. For advice on the best product for your specific application, please contact Norbord customer services or technical support on +44 (0)1786 812921.



Specification		General Applications		Flooring		
Grade	Thickness	Kitchen worktops	General use	Dry domestic	Domestic New Build & refurbishment	Commercial
Caberfloor P4	18, 22			✓		
Caberfloor P5	18			✓	✓	
Caberfloor P5	22			✓	✓	✓
Caberdek P5	18			✓	✓	
Caberdek P5	22			✓	✓	✓
Caberboard P2/P3	28, 38	✓				

✓ Suitable



Caberfloor P5 Square Edged



Caberdek T&G

About Caberfloor

A high-density particleboard designed specifically for flooring applications. Available in tongued & grooved or square edged formats - in 18mm and 22mm thickness - Caberfloor is the ideal solution for all domestic and specific commercial flooring. Caberfloor is available in two different grades – P4 and P5.

Caberfloor P4

Should be used for dry internal applications where no moisture will be encountered during or after construction.

Caberfloor P5

The most commonly specified particleboard flooring in the UK. It is extensively used in new build and refurbishment markets. Durability is achieved by using highly moisture resistant resin systems.

Caberfloor is available in a range of panel sizes, and can be quickly and easily laid. It offers precision, stability and provides an excellent surface for subsequent floor laying operations.

With today's demands for rapid construction of both houses and flats, Caberfloor is the ideal solution for the off-site construction of cassette floors.

About Caberdek

With a commitment to continuous improvement and new product development, Caberdek is an innovative answer to the demands of the building industry. Caberdek incorporates a waterproof, slip-resistant film adhered to moisture resistant Caberfloor P5.

Features and benefits

As well as providing extra protection against the elements, Caberdek provides a safe working platform and should be considered by specifiers within the Construction Design and Management regulations 1994 and NHBC standards. When correctly installed, Caberdek assists with 'Falls Protection' required within latest regulations.

The protective film has high impact, puncture and tear resistance which stands up to intensive on-site traffic.

On completion of construction the Caberdek film can be easily removed; leaving a clean floor surface for the new property owner, saving clean-up costs for the builder.



Installation advice

Caberfloor and Caberdek

Tongued & Grooved panels

Tongued & Grooved panels should be laid in a staggered pattern with long edges across the joists and short edges falling on the centre of joists. Support between joists is not necessary. Should the short edges overhang then the overhang must be supported by a noggin.

Glueing T&G edges is recommended. It improves joint strength and accommodates a degree of joist variation. All joints must be glued with an adhesive such as moisture resistant PVA type to Classification D3 of BS EN 204. Otherwise, joist movement or variation may lead to movement and 'creaks'.

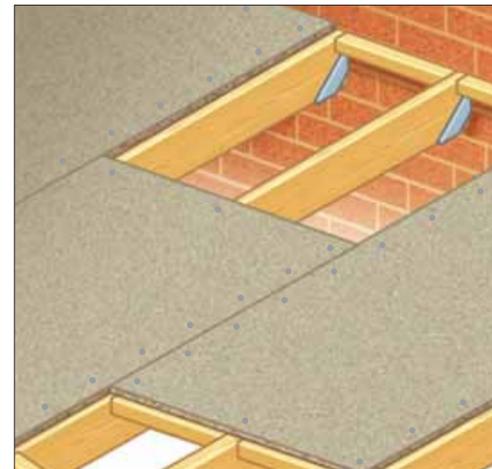


Tongued & Grooved panels

Square Edged panels

Square Edged panels should be laid with the long edges falling on the joist centres and with the short edges supported by 38mm wide noggins with their ends secured to joists.

Nail the boards to all supports 200-300mm apart with annular ring shank nails round the edges of the board and at 300mm centres on intermediate joists. The nails used should be 2.5 times the thickness of the board. All joints must be tightly butted.



Square Edged panels

Note:

Care should be taken to ensure any joists treated with a water borne preservative have thoroughly dried out before installation. Joist moisture content should not exceed 20%. High moisture content in the timber could lead to distortion as they dry out leading, to 'creaks', particularly if the boards are not glued. Some contractors prefer to additionally bond the underside of the board to the top of the joist (using PVA adhesive).

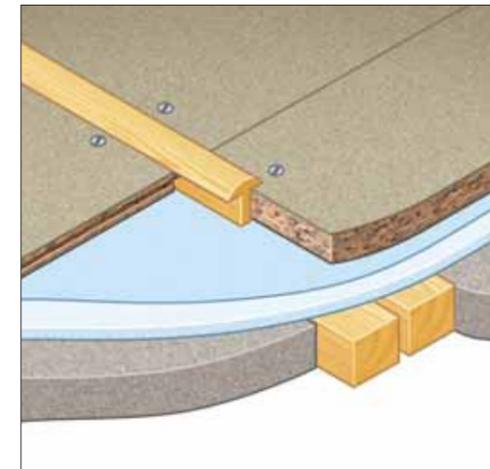
Any access traps for underfloor services should be pre-planned and support provided for all sides of the traps.

Installation advice

Expansion gaps

Perimeter expansion gap

Caberfloor, when laid in a new building, will tend to absorb moisture and expand in common with other wood-based materials. It is important to leave an expansion gap of 2mm per metre run of board between the edge of the floor and the perimeter wall or any solid abutment (minimum gap 10mm). For larger areas it is necessary to incorporate intermediate expansion gaps to provide the necessary allowance for possible movements, particularly in corridor applications. Attention must be paid to maintaining expansion gaps at all times during construction.



10mm minimum expansion gap

Expansion/contraction provision

It is well documented and strongly recommended that additional movement gaps are incorporated in large areas or long runs e.g. corridors. BS 8201: Code of Practice for corridors recommends an expansion provision of 2mm per metre run plus 1mm for every metre above 12m of the width and breadth of the floor. A simple movement provision can be made according to the diagram below and also proprietary systems are available to suit a wide range of applications.

Floor preparation

Soft and resilient floor coverings

The Codes of Practice - BS 8203, WPIF floating flooring installation code of practice and BS 5325 recommends that for all overlays the subfloor must be clean, rigid and flat. When thin or shiny floor surface materials are laid over Caberfloor these materials may allow board joints to show through, particularly after trafficking. Prior to laying such materials, the Caberfloor joints should be checked for level. It is permissible to sand off any raised areas not exceeding 1mm. For raised areas greater than 1mm, additional levelling materials are required. Thin plain coloured carpets or vinyls or those with a high sheen - tend to show small irregularities to a greater degree. For thin vinyls and tiling, it is recommended that a plywood overlay (4mm) is fixed in position, staggering joints so as not to coincide with Caberfloor joints. The plywood should be fixed every 100mm using appropriate nails or screws around perimeter and 150mm apart elsewhere, ensuring they do not protrude above the surface. Adhesive manufacturer advice should be followed for priming of new surfaces. Usually, this involves a coat of dilute PVA emulsion, e.g. Uni-bond.

Ceramic tiling

Guidance as to construction of bases in respect to considerations and timber bases is given in BS 5385: Part 3: 1989. Tiling onto Caberfloor should be undertaken only in joisted / fixed floor constructions. Noggins should be used between the joists at 300mm centres and the surface provided for tiling should be 15mm exterior grade plywood screwed to joists and noggins at 300mm centres. Existing boards can therefore be overlaid with 15mm exterior grade plywood to provide the necessary rigidity for a tiled surface. Length of fixings should be 2.5 times overall board thickness. A tile adhesive is the recommended bond material - cement/sand mortars are not recommended.

Floating and Suspended Timber Floors

Continuously supported floating floor

It is essential that a continuous damp proof membrane - not less than 1000 gauge polythene - is used. This must be laid in accordance with CP102: 1973. A continuous layer of insulation is used above the structure of pre-cast concrete beam and block.

The insulation may be incorporated in the screed. Most commonly, when used in conjunction with Caberfloor P5 as the floating floor overlay, the insulation is immediately below the flooring and laid onto the slab or beam and block, with vapour control layer between flooring and insulation. Any unevenness, localised or general, may transmit through the Caberfloor layer, therefore subfloor flatness is important. The insulation material should be rigid and suitable for the loading requirements.

Battened floating floors

Use additional support battens where extra floor loading is anticipated and the exact position is known, e.g. beneath kitchen equipment and sanitary fittings. When required, use a levelling screed to ensure that the battens of a timber battened system are true and level. Do not attempt to fix the flooring to the battens through resilient insulation material, as this will create an uneven floor. If necessary lightly sand and clean floors to make the surface suitable for further overlays, e.g. thin plywood, vinyl etc. Do not wash or scrub with water.

Advice on door thresholds

At all door openings, support the edges of the panels on preservative treated timber battens. Ensure that battens are on a firm and level base and fix a strip of flooring to the battens as a threshold. Allow a gap on each side of the threshold for movement in the flooring panels.

Acoustic performance

Caberfloor P5 can be used effectively on acoustic battened floor systems.

These systems are often used in flatted developments to achieve 'Part E' requirements of UK Building Regulations.

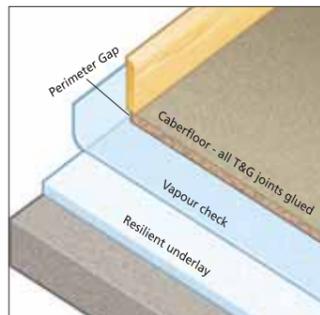
Advice on Moisture Protection

Caberfloor P5 is a highly durable product. Similar to other wood-based panels it is affected by moisture. Good practice on installation and protection against moisture in construction is advised. We recommend, with or without battens in the floating floor construction, that 1000 gauge polythene should be used as a continuous Vapour Control Layer (VCL) between the Caberfloor and the insulation material.

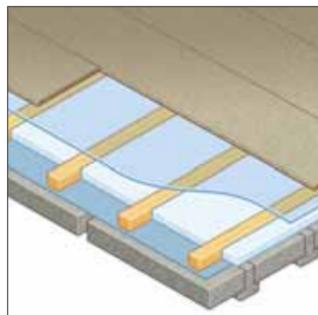
Joisted/Suspended Timber Floors

Joisted or suspended timber floors have an advantage in that they can accommodate the required thickness of insulation within the structure. The insulation materials may be mineral wool supported on boards (or netting) or rigid foam insulation simply supported on timber battens.

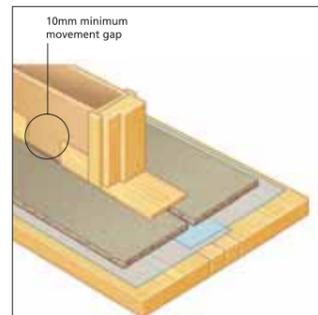
The board may be mechanically fixed to the joists and the underside of the board glued to the top of the joist for additional strength. Independent tests have shown a 10% strength increase by glueing as above. Maintain adequate cross ventilation of the subfloor space, taking care not to obstruct ventilators by insulation material or timber struts in the subfloor. Use herringbone struts in preference to solid strutting e.g. above sleeper walls.



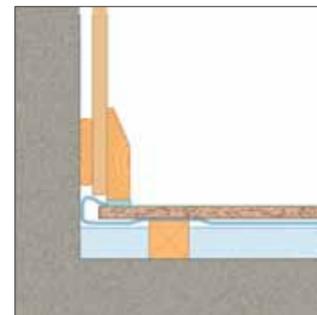
Continuously supported floating floors



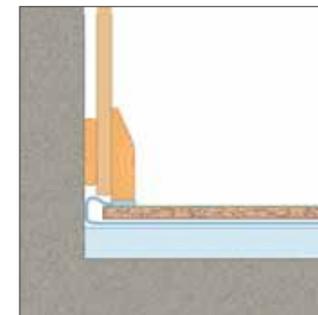
Caberfloor on battened floating floor



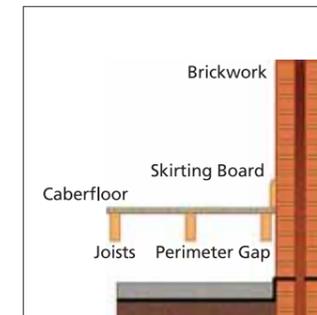
Doorway thresholds



Vapour control layer with battened floor



Vapour control layer with Caberfloor



Joisted floor

Installation advice

Caberdek Fixing Packs

Glueing

- Prior to fixing ensure there is no standing water on the joists.
- A liberal application of Caberdek D3 PVA joint adhesive should be made to both the tongue and groove of the profile joint of each panel to ensure that the entire joint is bonded.
- Once the panels are butted tightly together any extruded residues should be removed with a damp cloth.
- Panels should be glued to the joists and perimeter noggins using Caberdek Fastfix PU adhesive (available in Caberdek Fixing Pack B). Use a skeleton gun to apply a 6mm diameter bead.

Finishing

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

Caberdek Fixing Pack A

Fixing

- 1 Panels should be fixed using annular ring-shank nails or screws at the following intervals:
 - 4 fixings per joist on each short end.
 - 3 fixings per joist on each intermediate joist. (Fig. 1)
- 2 Fix flush or just below the panel surface.
- 3 Where nailing could damage ceilings or joists, or where service access is required, panels should be fixed using countersunk posidrive No. 8 screws into pre-drilled holes.

Taping

- 4 Immediately after a run of panels have been fixed, all board joints, nail runs and exposed edges around the perimeter should be sealed using Caberdek tape. (Fig. 2). This operation should be carried out under dry conditions.
- 5 The Caberdek tape dispenser (Fig. 3) is recommended when applying tape. Caberdek tape is also available in widths of 45mm and 75mm.

Contents:

2 x 1kg Caberdek D3 Joint Adhesive
7 x Rolls Caberdek Tape (45mm x 50m)

Fixing Pack 'A' is sufficient for 80 boards (ie. pack 18mm P5).

Nominal usage 115m².

Caberdek Fixing Pack B

Fixing

- 1 Panels should be fixed at perimeter only using annular ring-shank nails or screws at 200mm - 300mm centres. (Fig. 1)
- 2 Fix flush or just below the panel surface. Alternatively, panels may also be secret nailed through the tongue at T&G joints.
- 3 Board ends and alternate intermediate joists should be fixed using 1 fixing. eg For 22mm Caberdek at 600mm centres, this would mean employing 3 fixings per 2400mm panel. (At 400mm centres, this would mean 4 fixings per panel).

- 4 Where nailing could damage ceilings or joists, or where service access is required, panels should be fixed using countersunk posidrive No. 8 screws into pre-drilled holes.

Note:

Only use Caberdek Fastfix PU adhesive on joists and noggins. Do not use on tongued and grooved edges.

- 5 Apply a 6mm bead of Caberdek Fastfix adhesive to the top of the joist or I-joist, using a skeleton gun. Use Caberdek Fastfix PU adhesive on joists and noggins. Do not use on tongued and grooved edges.

Taping

- 6 Immediately after a run of panels have been fixed, all board joints, nail runs and exposed edges around the perimeter should be sealed using Caberdek tape. This operation should be carried out under dry conditions.
- 7 A Caberdek tape dispenser is recommended when applying tape. Caberdek tape is also available in widths of 45mm and 75mm.

Benefits of Fixing Pack B

- Contents (Fig. 3).
- Fewer fixings
 - Less tape needed
 - Reduced 'creaking'
 - Less time required

Contents:

1kg Caberdek D3 Joint Adhesive
6 x Rolls Caberdek Tape (45mm x 50m)
6 x 310ml Tubes Caberdek Fastfix PU Adhesive

1 x 360ml tube Fastfix is sufficient for approximately 5 boards 2400 x 600mm. Nominal usage 45m².

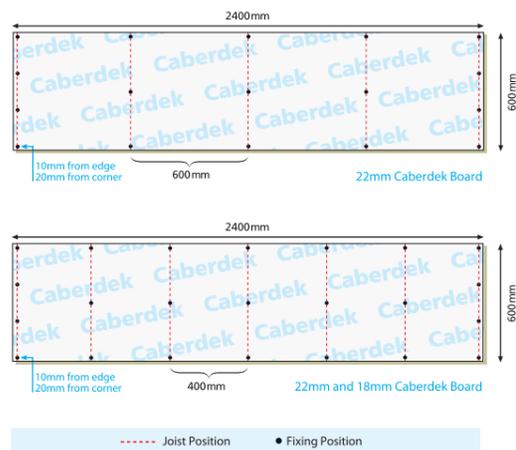


Fig1



Fig2



Fig3

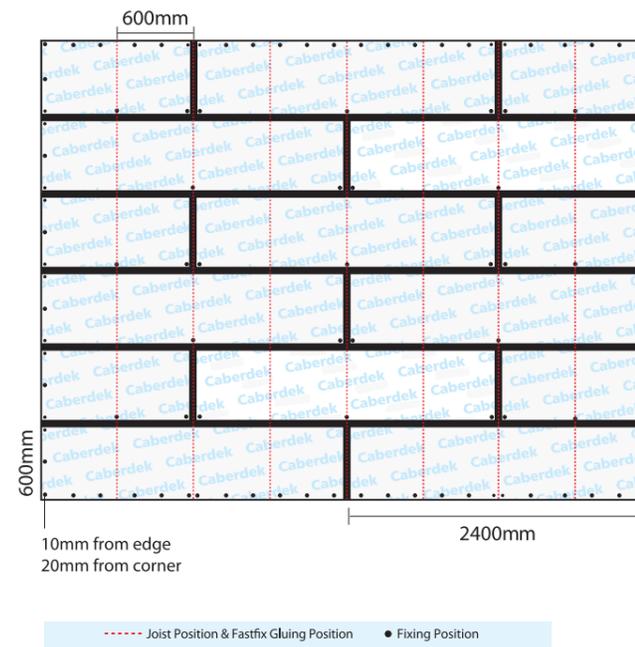


Fig1



Fig2



Fig3

Caberdek Sealfast

The ultimate flooring system,
fully BBA approved

Caberdek Sealfast flooring system has brought together Caberdek P5 and a powerful structural adhesive: United they form a durable waterproof seal that bonds Caberdek boards to joists and also fixes tongue and groove joints without using tape*.

The 22mm Caberdek P5 flooring boards have a waterproof, slip-resistant, peel-off film that protects floors from the elements and potential damage. Caberdek is commonly specified throughout the UK construction industry.



Benefits

- Don't have to buy separate adhesive and flooring panels
- Clean floor after film removal
- No dual-inventories, mix-ups or time wasting
- Seals the joint against water ingress
- Allows for a quality, long lasting work, and accounts for exposure to elements
- Allows other building work to progress whilst maintaining good protection
- Quicker application process
- Less time cleaning, plus better quality job
- Perfect for offsite work (e.g. floor cassettes)

Installation advice

- 1 First perimeter panel is placed after applying adhesive to interior and perimeter joists. Fix at 200mm to 300mm centres at perimeter. Place groove end away from laying direction, this presents tongue to fix & apply adhesive as floor is laid.
- 2 Secret nailing method is recommended for optimal performance. This is achieved by nailing through the board tongue as show in photo. 3 fixings per panel are required (one each end and one in centre) to ensure joist contact. Face nailing is also an option in which case tape over nail heads.
- 3 Apply adhesive to the tongue of the panel just laid and also the joist area for the next panel. Bring the next panel into position carefully (ensuring adhesive on joists is not removed in the process!). Ensure an even continuous 6mm bead is applied on both tongue and joist.
- 4 Ensure you have adhesive squeezed out when joining boards together. Smooth off this excess adhesive using the plastic scraper supplied. When cured you will have a virtually waterproof seal. No tape is required as you have a sealed joint.
- 5 Fit next panel in the same manner, first applying adhesive to the joist area and then fixing laid panel at tongue end. Tip – when secret fixing ensure fixings are not “proud” of surface as this may prevent correct T&G alignment.
- 6 Continue to lay panels in same manner till floor area is covered. Adhesive takes 45 to 60mins to develop initial ‘grab’ then 24hrs for full cure. This means you have 45/60mins to be sure boards are in correct position. Other building operations may continue after 24hrs.
- 7 With Caberdek Sealfast you only need to tape the perimeter and any cut outs for stairs etc. T&G joints do not require taping. As a guide you should use 24 Sealfast Adhesive tubes (2 boxes) for 66 boards of Caberdek (1 pack).
- 8 If the Caberdek Sealfast system is being used to create floor assemblies offsite then ensure that floor sections are protected from the elements before delivery to site. Caberdek Sealfast can also be used onsite and can be left exposed for up to 42 days during the build process.

Note:

The only taping required is for perimeter and any cut outs for stairs etc.

Norbord Sealfast adhesive cures with moisture in the air so may be used in any weather. Adhesives must be stored indoors at between 5°C to 25°C prior to use to avoid freezing.



Pack contents

As a guide we recommend two boxes of Sealfast adhesive (each contain 12 tubes of 310ml) for one pack of Caberdek boards (66 boards in a 22mm pack).



Technical data

Caberfloor and Caberdek

	Unit	Caberfloor P4		Caberfloor P5	
		18mm	22mm	18mm	22mm
Panel Weight	kg/m ²	12	15	12	15
Panel Weight (2400x600mm)	kg	17.3	21.6	17.3	21.6
Density	kg/m ³	660 ± 30	660 ± 30	660 ± 30	660 ± 30
Internal Bond (IB)	MPa	0.50	0.50	0.80	0.70
Modulus of Rupture (MoR)	MPa	16	14	17	16
Modulus of Elasticity (MoE)	MPa	2600	2600	2800	2800
Impact Strength	mm	550	600	650	700
Moisture Content	%	8.5	8.5	9.5	9.5
Thickness Swelling (1hr)	%	7.0	7.0	6.0	6.0
After Cyclic Test (swell)	%	N/A	N/A	10	11
V313 "Cyclic 'IB'"	MPa	N/A	N/A	0.35	0.25
V100 "Boil 'IB'"	MPa	N/A	N/A	0.25	0.20
Standard Deviation of Thickness					
within boards	mm	±0.2	±0.2	±0.2	±0.2
between boards	mm	±0.5	±0.5	±0.5	±0.5
Dimensional Stability					
Length/Width	%	0.25	0.25	0.25	0.25
Thickness	%	7.0	7.0	7.0	7.0
Thermal conductivity 'K' value	W/m.K	0.14	0.14	0.14	0.14
Low Emission Grade E1 (Formaldehyde EN120)	mg/100mg	≤8.0	≤8.0	≤8.0	≤8.0
Reaction to fire (EN 13501-1)		Class D	Class D	Class D	Class D

These values are typical mean values when the products are tested in accordance with European Standards test methods for Particle Boards BS EN 312.

Additional Technical Data for Caberdek removable film

	Test method	Unit	Value
Weight of Film		g/m ²	90
Impact	VLT107	Nm	6.5
Tear Resistance / Puncture			
Propagation Tear	ASTM 02582	N	80
Ultimate Tensile Load	DIN 53455	kN/m	5.5
Elongation	DIN 53455	%	450
Temperature Extremes			-40/+80
Water Vapour Transmission	Lissy	g/m ² /24hrs	0.7

Alternative film available:

See section 5&10 of Technical Specification within BBA Certificate 02/3934: CABERDEK (www.bbacerts.co.uk)

Boards Per Pack

Thickness (mm)	Tongued and Grooved Caberfloor P4, P5 and Caberdek	Square Edged Caberfloor P4, P5		
	2400 x 600mm 2440 x 600mm	3050 x 1220mm		
18	80	50	42	28
22	66	33	-	-

Uniform Distributed Load Performance (Spans, mm)

Thickness	Type	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
18	P4	9.88	8.47	7.41	6.59	5.93	5.39	4.07	2.96	2.20	1.67	1.29	1.01	0.80	0.67	0.65	0.55	0.46	0.38	0.32
18	P5	16.47	14.11	12.35	10.98	9.14	6.24	4.41	3.20	2.38	1.81	1.39	1.09	0.87	0.73	0.70	0.60	0.50	0.42	0.35
22	P4	12.07	10.35	9.06	8.05	7.24	6.59	6.04	5.37	3.99	3.03	2.34	1.84	1.46	1.22	1.18	1.01	0.84	0.70	0.59
22	P5	20.12	17.25	15.09	13.42	12.07	10.98	8.03	5.83	4.33	3.29	2.54	1.99	1.59	1.33	1.28	1.09	0.91	0.76	0.64

Maximum Permissible Loads

3 spans used up to 950mm,
2 spans used 1,000mm and
above.

All values in kN/m²

1kN = 101.97kgF = 224.8lbs

1m² = 10.764ft²

1kN/m² = 1kPa = 224.8/10.764 = 20.884lbs/ft²

All values derived from actual tests: TRADA Report No. Eng. 131s

Caberfloor P5

Thickness (mm)	Point load plate size (mm)	Basic load capacity (kN)					Characteristic load capacity (kN)				
		Span			Span		Span			Span	
		400mm		600mm	400mm		600mm				
		Glued	Non-glued	No joint	Glued	Non-glued	Glued	Non-glued	No joint	Glued	Non-glued
18	25 x 25	1.9	1.6	—	—	—	4.4	3.7	—	—	—
18	50 x 50	2.5	2.2	2.9	—	—	5.6	4.9	6.6	—	—
18	100 x 100	3.5	3.4	—	—	—	8.0	7.7	—	—	—
22	25 x 25	2.7	3.4	—	—	—	6.1	5.3	—	5.1	—
22	50 x 50	3.4	2.6	—	2.6	—	7.6	5.8	—	5.9	—
22	100 x 100	4.7	4.1	—	3.2	—	10.5	9.2	—	7.3	—

Failure modes

All flooring systems which were subjected to indentors of 25 x 25 and 50 x 50 failed by punching shear. Those which were subjected to indentors of 100 x 100, failed by a combination of punching and splitting.

Notes:

Basic load capacity - refers to the load capacity of the flooring system for the described loading configuration based on a statistical value above which is 95% of the test results had fallen. 'Basic load capacity' includes a reduction factor of 2.25 which incorporates a factor for safety, allowance for loading

conditions (e.g. long-duration: dead + permanent imposed) and specimen size effects. Basic load capacity value should be used in design calculations based on the recommendations of BS5268: Parts 2 to 7, using the permissible stress design philosophy.

Characteristic load capacity - refers to the load capacity of the

flooring system for the described loading configuration based on the statistical value above which 95% of the test results had fallen. Characteristic load capacity value should be used in design calculations based on the recommendations of Eurocode 5: Design of timber structures, DD ENV 1995-1-1:1994, using limit state design philosophy.

Technical data

Caberboard

	Unit	Caberboard P1, P2 & P3		
		9-25mm	25-32mm	32-40mm
Density	kg/m ³	640	620	610
Internal Bond (IB)	MPa	0.35	0.25	0.20
Modulus of Rupture (MoR)	MPa	12.0	10.0	9.0
Modulus of Elasticity (MoE)	MPa	1600	1400	1200
Thickness Swelling (1hr) max.	%	8.0	8.0	7.0
Thickness Tolerance	mm	±0.2	±0.3	±0.3
Thickness Swelling (1hr)	%	7.0	6.0	6.0
Dimensional Stability				
Length/Width	%	0.25	0.25	0.25
Thickness	%	7.0	7.0	7.0
Screw Holding: Edge	N	500	400	300
Face	N	600	600	600
Moisture Content ex plant	%	7-11	8-12	7-12
Surface Soundness	N	2000	2000	2000
Spread of Flame (BS476 Part 7, 1987)		Class 3	Class 3	Class 3
Low Emission E1 Grade	%	0.01	0.01	0.01
Thermal conductivity (k)	W/m°C	0.15	0.15	0.15

These values are typical mean values when the products are tested in accordance with European Standards test methods for Particle Boards BS EN 312.

Boards Per Pack

Metric Board Size	12mm	18mm
2440x1220	60	40
3050x1220	48	32

Advice on storage

On delivery, boards should be stacked on equidistantly spaced battens in a dry covered area with outside storage adopted only as a last resort. If storage outside is unavoidable stack on dry level ground and protect the boards by covering with a polythene or waterproof sheet. Ensure that the board edges are covered and secured to avoid lifting by the wind.

An HSE information sheet on the 'safe stacking of sawn material and board materials' is available on request.

Conditioning

Wood particleboards expand on taking moisture from surrounding air (plus effects of wet trades, site conditions etc.) and shrink on losing it.

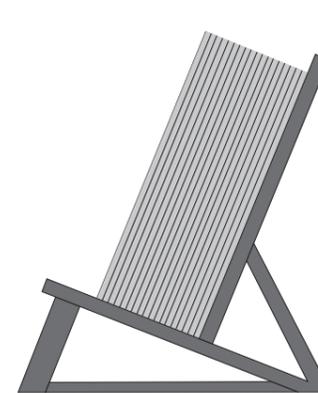
As a guide, a small increase in moisture of 1% increases length and width by 0.25mm per metre. A decrease in moisture of 1% will have a corresponding shrinkage effect. It is clearly desirable to minimise these changes, which can be applied pro-rata, by taking a few simple precautions. Boards should be allowed to reach equilibrium by storing them under the atmospheric conditions in which they are to be used, for a minimum of 48 hours prior to laying. It is recommended that boards are loose stacked, on a minimum of 3 equi-spaced bearers, with spacers between each board to allow free air movement.

Moisture Content

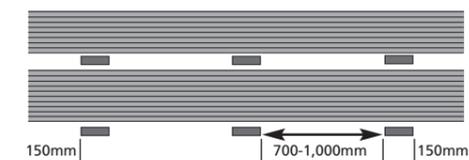
All wood is hygroscopic. Its moisture content, therefore depends on its environment. The moisture content which wood and wood-based products will attain in service (equilibrium moisture content) depends primarily on the atmospheric humidity.

Relative humidity	Approximate equilibrium at 20°C moisture content
%	%
30	7
65	11
85	15

Floors should be laid at a moisture content within the range likely to be encountered in service. They should also be laid after the initial drying out period is complete. It should be noted that sometimes extreme site conditions can lead to shrinkage when the building is finally occupied/heating commissioned etc. Caberfloor products are made at relatively high ex-works moisture contents compared to industry norms. Whilst no product containing around 80% wood in its composition can be unaffected by moisture - Caberfloor P5 at ex-works (around 9% moisture content) is close to the natural equilibrium moisture content of particleboards (see table) and is consequently an excellent choice.



Correct method of edge stacking



Correct method of storage on battens

Environmental credentials

Forest Stewardship Council

Norbord is committed to sourcing all of its timber from responsibly managed forests and therefore all of our European manufactured particleboard products are certified to Forest Stewardship Council standards.

The FSC product label allows consumers worldwide to recognise products that support the growth of responsible forest management. In an increasingly environmentally aware marketplace many demand the FSC mark on their wood products: with Norbord it comes as standard.

At Norbord, all of our facilities are regularly visited by a team of environmental auditors, so there is always something better to strive for and a new standard to set. This combines with our open approach to business. Norbord is a name you can trust to deliver, and to keep its promises.

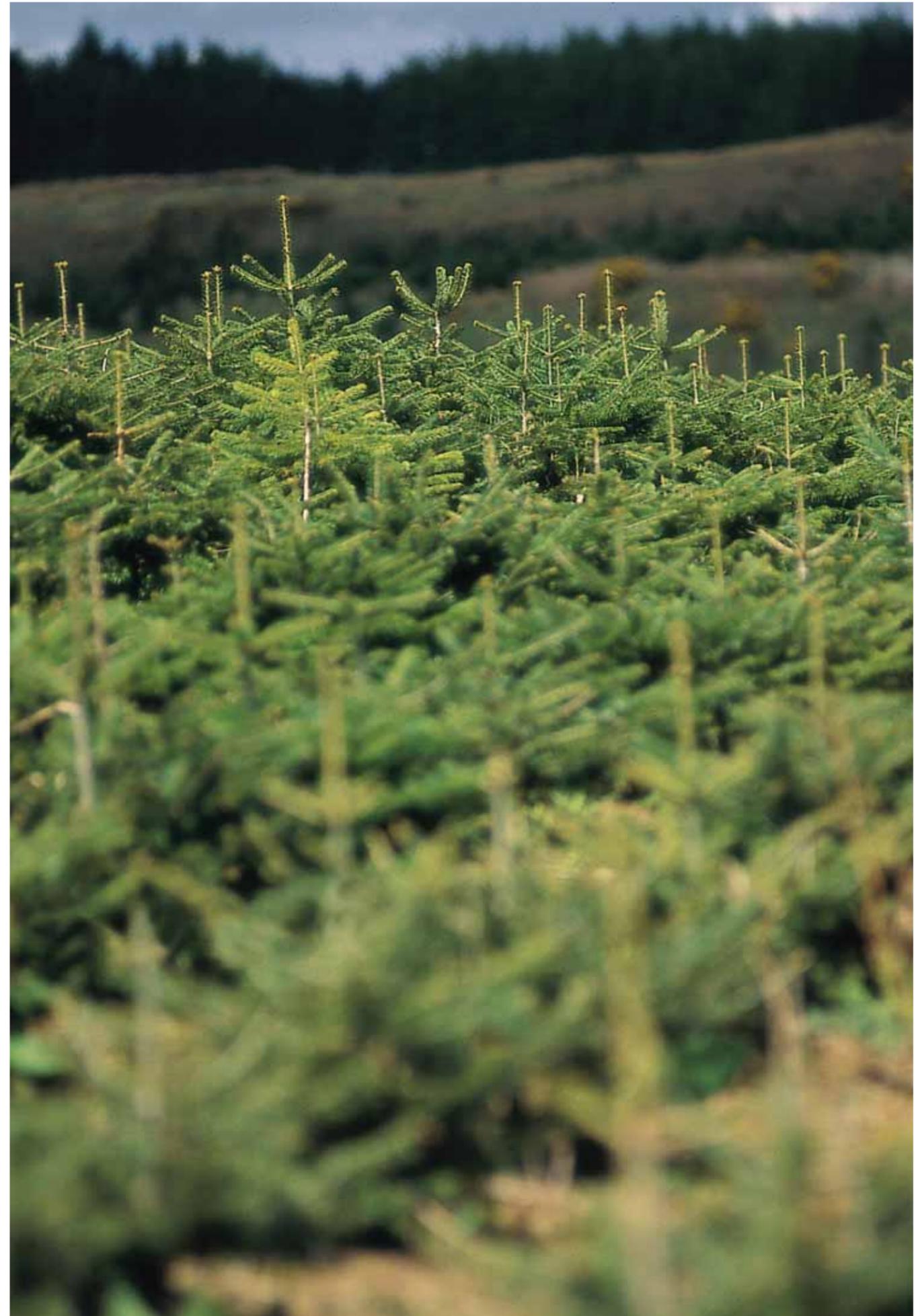
Investing in the environment

Norbord has invested heavily in environmental improvements since 1995. This includes air-cleaning technology such as state-of-the-art WESPS (wet electrostatic precipitators). It also means investment in recycling facilities. We can generate as much as half our mill's energy needs by using wood residues as fuel – composting what is left.

By reusing and conserving, we safeguard the environment and keep our costs down. In turn, our products are good for the environment and also good for your budget.

All of our plants have obtained the coveted environmental ISO 14001 accreditation. The ISO 14000 family addresses environmental management. This means what the organisation does to:

- minimise harmful effects on the environment caused by its activities, and to
- achieve continual improvement of its environmental performance



Norbord across the globe

Norbord across the globe

Norbord is one of the World's leading manufacturers of engineered wood-based panels. With our headquarters in Toronto, we employ some 2,700 people worldwide with approximately 1,200 of them in Europe. We are publicly owned and listed on the Toronto Stock Exchange.

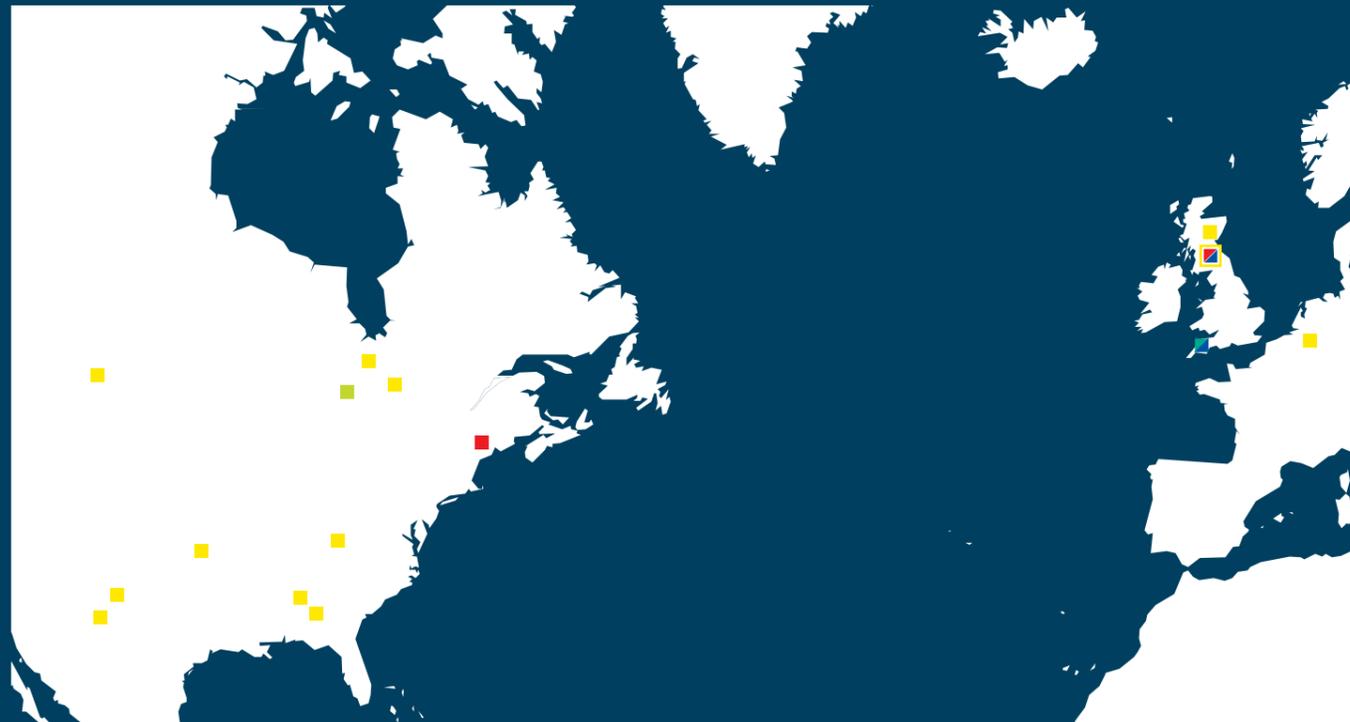
Our facilities include

- 11 OSB mills
- 2 MDF plants
- 2 particleboard plants
- 1 speciality plywood mill
- 1 furniture plant

The result is a successful company built on integrity, listening to our customers and always improving the way we work.

Industry sectors served

Our products are used extensively in the construction, furniture and DIY sectors. From tongued and grooved Caberfloor ideal for flooring solutions, to structural SterlingOSB designed to withstand the rigours of I-joists, all our products are manufactured to vigorous quality standards.



- | | | | | | |
|------------------|--|---------------------------|--|----------------------|--|
| Corporate Office | | Oriented Strand Board | | Plywood | |
| Regional Office | | Medium Density Fibreboard | | Furniture Components | |
| | | Particleboard | | | |

Norbord in Europe and quality credentials

In Europe, we have four sites

- Cowie, Scotland**
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 Fax +44 (0)1786 815622
 Caberwood MDF
 Caberboard
 Caberfloor
 CaberdeK
- Inverness, Scotland**
 Tel: +44 (0)1463 792424
 Fax: +44 (0)1463 791764
 SterlingOSB2
 SterlingOSB3
 Sterling Roofdek
- South Molton, England**
 Tel: +44 (0)1769 572991
 Fax: +44 (0)1769 572413
 Conti
 Caberboard
 Furniture Components
- Genk, Belgium**
 Tel: +32 (0)89 500300
 Fax: +32 (0)89 362971
 SterlingOSB Conti

British Board of Agrément

The BBA (British Board of Agrément) is designated by UK Government to issue European Technical Approvals. This provides third party security and further guarantee of SterlingOSB performance in modern construction applications. A copy of the certificate can be found at www.norbord.com



CE Marking

The CE mark (from the French, 'Conformité Européen') is intended to promote the free movement of products within the EU by showing that essential health and safety requirements have been met.

The CPD (Construction Products Directive) applies standards to the finished works into which construction products are to be used, rather than applying directly to the products themselves. These quality standards ensure that:

- The product has been subject to an appropriate system of attestation of conformity with one or more technical specifications;
- The product does in fact conform with the relevant aspects of the identified technical specifications; and
- Therefore, the product is fit for its express intended use or with its implied range of suitable uses.



Cowie Scotland



Inverness Scotland



South Molton England



Genk Belgium



Values and beliefs

The people of Norbord Europe have adopted a common set of values which have been built through open communication and dialogue reflective of mutual respect. They can be summarised in three words:



Commitment to helping our customers be successful

Our people recognise that if our customer relationships are not based on win-win outcomes, then they are not sustainable.

This belief drives our strategy of focusing on key customers and working with them to ensure mutual benefits over the long term. Benefits based on continuing improvements in customer service, product and business development, supply chain effectiveness and technical support.

The only valid gauge of our success in this commitment, is whether our customers believe and say we're doing it.

Trust and personal responsibility in all relationships

We believe that each of our people has the capability and commitment to maximise his/her contribution and the desire to take responsibility for their actions.

Our collective goal is to set clear objectives and to deliver on all promises and commitments. This philosophy applies whether we're engaged with customers, suppliers, fellow members of Norbord, shareholders, or with the community at large.

Excellence as our standard

Our goal is to have an organisation which is capable of excellence and of delivering it consistently in the areas critical to our business.

These include the following:

- Safety
- Managing beyond customer expectations
- Supply chain management
- Cost management
- Capacity assurance
- Organisational effectiveness



Customer support

Logistics

At Norbord, we run our own specialist logistics service. A service known for its reliability; a service that guarantees availability.

Available to selected accounts, our unique Fastrack guarantee goes even further.

How Fastrack can work for you:

- Assured supply
- Direct delivery to your customers
- One order point for all products
- Improved stock turnover

Our range of logistical options adds up to on time and in full delivery.

Technical support

At Norbord, our experienced technical team is on hand to deal with enquiries from architects, builders, contractors – in fact anyone involved in the specification or use of Norbord's engineered wood-based panels.

Rest assured – our commitment will continue throughout your project and beyond.

MSDS

Material Safety Data-Sheets are available for all Norbord products. Please contact Norbord Technical Support or visit www.norbord.com

Training

For many years Norbord's technical sales personnel have been providing training aimed at improving the knowledge and skills of:

- Construction professionals
- Specifiers
- Merchant and distribution staff
- Technical support staff
- Sales personnel

As a member of the Construction CPD Certification Service, you can be safe in the knowledge that Norbord's training is amongst the best in the industry.





make it better



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At Norbord, we realise the environment is fundamental to our future. This brochure has been printed on paper stock that is FSC (Forest Stewardship Council) certified.



UK/CABERBOARD V3 05/08