



BIRCH
PLYWOOD

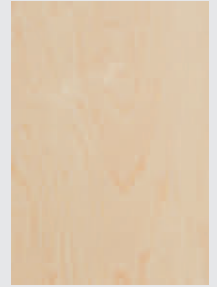


PRODUCT GUIDE

Cworkshop supplies a wide range of high-quality Birch Plywood and to help you get the most from this versatile product – we have improved and updated our product guide to provide more technical information.

Birch trees are the ultimate renewable resource with virtually every part of the tree being utilised. The twigs are used for besoms and sauna whisks, timber for furniture and flooring; bark was used for roofing and canoes, and even the sap for wine! Waste timber and residue at plywood mills is used for other materials and boiler fuel for energy production.

Since the late 19th Century, Birch has been used for high-quality plywood that is widely used for furniture, construction, toys, vehicle building, packaging and was specified for furniture and interior joinery at the Google headquarters in St Pancras, London.



From an environmental perspective, Birch is an abundant species found in the forests of the northern hemisphere being widespread across Canada, Russia and most of Northern Europe, in particular Finland, Latvia and countries bordering The Baltic. Birch species are relatively fast growing and support a myriad of varied wildlife, and where managed as a sustainable forest resource, do not impinge on the natural biodiversity.

So for quality, sustainably sourced plywood, Birch Plywood is definitely 'The Natural Choice'.

Birch Plywood is available with either FSC® or PEFC certification.



Birch Plywood Grades - 'Commercial Availability'

HIGHER GRADES

Birch Plywood is graded according to the quality of the face veneers and not the quality of the core, ref: BS EN 635-2 - Classification by Surface Appearance- Part 2. Hardwood.

Grade B/BB (Face Grades)

Generally, the best grade available for clear finishing. Good clean appearance, only minor, natural features, i.e. small pin knots permitted on the 'B' Face.

'B' grade is normally only available with 'BB' Grade reverse. (See grading information below for BB).

Grades S/BB & S+/BB (Face Grades)

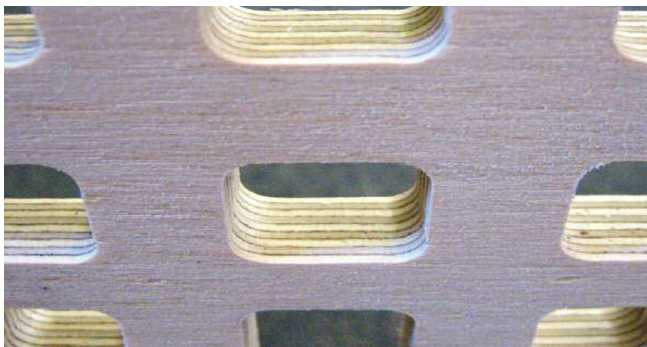
S Face is similar to Grade B, but allows more natural characteristics and the odd well-made patch – Generally good enough quality face for clear finishing or painting. S+/BB has a better face with no patches. The reverse is a standard BB Grade.

Grade BB/BB (Face Grades)

The main commercial or utility grade - both faces are Grade BB – which allows patches and other knots/imperfections. Suitable for all general work including CNC Machining or where face grade not overly important – However, good quality BB grade boards may be acceptable for clear finishing and furniture! Available in Long or Cross grain construction.



A 'Batman' shaped plug or patch – often found on BB Grade Plywood. These patches are well made and give a sound/solid face.



Birch Plywood is widely used for CNC Machining as the core is solid all the way through.



LOWER GRADES – (Cores are still solid)

Grade BB/CP and BB/WG

Grade BB face with WG or CP reverse. Standard commercial grades which are essentially only sound (Good) one side – Reverse side can have numerous large knots, open splits/defects and discolouration.

Grade CP

Russian Grade – In between BB and WG used where face appearance not important, i.e. packing crates, furniture carcasses.

Grade C

Similar appearance and use as Grade WG – may be un-sanded with open defects and discolouration.

Grade WG

Large knots / patches / open defects, staining and discolouration permitted - used for packing crates and carcass work or where unseen, such as upholstered furniture.

How to specify Birch Plywood. Relevant Standards and Grades.

BS EN 635-2: 1995 Plywood – Classification by Surface Appearance. Part 2. Hardwood

Note: - within BS EN 635-2: 1995 Plywood, five grades are classified, E, I, II, III and IV - for ALL hardwood species.

However, European Birch plywood is generally graded according to a country's own National Grading Rules - so only approximate comparisons can be made with BS EN 635-2: 1995 Plywood, as the grades from the countries below tend to be more stringent.

Therefore, for practical purposes it is often easier to specify by Grade Letter, i.e. Grade B/BB or by the grade and country of origin, i.e. Finnish Birch Plywood, Grade S/BB or Latvian Birch Plywood, Grade BB - depending on end use requirement. The Grades refer to the faces, as the core of Birch Plywood is always sound and solid (only very minor core gaps may be present).

The bond type must also be specified, i.e. BS EN 314-2: 1993 Plywood. Bonding quality. Class 1, 2 or 3, depending on service class and applications.

BS EN 635-2: 1995 Plywood Grades for all hardwoods	Guide to end use for birch grades	Finnish birch	Latvian birch, Polish birch	Russian Birch grading rules
Grade E		Approx Equivalents - But generally higher quality than BS EN 635-2: 1995 Plywood.		
Grade I	Clear-finishing, decorative uses, furniture, wall panels, toys, models, shopfitting, interior design	Grade A - This quality is near perfect ! But not commercially available any longer.		Not available as per BS EN 635-2: 1995 Plywood grading rules
Grade II		Grade B - Normally only available as B/BB.	Grade B Available as B/BB	
Grade III	General use furniture, painting laminating and veneering	Grade S – Normally available as S/BB		S/BB S+/BB – improved 'S' Grade
Grade IV		Grade BB – Main commercial grade with two sound faces. BB/WG - only has one sound face. Good quality Utility Plywood, the all round workhorse for the trade.		BB or BB/CP (one sound side) are main commercial Russian Grades
	Packing cases, pallet bases, carcassing	Grade WG		CP/CP or CP/C
			Grade C – Un-sanded	C/C

Please note - 'E' grade is not commercially available at present and B/B is very difficult to obtain.

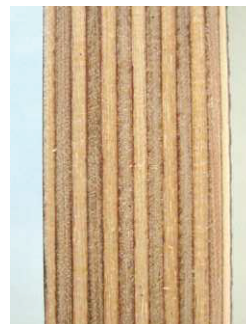
Bond type and where to use Birch Plywood

The majority of Birch Plywood available at Cworkshop is bonded with thermosetting, exterior quality phenolic resin adhesives – formerly known as WBP (Weather and Boil Proof). Several standards now relate to the manufacture and specification of plywood, the main one being:- BS EN 314-2: 1993 Class 1, 2 or 3, with class 3 for exterior quality bonding. Most of the Birch Plywood supplied by us meets this standard and is also rated as E1, (very low formaldehyde release) and some Birch Plywood also meets the new 'CARB' Regulations.

Exterior quality adhesives generally appear as dark, purplish-brown gluelines on the plywood edges and are essential for applications that fall within use classes 2 to 3 of BS EN 335: 2013. The contrasting dark gluelines against the lighter birch veneers is often incorporated into contemporary design, consequently Birch Plywood is widely used for furniture, shelving and interiors. The uniform construction of birch plywood means that the faces and edges can easily be machined, then simply lacquered or waxed as required (for interior purposes) as the photographs here demonstrate.



Birch plywood used to clad the walls of this contemporary garden room creates a clean, minimalist look that works well in both large and small buildings. (Photo courtesy of Eco-Space Ltd. Photographer: Andy Spain).



The standard veneer thickness for most European Birch plywood is 1.4mm. Plywood normally has a balanced construction of alternating cross and long grain veneers, i.e. 9-ply for 12mm, 13-ply for 18mm, as can be seen here.

Typical applications for Birch Plywood



Birch Plywood screens and canopy at St Evelina's Children's Hospital, creates a secluded, informal space for patients.



Innovative uses of Birch Plywood - by Geoff Fisher.



Grada Birch Chair – by Rory Hogan



Bespoke Birch Plywood interior

Birch Plywood – Applications

Although Birch plywood is bonded with tough, durable exterior quality adhesives, standard uncoated birch plywood must always be protected with a suitable exterior paint or wood stain system if used in Service classes 2 or 3 of BS EN 636: 2012, i.e. in humid or exterior applications.

Prefinished birch plywood such as WISA-®Multiwall or Buffalo®Board can readily be used for exterior purposes, provided they are correctly detailed / installed, as the faces and edges are sealed against moisture ingress during the manufacturing process.

Birch Plywood can also be bonded with 'interior' quality adhesives and is generally used for LASER cutting of die forms, furniture, packaging and other non-structural end uses. Grades available include BB and C.

Structural Use

When Birch Plywood is specified for use in structural 'load-bearing' applications such as flooring, roofing and wall sheathing it must have an exterior glue line to BS EN 314-2: 1993 Class 3, plus must also conform to the CE Structural quality as defined in EN 13986: 2004 with reference to the Construction Products Directive (CPD).

Strength data (bending / compression) and other technical information for European birch plywood can be supplied in an electronic format, and for the design of Timber Structures the following EN Standard now applies:- BS EN 1995-1-1: 2004 + A1: 2008 Eurocode 5. Design of timber structures. General. Common rules and rules for buildings. This standard supersedes the 'old' BS 5268 Part 2: 2002, which has now been withdrawn and designers and engineers should use Eurocode 5 instead when designing timber structures.

Thin Birch Plywood

With us you can also get a wide range of very thin Finnish Birch Plywood, which can be used for model making, toys, jigsaw puzzles, interior design fittings, boxes, saddles, cards, drums and string instruments and other applications that require a tough, flexible material. Available thicknesses include 0.4mm, 0.8mm, 1.5mm and up to 3mm.

UPM GRADA® – Thermo-Formable Birch Plywood

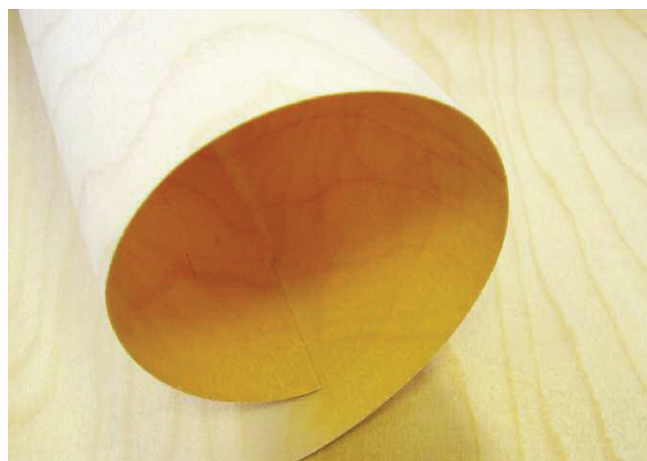
Grada® is an innovative concept which allows wood panels to be formed with heat and pressure. A special adhesive foil is used allowing the birch veneers to slide when heated, so curved components can be manufactured. There is minimal wastage, increased stability and greater productivity. Grada is available in a range of thicknesses – from 4.5mm to 13mm.



New – Grada for curved and formed Birch Plywood components.



'Centenary Bar' at Sheffield University's School of Architecture, CNC machined Grade S/BB Birch Plywood with WISA-Hexagrip floor.



Thin' Birch Plywood is available from stock.

