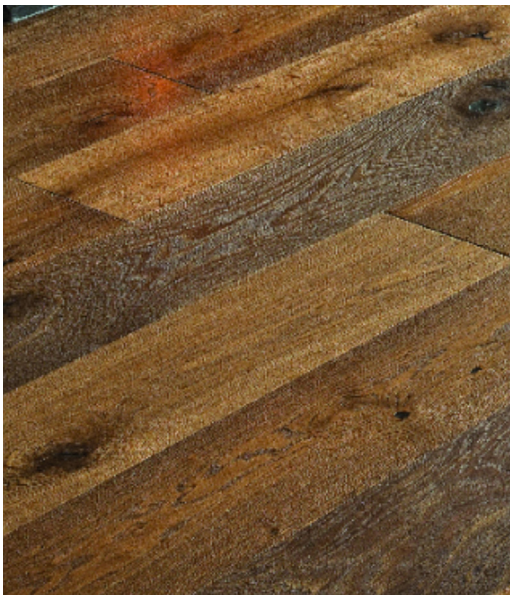
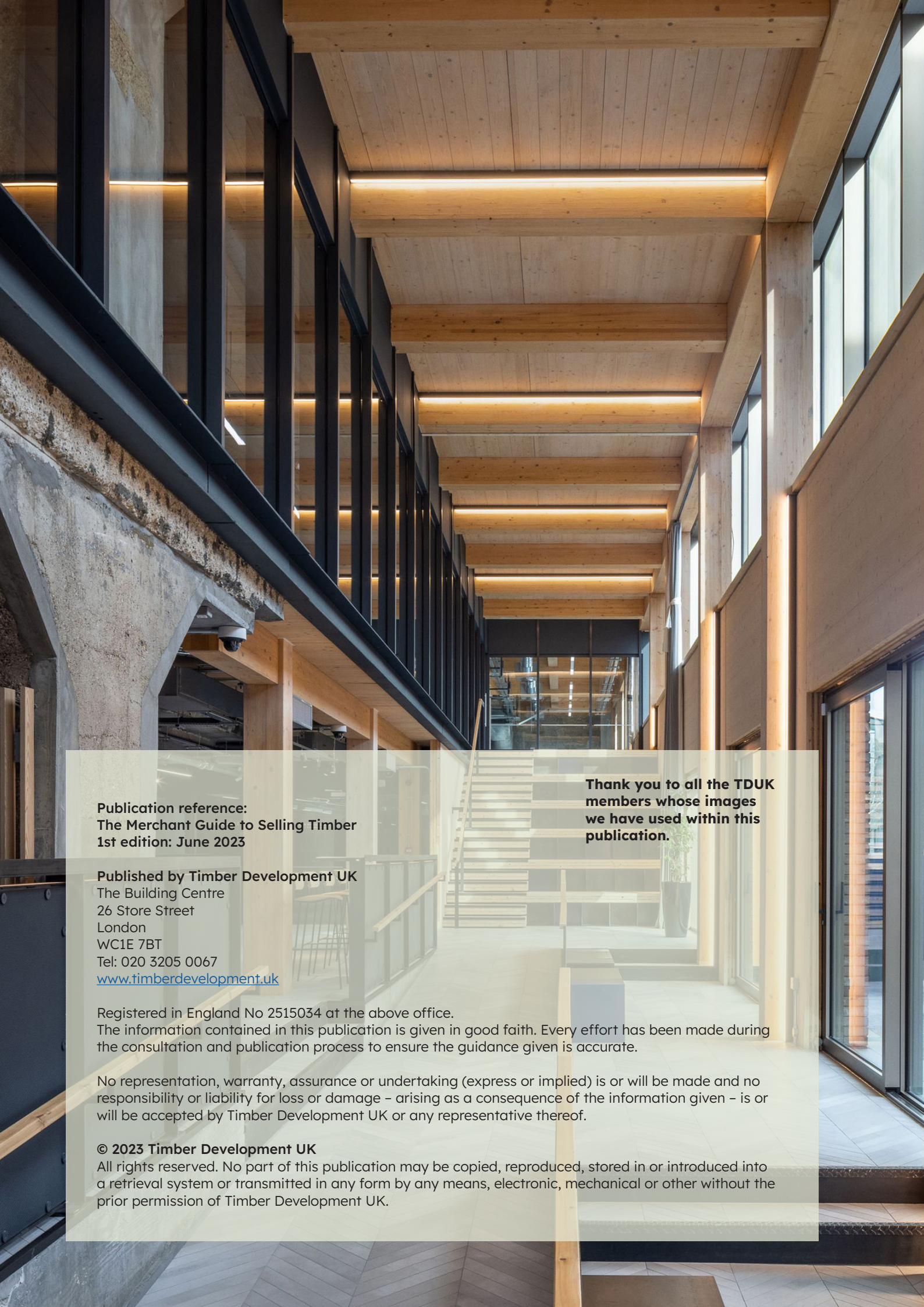
TIMBER DEVELOPMENT UK



THE MERCHANT

GUIDE TO SELLING TIMBER



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The aim of this Guide is to help you and your branch staff learn more about the different types of timber available on the UK market.

Timber and wood products are recognised as the most profitable product category for many builders' merchants. Representing up to a quarter of a general merchant's turnover, wood products now offer a huge range of both standard and special use material, designed for more specific applications.

In this Guide you will find an overview of many of the different types of timber and timber products, as well as information about their uses and the BS EN Standards and certifications relevant to each.

You will also find top tips and suggestions of questions you may wish to ask your customers to make sure you always give them the right advice and stock the best products.

This Guide is an introduction to timber – always seek advice from your TDUK supplier if you have any questions.

THE BENEFITS OF TIMBER

Timber is a low-carbon, natural resource that is the most sustainable material available for the UK construction industry.

Awareness of the benefits of timber is growing rapidly as the UK moves towards net-zero construction, and your customers will want to learn more about how they can build better with wood. So, what are the benefits of timber?

- Timber is one of the most sustainable construction materials, offering the lowest embodied CO_2 of any raw building product. It is also organic, non-toxic and naturally renewable.
- Timber is safe to use, easy to work and cost-effective, since its production requires far less energy than other building materials.
- Timber is the only construction material that is 100% renewable. Even once it has been used in a building's structure, timber can be repurposed and reused at the end of that building's useful life.
- Timber species are harvested from countries right across the world. The global timber supply chain works tirelessly to establish sustainable global forest management practices, ensuring continued biodiversity and helping the world's productive woodlands to continue to thrive.
- Remember – always buy from a TDUK member to get timber you can trust
- Timber buildings and structures are shown to have a positive effect on mental health and well being among the people who live and work in them. Studies have shown that offices with wooden interiors have reported increased feelings of innovation, energy and comfort, as well as a boost in cognitive ability.
- Timber systems are designed to be well-insulated, maximising performance and minimising air leakage. Timber has also been shown to moderate internal humidity levels, improving indoor air quality.
- Timber engineered wood products such as cross-laminated timber (CLT), glued laminated timber (GLT) and laminated veneer lumber (LVL) feature heavily in hybrid construction. This takes the best qualities from different building materials to create the best possible building.
- Timber construction can often be up to 25% faster than traditional masonry construction, meaning less time on site and improved productivity.

TIMBER DEVELOPMENT UK

OUR MISSION
TDUK is the new organisation created from the merger between the Timber Trade Federation and the Timber Research and Development Association (TRADA). As the UK's largest, most comprehensive supply chain body for timber, we are committed to helping you grow your connections, knowledge and influence. Our core aims are:

TO CONNECT THE SUPPLY CHAIN
By bringing together the largest supply chain body in the UK, spanning from sawmill to specifier, and all points in between.

TO LEAD BEST PRACTICE
By building the largest, most comprehensive online library of technical specification and design guidance for our members.

TO ACCELERATE A LOW-CARBON FUTURE
By creating the tools, training, and guidance to support the sustainable timber supply chain to lead as a net-zero industry.

PLYWOODS

COATED PLYWOOD

Most Plywood is sold uncoated. Coated Plywood has a variety of specialty end uses:

Phenolic Film Faced

Smooth moisture-resistant faces are created by adding phenolic resin impregnated paper films. Panel edges will also in most cases be sealed. The smooth-faced film plywoods are used in concrete applications and where additional moisture resistance is a requirement. See individual manufacturers' literature for detailed specifications.

Pattern Faced

These panels are a variant of the above, with one face imprinted with a choice of patterns and a smooth film reverse. They are often used for quality scaffolding platforms and where grip is important, such as the transport sector.

MDO Panels

Medium Density Overlay (MDO) is an alternative to phenolic film faced Plywood for specialist form-work applications where a matt finish is required to the concrete and multiple reuse is a critical factor.

Painted overlay

Birch or combi-panels with a painting paper overlay. These are used for vehicle sides, walls, doors, traffic signs and building façades designed to be painted.

PRODUCT TYPES AND USES

Plywood is a highly sustainable building material used for a wide range of applications from wall and floor sheathing to designer interiors

There are two main types of plywood: Construction and Appearance. The raw material used for manufacturing plywood consists of sustainably managed coniferous, temperate or tropical species.

Logs are peeled into veneers which are then glued together, layer by layer, cross-banded, to use the natural strength of the wood's grain to create strong and rigid wooden panels.

Manufacturers use a quality controlled resin in the gluing process to ensure a good, solid plywood product. The exact class of resin will determine whether the Plywood is suitable for Dry, Humid or Exterior applications.

Storage tips

To keep quality standards high, keep stocks of plywood panels protected from the weather, flat and stacked on a firm base, with enough bearers to prevent sagging. Plywood should always be stored in similar conditions of temperature and humidity to where they will be used, both by the merchant and their customer.

Examples of Appearance plywoods

European Birch, European Poplar, Malaysian, Indonesian, Okoumé, Douglas Fir and Chinese Poplar or Eucalyptus core would all be examples of Plywood where appearance is often the primary function. Such Plywood may also be called Hardwood-faced Plywood.

Besides being attractive to look at, Plywood provides a variety of properties, but it is important to fully understand what the products you offer can do. Some products will be good for general applications, while others will be more dense and often more durable.

Birch Plywood, for example, is noted for its strength, stiffness and resistance to creep. It also has high impact resistance, making it especially suitable for heavy duty floor and wall structures.

Typical uses for Birch Plywood include:

- Floor and wall systems
- Furniture
- Formwork
- Die-boards
- Load-bearing structures.

Examples of Construction plywoods

Finnish Spruce, Brazilian Elliottis, Chilean Pine and Douglas Fir are described as Coniferous or Softwood Plywood and are the backbone of the Construction Plywood sector. Chinese Poplar or Eucalyptus core Plywood may also be used in some construction applications.

It is important to check the structural performance of the Plywood is suitable for the intended end use. Where extra durability is required Marine Plywood can often help.

Structural grades have been applied to sheet materials intended for structural use. You can find more information on page 34.

Construction plywood

The panels are typically lightweight, easy to work with and nail, and offer good strength and stiffness properties.

Typical uses for Construction Plywood include:

- Floors, walls and roofs in house construction
- Internal vehicle panel work
- Packaging and boxes
- Temporary fencing works.

Dimensions

Overall, Plywood is available from 3mm to 50mm thick, with 12mm and 18mm being the most common. Sheet size will typically be 8x4ft (2440x1220mm).

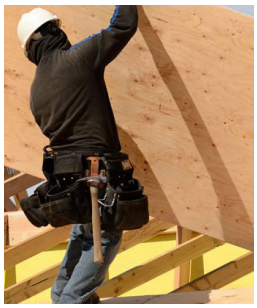
WHAT TO ASK CUSTOMERS

Choosing the right timber product depends on where and how it will be used. Here are some key questions to ask before you offer any advice

Where will it be used?

- Indoors in a totally dry environment?
- Indoors in a humid environment like a kitchen or bathroom?
- Outside (if so, will it be exposed to the weather)?
- As site hoarding or shuttering?

These questions help establish which Technical Class of product to recommend to your customer (see Quick Reference Table on page 11).



How will it be used?

- Structurally (does it need to bear a load)?
- As temporary flooring or as a floor covering?
- To cover temporary works outside?
- To protect a floor surface?
- For security (to keep out people or machinery)?

Is sustainability certification needed?

- Has FSC- or PEFC-certified timber been requested?
- Is FLEGT-licensed plywood needed?

Note: Only FLEGT-licensed Indonesian plywoods are currently available in Britain, and from limited sources.

Is a Reaction to Fire or Formaldehyde classification specified?

- If so, ask to see the architect's specification
- Check any specific requirements, such as Reaction to Fire Classification (e.g. Euroclass B, s-0, d-0)

Remember: Reaction to Fire Classifications of sheet materials for flooring use slightly different terms, e.g, BFL and CFL. Is a low formaldehyde rating required?

Note: TDUK member suppliers can offer E1 or E0 Formaldehyde ratings (the lowest available).

• • •

ALWAYS ASK THE RIGHT QUESTIONS

ARE ANY ADD-ON PRODUCTS REQUIRED?

Any customer buying plywood will certainly need additional building products to complete their project. Always check if they have everything else they need, such as:

- Battens
- Fixings (ironmongery or adhesives)
- Cutting tools
- Masks or PPE
- Coatings (coloured or clear)
- Edge sealants (e.g, end grain sealant)

WHAT ARE THE DELIVERY CONDITIONS?

Is there parking and easy site access for off-loading?

Is a fork-lift available for off-loading?

Are there any restrictions on delivery times?

Any other site-specific requirements? (e.g, if delivering to a major contractor, is FORS accreditation required?)

Where will products be stored on site when not in use? Remember: some products deteriorate if moisture is present.

GLUE BONDS, SPECIES AND SPECS

Watch out for plywood containing illegally harvested timber content – your business reputation as a merchant could be harmed if you don't

Research by Timber Development UK has revealed that some plywood imported into the UK may carry inaccurate descriptions of both the glue bond and the wood species content. Products with an inferior glue bond can delaminate over time and fail during use, especially in humid or exterior conditions.

Your reputation as a merchant could also be harmed if the plywood you sell is discovered to include illegally-harvested timber content, so always do your due diligence.

Government sanctions in early 2022 have also banned the import of Russian timber to the UK. Since the majority of birch plywood forests are found in Russia, it is important to check the origins of any Birch Plywood you may be offered while these sanctions are in place.

Safety Implications

Why does an inferior glue bond matter?

Products with an inferior glue bond, or which are not suitable for the product's end use on site, can delaminate and fail in use. Builders often use plywoods to create a surface to walk on while on site, so the safety risks of a delaminated plywood board can be serious – their safety could be in your hands.

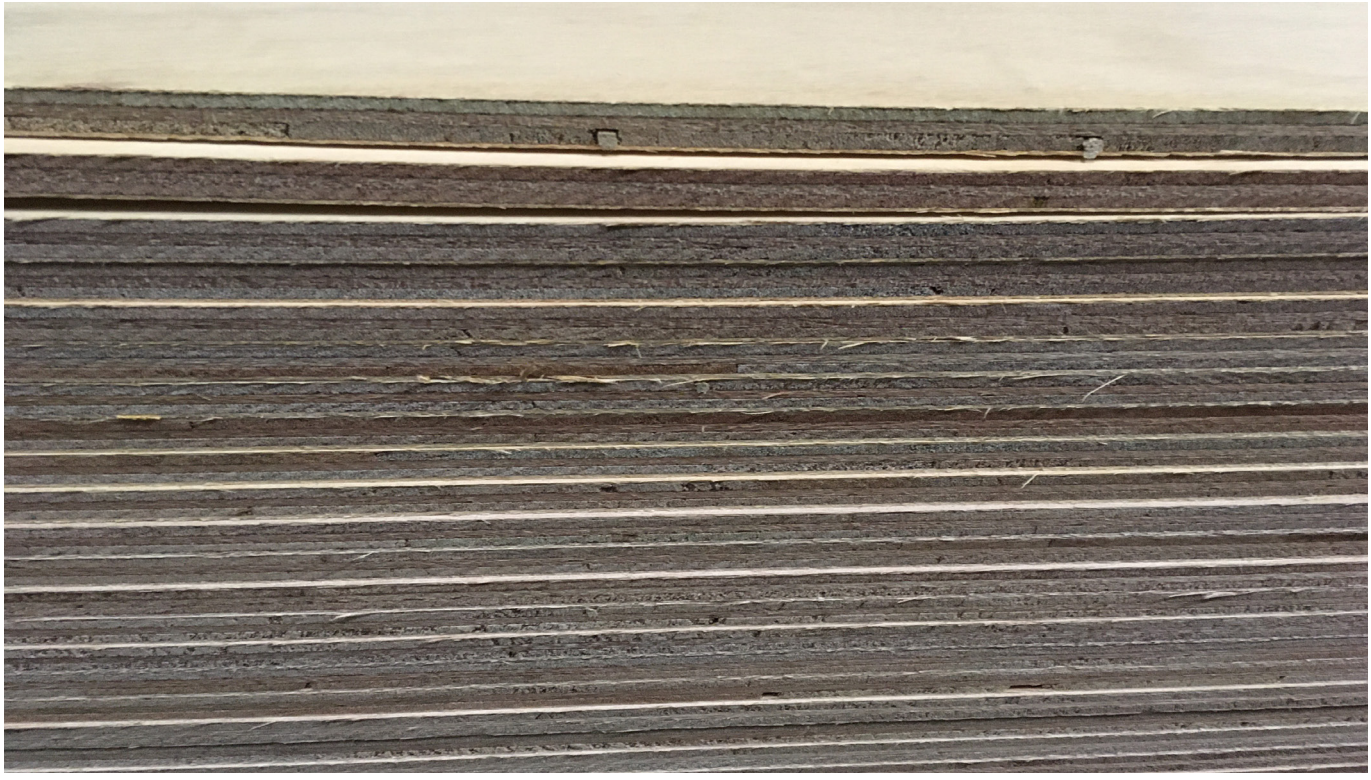
If Plywood delaminates once installed builders may be called back, making them less likely to buy from you in the future.

What can you do?

Check the glue bond and product Declaration of Performance (DoP) provided by your supplier for details of where it can be used, and always keep a copy safe for your records. If in doubt, always contact your supplier for more information or for more documentation.

TDUK supplier members undertake extra due diligence with their supply chain to ensure the products they sell are always fit for purpose when specified and installed correctly.

"Your reputation as a merchant could be harmed if the plywood you sell is discovered to include illegally harvested timber."



LEGALLY HARVESTED WOOD CONTENT

How can you check the wood content of your plywood stock has been legally harvested?

- ✓ Buy from a TDUK member supplier: they undertake strict due diligence and independent audits on product content, origins, glue bonds and manufacturers' control standards.
- ✓ Check the Declaration of Performance
- ✓ Undertake your due diligence to satisfy the requirements of UKTR (which replaces EUTR).

FLAME-RETARDANT TREATMENT

Is a flame retardant treatment specified?
If you are unsure whether a plywood product you're selling needs to have a flame-retardant treatment applied, ask to see the architect's specification and check any specific requirements such as Reaction to Fire Classification (e.g. Euroclass B, s-0, d-0).
Learn more on page 12.

CHECK THE DOP, UKCA AND CE MARK

Why are DoPs, CE and UKCA Marks important?

A CE/UKCA Mark is a summary of the product's Declaration of Performance (DoP).

The DoP shows deep detail on the product manufacturer and control processes, the standards to which products conform, product details, Reaction to Fire Classification, Formaldehyde Emissions rating, glue bond types and applications.

The DoP gives you, the merchant, as much information as possible to help you recommend a safe, correct and fit-for-purpose product.

That in turn means you're doing your best to protect the reputation of your business, and doing your best for your customers.

What should a CE Mark/ UKCA show?

A CE mark is a summary of the full DoP. It should show:

- Factory production control certificate number
- Manufacturer and address
- The year the CE mark was first granted
- DoP reference number
- Harmonised Standard number
- Glue bond type
- Sheet thickness
- Formaldehyde Emissions rating
- Reaction to Fire Classification
- Where it can be used
- Where to find the full DoP.

Where can I find a product's DoP or CE Mark?

Ask your timber supplier for a copy of the manufacturer's DoP.

You can also find a product's DoP on the manufacturer's website, and possibly on your supplier's website, if they are not the original manufacturer.

A CE Mark – the summary of the full DoP – should be marked in certain places, as follows:

- on each plywood panel
- on the pack covering
- on the delivery documentation.

CE
17
Example Ltd, PO Box 34, EM3 3DI, City, Country
12341 – ADFUE - ######
EN ######
Notified Body ###
Internal and external use
Characteristic: ##
Characteristic: Class ##
Characteristic: ####
www.exampleltd.co.uk/DOP

CE Symbol

Last two digits of the year in which CE was first affixed

Name and registered address of the manufacturer

Reference number of the DoP
Reference to the harmonized technical specification

Intended use(s)
Identification number of the Notified Body

Website hosting the DoP

UK CA

CE marking must be present on all products that conform to a harmonised European Standard, e.g, BS EN 13986 for wood-based panels. CE marks are being replaced in Great Britain by a UK Conformity Assessed (UKCA) mark. Such marks are valid now and will eventually replace CE marks completely, but the final end date for this has not yet been confirmed.

PLYWOOD STANDARDS AND CERTIFICATION

A number of BS EN Standards apply to structural and non-structural plywood, and can be a useful reference for more information about suitable uses and applications

Standard numbers and what they cover

- Structural plywood: Testing according to EN 789, EN 1058 and ENV 1156
- Plywood Glue Bonds BS EN 314 Classes 1, 2 and 3
- Constructional plywood: BS EN 636 series
- Marine Plywood: BS1088-1: 2003 (covers both types, e.g, standard and lightweight marine plywood).

Other standards you may come across

- Euroclass B, C or D: refers to Reaction to Fire properties after a factory-applied, quality-assured flame-retardant treatment
- BS EN 335: biological durability of wood and wood-based products
- BS EN 12871: Wood-based panels. Determination of performance characteristics for load-bearing boards in floors, walls and roofs.
- BBA Certified - sometimes seen on Elliottis Pine plywood.

What does BBA Certified mean?

British Board of Agrèment (BBA) certification is sometimes used by manufacturers to support their claims that a product or system has been independently assessed against UK Building Regulations and classified as fit for purpose for a specific intended use.

Edge sealing

Always advise customers to edge seal Plywood where it is, or may be, exposed to moisture. This will extend its life and help prevent delamination. Specialist edge seal products are an important additional sales for merchants.

PLYWOOD GRADING

Plywoods are graded for visual appearance and/or for structural load-bearing purposes.

- **Visual grading relates to the appearance quality of both faces of the sheet, normally expressed as A, B or C. For example, a visual grading of B/BB means one face has a B grade, and the other a BB (lesser) grade.**
- **Structural plywood's mechanical qualities are best expressed using characteristic values (i.e. for use in design calculation according to EN 1995–1–1). These are given either in EN 12369–2 or by the manufacturer based on testing according to EN 789, EN 1058 and ENV 1156.**

Quick Reference Table: The Technical Classes of Plywood

Technical Class	Conditions	EN 314 Glue Bond	Applications
EN636-1S	Dry (Internal)	EN314 Class 1 Bond	Suitable for: Use Class 1 Dry Interior Only No exposure to moisture during construction. Furniture, packing cases, cupboards, shelving only.
EN636-2S	Occasional wetting or condensation (Humid)	EN314 Class 2 Bond	Suitable for: Use Class 1 & 2 Humid Interior or Covered Exterior Construction Limited resistance to moisture during construction phase. Wall, floor & roof structural applications (when listed on DOP)
EN636-3S	Exposure to weather or constant wetting (Exterior)	EN314 Class 3 Bond	Suitable for: Use Class 1, 2 & 3 Structural Applications Interior or Exterior Resistant to weather during construction phase. Wall, floor and roof structural applications (when listed on DOP)

FLAME-RETARDANT PLYWOOD

If a flame retardant treatment is specified:

- Ask for the architect's specification and keep it for your own records.
- Check specific requirements, such as Reaction to Fire Classification (e.g. Euroclass B, s-0, d-0)
- Match the product's Declaration of Performance (DoP) to the Euroclass Reaction to Fire Classification in the architect's specification
- Obtain and keep all relevant documentation from your suppliers demonstrating that their products meet the required standard for the intended end use, such as a Reaction to Fire Classification Report for the product.

What should you ask your customer?

Double-check with your customer where the required flame-retardant treated product will be used:

- Indoors in a totally dry environment?
- Indoors in a humid environment?
- Outside (exposed to the weather)?
- To be used as flooring?

Make sure that these details are communicated in writing to your timber supplier, along with any Euroclass Reaction to Fire Classification requirements, when you place an order.

Be aware that lead times from suppliers can be extensive and factor them into servicing your customer's enquiry.

What should you ask your supplier?

- Ask for (and keep) a copy of the product's Declaration of Performance (DoP) for any product the supplier recommends.
- Ask for (and keep) a copy of the product's Reaction to Fire Classification Report for any product the supplier recommends. If your supplier can't provide this information, find another supplier.
- Make sure the flame-retardant treatment has been factory-applied and quality tested: ask for documentary proof, e.g, Wood Protection Association Benchmark certification.
- Ask for confirmation of the possible lead times to produce the flame-retardant treated material.

Certification of factory applied treatments

The Wood Protection Association, the body responsible for all types of preservative and flame retardant treatments for wood products, has a quality mark scheme called Benchmark. Benchmark certification covers both the factory process and the end products.

Reaction to Fire Classification

Do you understand what the Euroclass Reaction to Fire Classification means?

- The Classes, denoted by capital letters A-E, refer to the material's resistance against catching fire (combustibility).
- Timber products, including plywoods, will only be able to achieve a Euroclass D as standard. This can be upgraded to Class C or B with an appropriate factory-applied, quality-assured flame retardant treatment.
- The letter 's' denotes smoke production, with s-0 being the best rating.
- The letter 'd' denotes the production of flaming droplets that could spread a fire; with d-0 being the best rating.

Note: Classification letters differ for products used in flooring. Learn more on page 29.

NEED FURTHER SUPPORT?
TDUK in partnership with the Wood Protection Association has produced a set of information leaflets to help with all of the above. Visit the learning resources section on www.timberdevelopment.uk and search Fire.

You can also learn more about timber and fire safety at our brand new Timber Fire Hub website – timberfiresafety.org. Produced in collaboration between TDUK, Swedish Wood and the Structural Timber Association, the Hub offers insight into the principles of fire safety when designing and constructing timber buildings.

SUSTAINABILITY CERTIFICATION SCHEMES

Three different types of sustainability certification can be obtained for plywood products:

- FSC®: Forest Stewardship Council – fsc.org/en
- PEFC™: Programme for the Endorsement of Forest Certification – www.pefc.org
- FLEGT: FLEGT stands for Forest Law Enforcement, Governance and Trade. (only currently available on Indonesian plywood products) – flegt.org

HARDWOODS

PRODUCT TYPES AND USES

Hardwood timber is sourced from a hardwood tree species – ideally a slow-growing, sustainably managed tree found in Europe, North America, Africa and Asia.

Machined standard products

PSE/PAR

- PSE means Planed Square Edge
- PAR stands for Planed All Around.
- Both terms are widely used to refer to simple, planed sections of timber.

Hardwood species available in these sections include American White Ash, American White Oak, Red Grandis, Meranti, European Oak and Sapele.

- Suppliers quote prices based on length.
- Width/thickness dimensions vary between species, e.g, from 10x46mm to 45x145mm in Red Grandis; 10x46mm to 94x94mm in Meranti; and 12x32 to 45x145mm in American White Oak.
- Check with your supplier for details of what dimensions are available in the customer's required species.

Door linings and casings

Hardwood door casings and linings are available ready-machined from some suppliers. Species available include American White Oak, European Oak, Walnut, Sapele and Meranti. Sections may be sold individually instead of in sets — check with your supplier.

- Door casings & linings are similar products. Casings differ slightly as the door stop is built in to stop the door swinging to and fro.
- Ask the customer for the width of the door opening to determine the best product. Some door linings have two sets of rebates in the top for fitting the two most popular door sizes.
- When hanging fire doors, customers will need a door casing/lining that has been certified as being suitable for fire doors. This is important to help ensure the customer's safety.
- For more on fire doors visit the Fire Door Alliance website at firedoors.bwf.org.uk

Machined mouldings

Hardwood machined mouldings are available as skirtings, architraves, window board, weatherbar, cills, scotias, dado rails and picture rails, as well as other mouldings.

Species available range from American White Ash and American White Oak to Red Grandis, Meranti, European Oak and Sapele. Not all products are available in all species, so check with your supplier.

- Suppliers usually quote prices based on length.
- Width and thickness dimensions vary with species and with product type.

Note: Hardwood skirtings from older houses may require special machining to match the profile.

Claddings and matchings

Hardwood claddings are more readily available in European Oak, American White Oak, Sweet Chestnut, and in tropical species such as Cumaru, Meranti and Iroko. Specialist hardwood sawmillers also offer a range of species, from Ash, Beech and Cherry to Maple, Tulipwood (Poplar) and Walnut.

A greater range of durable tropical hardwood species may be available as cladding, machined to order with lead times involved, so check with your hardwood supplier.

Durable hardwood species used as external cladding don't specifically require further timber treatment, providing sapwood is excluded, since it is non-durable. However, the customer may choose to purchase a coating: ask your supplier for advice.

Kitchen worktops

Hardwood kitchen worktops add value to the sale of kitchens. Few suppliers provide a choice of hardwood kitchen worktops, but they can be found in the market.

Currently available species in laminated hardwood kitchen worktops include:

- Oak
- Beech
- Iroko
- Walnut.

Specialist sawmillers may offer a larger range of boards, which can be customised by local joiners to create bespoke kitchen worktops. Check with your timber supplier.

Lead times
Ask for the customer's time-frame for delivery and check with your supplier, as lead times may vary according to the species and the availability of suitable dimensions in a particular species.

Made to order or stock item?
Few hardwood suppliers hold extensive stocks of hardwood kitchen worktops, so most will be supplied to order. Laminated hardwood kitchen worktop dimensions vary from 3,050mm-4,050mm long; 650-1,200mm wide and 27mm-40mm thick.

Variations can include the width of the stave (or section of laminated timber) which produce a different look to the finished worktop. Advise your customer that lead times may be involved, or to contact local joinery firms who may undertake bespoke work.

Are finish coatings needed?
Laminated hardwood kitchen worktops could be used without additional coatings, but both laminated and solid hardwood worktops may function best with a stain or coating on the usable surface.

Check with your TDUK supplier to ensure you can offer the correct types for the additional sale where required.

Decking and sleepers

Hardwood decking & sleepers are premium products offering a longer life span in service and most do not require preservative treatments. Hardwood decking boards are regularly available in the following durable species:

- Massaranduba
- Balau
- Cumaru*
- Ipé*
- Iroko
- Oak.

Specialist sawmillers may also offer decking in:

- Kapur
- Keruing
- Thermally modified Ash.

Sleepers
European Oak is the main hardwood species available as garden sleepers. Specialist sawmillers around the UK also offer other hardwood species, sometimes locally harvested, such as Sweet Chestnut and Douglas Fir, but be aware not all hardwoods are durable and non-durable species like Beech make a very poor choice for landscaping work.

Dimensions; special order or from stock?
Oak sleepers are a common stock item from timber suppliers.

- Dimensions are normally 100x200mm and in lengths of 2.4m or 2.6m.
- Some specialist sawmills can offer larger sizes, up to 150x260mm and 2.6m in length.

Hardwood decking
Profiles can be smooth or reeded, and some are available as reversible. Common species such as Balau may be available from stock from your supplier, but many suppliers will machine to order. Sizes vary with profile and species so check with your supplier, but examples of stock sizes are:

- Balau: ranging from 19x90mm to 28x145mm; lengths from 2.m-4.8m, but more usually available as 2.4m lengths. Some suppliers have accessories available in Balau, e.g, newels, spindles, rails.
- Ipe: from 19x90mm to 25x145mm
- Cumaru: common size is 19x140mm but most is produced to order
- Oak: ranges from 19x120mm up to 25x100mm and 22x125mm.

Lead times
Fresh cut oak sleepers can have a lead time of 7-10 days from specialist suppliers. Stock Oak sleepers are usually available within normal merchant delivery patterns, so ask your supplier.

Is timber treatment needed?
Oak is rarely treated, but may need treating in some instances, as it is assigned to durability class 2-4 in BS EN 350:2016. Hardwood decking from durable/very durable timber species should not need treating. Customers may apply a coating to retain the natural colouring or appearance over time, but be aware that some species are more reluctant to take a coating.

* Note that Ipé (Handroanthus, Roseodendron and Tabebuia) and Cumaru (Dipteryx) are now listed in CITES Appendix II meaning that, while the species is not necessarily threatened with extinction in the immediate term, trade is controlled. See speciesplus.net/species for the latest updates.

Exterior cladding

Exterior cladding is a specialist area. Ensure your staff understand the right advice to give, especially in relation to durability and fire retardant treatments for wood cladding and battens. Many hardwood species can be used for interior cladding. For exterior cladding, it is recommended to choose species which are listed as 'Durable' or 'Very Durable' in the hardwood table (see page 20). Specialist sawmillers may offer a larger range of species for cladding, machined to order.

Interior Cladding Species
Popular choices include:
- European Oak
- European Birch
- American White Oak
- American Cherry
- American White Ash
- American Black Walnut
- American Hard Maple
- Meranti
- Sapele
- Beech
- Tulipwood (Poplar).

Exterior Cladding Species
Popular species include:
- Sweet Chestnut
- European Oak
- Cumaru
- Iroko
- Garapa
- Thermally-treated Tulipwood.

Made to order or stock item?
Few suppliers hold extensive hardwood exterior cladding stocks; most will be machined to order. Check the architect's specification and discuss with your timber supplier. Tell your customer that lead times may be involved and get a written confirmation of anticipated time to delivery from the supplier. Hardwood claddings will need stainless steel fixings to avoid corrosion or staining wood cladding.

Is timber treatment required?
Durable and very durable hardwood species used as exterior cladding require no further timber treatment, unless a flame retardant treatment is specified.

Customers may have a preference for using a coating, for example to retain the colouring of the timber over time. Check whether the coating concerned will work with the timber species involved, as some timbers accept coatings more readily than others. Seek advice from your supplier.

Flame-retardant treatments
Wood cladding is classified as Euroclass D as standard. This can be upgraded to Class C or B with the application of appropriate flame-retardant treatments.

Always check Building Regulations to make sure that any exterior cladding specified is correctly treated and covered by the appropriate certifications.

It is not recommended that brush-applied flame retardant products are specified for exterior use, only those with factory applied timber treatments. If in any doubt, always seek further advice.

Laminated joinery products

More local joinery firms are investing in laminated timbers, especially those making windows and doors. Laminated hardwood sections offer a stronger, more stable product free from defects, producing less waste while saving time and money.

Species choice

Currently available hardwood species in laminated joinery products include:

- Oak – many types
- Sapele
- Meranti
- Sipo (Utile)
- Red Grandis.

Lamination types

Finger-jointed: Many products are finger-jointed; a technique which removes defects and produces a stronger product.
KKK: Finger joints are visible in all lamellas throughout the piece.
DKD: Finger-joints are only on the hidden lamellas inside the piece, presenting four clear outer faces along the length.

Availability & Dimensions

Hardwood suppliers may keep stocks of laminated hardwoods. Materials can come as laminated blanks (components) for conversion by joiners and woodworkers, or as specific door, stair or window components, e.g, stiles/heads, frames, rails, newels, strings, treads or risers.

- Laminated components can be any length, but generally range from 1m-6m for general joinery
- Thickness and width vary widely depending on the component.

Ask your supplier which products suit joinery firms in your area.

Lead times

Larger suppliers may have their own laminating presses to produce material to order, with appropriate lead times. Common products, e.g, blanks for window, door and stair manufacture, are often held in stock and available in normal merchant delivery time-frames.

Are finish coatings required?

Laminated hardwood blanks normally need no further treatment. Joiners may choose to add a coating, e.g, if they are using hardwood laminated components in doors and windows. Make sure the timber and the coating will work together: some species are more willing than others to take a coating. Always ask your supplier for advice.

DON'T FORGET SOFTWOODS

Softwood timbers are also suitable for use as laminated joinery products. See the Machined Softwoods section on page 39 for more information.

Hardwood flooring

Hardwood flooring comes in both solid and engineered forms. To make sure you recommend the right product, always ask your customer where the flooring will be used to determine the likely wear and tear on the surface.

All wood flooring, whether solid or engineered, needs to be left in the room in which it will be fitted to acclimatise for at least two days.

Species choice

Solid hardwood flooring: Many species of both temperate and tropical hardwoods are suitable for use as flooring. Many can also be obtained as parquet blocks. Some species you might encounter are:

- European & American White Oak
- American Black Walnut
- Oak
- Iroko
- Sapele.

Specialist sawmillers may offer a wider range of species.

Dimensions and availability

Less common timbers are available to order, while some ready-machined tongue-and-groove hardwood flooring is available from stock.

Some products are also 'end-matched' with a further tongue and groove at the ends of each board. Be aware that random lengths may be supplied, and thickness of product may also be a key factor at installation – so check with your customer.

Dimensions depend on timber species: some tree species produce wider or thicker boards than others so, again, check with your supplier.

Oak, the most popular species, at a 20mm thickness, comes in widths of 120mm-240mm and in lengths from 1m to 2.4m.

Temperate hardwood species such as Sweet Chestnut, Elm, Sycamore and Ash at a 20mm thickness are normally available in widths of 75mm-200mm, and generally in lengths of 1-3m.

Solid hardwood flooring from tropical species such as Iroko, Sapele and Cumaru vary in dimensions but, in general, are available in thicknesses from 14-20mm and widths from 90-140mm.

Hardwood finishes

Multiple finish options are available for solid hardwood and engineered wood floors. The grade of the timber also influences its appearance. For solid hardwood floors, the finish can be sanded or unsanded, and either waxed/varnished or oiled.

Engineered wood flooring can have a lacquered or an oiled finish, depending on customer preference.

A lacquered finish may perform better in a kitchen, sealing moisture out. UV filters can be incorporated into some types of coating to help retain the original wood colour over time. Certain hardwoods accept coatings well; others resist having a coating applied.

Ask your TDUK supplier for any advice you may need before accepting a customer's order for a coating to avoid any issues.

Engineered wood flooring

Popular hardwood species, incorporated into the top 'wear layer' of the engineered flooring 'sandwich', include Oak, American Black Walnut and Iroko, mirroring trends in solid hardwood flooring.

Dimensions and availability

The depth of the engineered timber floor board matters. An engineered floor laid over joists may need a 20mm thickness to support the loads applied; if laid over a concrete floor a 14mm thickness may suffice, but whatever the species in the top layer of the flooring, as it is fully supported from below, typical dimensions are:

- Total board thickness: ranges from 9.8mm-22mm
- Width: from 140mm-290mm
- Length: from 1.9m-2.2m; random lengths may be supplied.

Lead times

Ask for your customer's time-frame for delivery and check with your supplier, as lead times may vary depending on the particular species and the availability of suitable dimensions.

Is timber treatment required?

Hardwood flooring, solid or engineered, may benefit from either a lacquered finish or a UV oiled finish to help retain colour and repel spills, e.g, in a kitchen.

Boards, beams and structural

Structural hardwoods are best ordered from specialist suppliers who can give reputable advice: some hardwoods are less durable than others. Check the architects' or builder's specification, clarifying the end use, and ask your supplier for advice.

Hardwood boards are usually chosen more for their appearance, but always make sure you are aware of their potential uses in construction projects. You can find more details of hardwood uses on page 14.

Species choice

Boards are chosen on appearance for their properties for interior joinery work.

Hardwood beams and structural timbers offer greater strength and stiffness, and are available in longer lengths and larger sections than their softwood equivalents. Due diligence on sustainable sourcing is essential (see page 23).

Boards

Boards are available in a wide range of species, from Ash to Zebrano. They can be supplied in air-dried or kiln-dried options. Some boards, particularly from UK-grown hardwoods, can be supplied as 'square edged' (sawn all edges) or with 'waney edge' (with the outer bark still present along the length).

- Make sure you understand the durability and colour variation of each species and its grading.
- Some temperate hardwood species, e.g, Oak, have many appearance variations such as Pippy or Cat's Paw Oak; Tiger Oak; Brown Oak, White Oak, Red Oak, Character Grade, etc. Make sure you understand the differences: ask your supplier for further information.

Beams and structural

All wood intended for structural purposes comes under BS EN 14081. Hardwood strength grades are governed by BS EN 1912 and range from D30-D70. Read more on hardwood grading on page 22.

Oak is most suited to interior structural work or covered situations, e.g, barns, extensions/conservatories, carports and covered exterior walkways. Other species are more durable for long-term external use. If you are unsure, ask your supplier for advice. Species suitable for use in freshwater/marine environments include Balau, Greenheart and Ekki.

Availability and Dimensions

Some hardwood specialist suppliers stock logs of various species and store them, cutting them as needed.

Beams & Structural: Structural hardwoods and hardwood beams are produced to specification and generally require advance notice.

Boards: Ready-sawn boards of popular species are kept in stock by many specialist hardwood suppliers.

- West African tropical timber boards (e.g, Sapele, Utile) range from 1.8m-3.9m and above, depending on species;
- North American temperate hardwood boards, e.g, American White Oak range in length from around 2.1m-4.2m depending on species.
- Far Eastern and South American tropical hardwood boards range upwards in length from around 1.8m, dependent on the species.

Lead times

Specialist hardwood suppliers will carry stock of standard, sawn boards for joinery work; others carry stock in the form of logs, cutting as required.

Other requirements, e.g, waney edge and specific structural load-bearing beams, may require a longer lead-time and special handling.

Structural beams for major construction works are significantly heavy and require special handling.

Is timber treatment required?

Most structural hardwoods are durable and need no further preservatie treatment. However, if they are being used in water (freshwater/marine environments), species choice is critical to the working life of the timber in use as very few are suitable for such applications.

TOP 20 HARDWOODS

Hardwoods are back in demand. Make yourself familiar with the 20 top-selling hardwood species, their uses, strength classes and features

Species	Strength class (if appropriate)	Durability	Uses
Oak – all kinds	D30-40	Durable to moderately durable	Interior and exterior joinery, furniture, flooring, sleepers, decking
Sapele		Moderately durable	Interior and exterior joinery, furniture, flooring, decking
Walnut (predominantly American Black Walnut)		Moderately durable	Furniture and joinery
Ash – all kinds	D40	NOT durable	Tool handles; interior joinery, furniture, flooring
Cherry – all kinds		Moderately durable	Interior joinery, furniture
Beech (European)	D35	NOT durable	Interior joinery, furniture, flooring
Meranti	D24 (NL*)	Slightly durable	Interior and exterior joinery, furniture
Greenheart	D70	Very durable	Heavy structural use and marine works
Sycamore		NOT durable	Interior joinery
Balau (Yellow)	D70	Very Durable	Decking, structural use
Maple – all kinds (e.g. American Rock, American Soft, Canadian Hard etc)		NOT durable	Interior joinery, furniture, flooring
Poplar (Tulipwood)		NOT durable	Interior joinery, furniture, flooring. Heat modified Tulipwood can be used for exterior cladding
Sweet Chestnut		Durable	Interior and exterior joinery, furniture; also agricultural fence posts
Iroko	D40	Durable	Interior and exterior joinery, cladding, decking
Idigbo		Moderately durable	Interior and exterior joinery, decking
Lime (European)		NOT durable	Interior joinery, furniture
Ekki	D60-D70	Durable to very durable	Structural use, decking, freshwater and marine construction
Massaranduba	D60	Durable to very durable	Structural use, decking, freshwater and marine construction
Cumaru	D60	Very durable	Decking, cladding, structural use, flooring
Utile (Sipo)		Moderately durable	Interior and exterior joinery, furniture, decking

NL* Graded in The Netherlands as D24 – not suitable for structural use

WHAT TO ASK CUSTOMERS

Choosing the right hardwood depends on where and how it will be used. Here are some key questions to ask

Where will it be used?

- Indoors in a totally dry environment?
- Indoors in a humid environment?
- Outside (if so, will it be exposed to the weather)?
- In contact with the ground, e.g, garden sleepers?

How will it be used?

- Structurally (does it need to bear a load, such as a structural beam)?
- As flooring – is it in a heavy or light footfall area?
- For a kitchen worktop?
- In joinery work – for staircases, cabinets, doors, windows?
- In the garden as decking or to create seating?
- As a decorative feature indoors, e.g, cladding?
- To make furniture, e.g, Waney Edge Pippy Oak for a feature table?

Is sustainability certification needed?

- Has FSC- or PEFC-certified timber been requested?
- Is Grown in Britain requested?
- Is FLEGT requested?

Note: Except for Indonesian hardwoods, FLEGT-licensed products aren't yet widely available in Britain.

Finish, appearance and treatments

The type of sawing used to produce the board creates different visual effects, e.g, plain or through-and-through sawn, quarter sawn (often asked for with Oak), or rift sawn.

Boards can be rough sawn or planed, so ask the customer's preference. If in doubt, ask your supplier for advice.

- Customers may also have a preference for air-dried or kiln-dried timber.
- Moisture content may also be important for joinery work.
- Hardwoods don't generally require a preservative treatment but customers may apply a coating: check it will work with the species concerned.

• • •

ALWAYS ASK THE RIGHT QUESTIONS

Are any add-on products required?

Any customer buying hardwood will certainly need additional building products to complete their project, such as:

- Battens (hardwoods are heavier than softwoods, so customers may need thicker/stronger battens)
- Fixings (ironmongery or adhesives)
- Cutting or sanding tools
- Masks or PPE
- Coatings (stains/varnishes) or brushes
- If used as flooring, are any lacquer or UV oils required?

What are the delivery conditions?

Hardwoods are heavy and dense. Sleepers, planks and structural beams may need lifting gear to offload.

Is there parking and easy site access for off-loading?

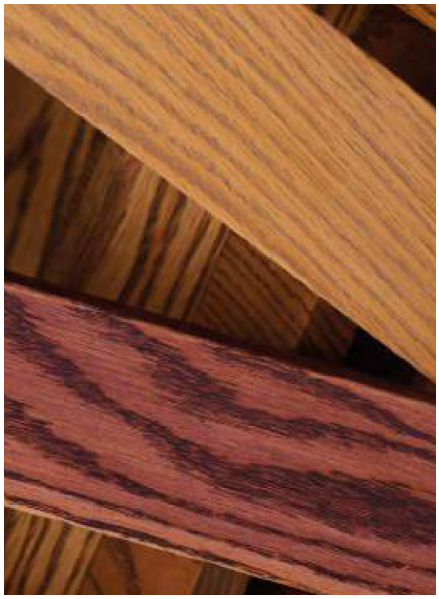
Is a fork-lift available for off-loading?

Are there any delivery time restrictions?

Any other requirements? (e.g, is FORS accreditation required?)

Will products be stored under cover or outside on site when not in use?

HARDWOOD GRADING



Hardwoods can be graded in a number of different ways:

- For structural use under BS EN 14081
- THA and THB: for Heavy Structural Temperate Hardwoods in large-sections >100mm thick.
- TH1 and TH2 for General Structural Temperate Hardwoods in small sections <100mm thick.
- STH for Structural Tropical Hardwoods.
- In terms of durability.
- In terms of their appearance, which varies according to species, e.g. FAS (first-and-seconds) grades.

Hardwood's technical classes are normally shown on the product's Declaration of Performance, if it is a timber covered by harmonised standards under the Construction Products Regulation.

Appearance grading

Ask your supplier for help defining the right product for your customer, as there are many variations on a theme in appearance-graded hardwoods. Some sawmillers have their own appearance grading system. Terms you may hear include:

- **FAS**: Firsts and seconds – used to grade American hardwoods; shows good material for joinery and furniture/moulding.
- **FAS Imperial**: a grading system used largely for West African timbers, with set limits on various characteristics
- **Prime & Select**: used in grading Malaysian timbers such as Meranti.
- **Character, Prime/Super Prime, Pippy, Burr, quarter sawn**: these mostly refer to the appearance grading of Oak from different countries. Some American hardwoods also use terminology such as Prime/Super Prime.

Structural strength classes

Hardwood strength classes are defined in BS EN 338. This allocates numbers starting with the letter D; the higher the number, the greater the bending strength.

- Tropical hardwoods such as Greenheart and Ekki are some of the strongest with a rating of D70
- Timbers more associated with internal joinery work or structural internal beams (e.g, internal oak beams) have lower D-ratings.
- Oak (of all kinds), Beech and Ash rate between D30-D40.
- Timbers used for exterior decking, exposed to the weather, such as Balau and Opepe, have a D50 strength class rating.
- Green Oak for timber framing is subject to different grading rules for structural strength grading.

DURABILITY

Terms like not durable or slightly durable, through to very durable, give an idea of the suitability of the timber for the customer's intended purpose. The following classifications and examples are given in BS EN 350 – the most important standard for timber durability.

- **Not Durable**: Ash, Beech, Lime, Poplar (Tulipwood) and Maple are considered not durable, so can generally be recommended for interior use.
- **Slightly Durable**: Meranti and Elm are classed as slightly durable and suitable for interior joinery and furniture.
- **Moderately durable**: Sapele, Utile (Sipo) and Idigbo are moderately durable, suitable for flooring, interior & exterior joinery and furniture.
- **Durable**: Iroko, Balau and Oak are considered Durable, suitable for interior & exterior joinery, decking and cladding
- **Very Durable**: Ekki, Greenheart, Purpleheart, Cumaru and Massaranduba are very durable, suitable for heavy construction and marine or freshwater use.

DUE DILIGENCE AND CERTIFICATION

Understanding FSC and PEFC certification and how they apply to the hardwood products you stock can help ensure the sustainability of the hardwoods you buy and sell. Always choose a TDUK member to ensure you are purchasing fully legal timber you can trust

Most European-produced hardwoods are available with either FSC or PEFC certification. To check which applies to the hardwood products you sell, ask your supplier for a copy of their Chain of Custody certificate. You can check the validity of that certificate using the chain of custody number at the following locations:

- **FSC Portal**: connect.fsc.org/fsc-public-certificate-search
- **PEFC Portal:** www.pefc.org/find-certified

With North American hardwoods, FSC and PEFC certification is less common for historical reasons. American hardwoods, however, come with a life-cycle analysis which may be useful to your customer. Learn about the American Hardwood Export Council's Life Cycle Assessment tool at www.americanhardwood.org/index.php/en/environmental_profile/american-hardwoods-life-cycle-assessment-tool

FLEGT-licensed timber is currently only available from Indonesia, but countries such as Ghana, Vietnam and others may soon be joining the list of hardwood-exporting nations covered by a FLEGT licence. Keep up to date with the latest information at timberdevelopment.uk

There is not currently sufficient FSC/PEFC certification across Africa, which makes reliance on the due diligence and legality requirements of UKTR essential. Only dealing with TDUK members, all of whom are audited every year on these aspects under the Responsible Purchasing Process (RPP), is the best route to ensuring that, as a merchant, you have access to the diverse and important range of African species available in the UK.

Your Due Diligence Responsibility

The UK Timber Regulation (UKTR) replaced EUTR on 1 January, 2021.

For any timber that you import yourself from around the world, you will need to develop your own Due Diligence process which clearly identifies your timber as 'Negligible Risk' of being illegal wood.

If you are buying from a supplier, whether they are a 'trader' or an 'operator' under UKTR, you will still need to understand your supply chain and to keep records of who you bought the timber from, and to whom you are selling it.

The onus is on you to prove the legality of the hardwood supplies you are selling to customers. Key questions to ask to ensure this are:

- Where has it come from and how do I prove it?
- How can I prove that the timber has not been illegally harvested?

Dealing with a TDUK member will always ensure you have the right answers.

As well as checking any claim to FSC or PEFC certification, you are advised to investigate your suppliers. If they are not TDUK members, who are all required to undertake the RPPP, then you are taking the risk of buying illegal wood.

FREE help on Due Diligence

To help you carry out your due diligence, you can download a FREE copy of the Due Diligence Toolkit produced for the timber supply chain and timber industries by TDUK in partnership with the Foreign, Commonwealth & Development Office at timberdevelopment.uk/resources/learn-the-essentials-of-due-diligence

UPSELLING AND CROSS-SELLING

Hardwood sales already represent added-value sales opportunities, and a merchant who asks the right questions could add significant value to a single timber sale. Here are some top tips on how to increase your sales

Other wood products

Does your customer need:

- Battening (non-load-bearing)?
  NOTE: Hardwoods may require extra support.
- Timber doors or windows?
- Timber flooring?
- Hardwood skirtings, architraves, etc, to match their design?
- Small mouldings for picture frames?
- Contrasting-coloured hardwoods to create a stunning visual effect?

Protective equipment

Does your customer need:

- Masks? (Dust-filtering masks are an essential piece of kit when working with hardwoods)
- Dust extraction equipment
- Gloves?
- Goggles?
- Safety footwear?
- Ear-protection equipment?
- Any other PPE to ensure their safety while on site?

Ironmongery, fixings and adhesives

In some situations (decking/cladding), hardwoods need stainless steel fixings so the fixings don't stain the timber.
Ask if they have:

- Screws, nails, supports for shelving, carpenters' pencil or tools for marking out?
- Handles, door knobs, window catches?
- Hinges, locks and ironmongery?

Paints, stains and sealants

Do they need:

- Paints, paint-mixing or stains?
- Exterior coatings?

Tools and equipment

Some hardwoods are easy to work, but others may need to be pre-drilled by suppliers. The stronger the hardwood, the more difficult it will be to work. Ask if your customers need:

- **Measuring:** angles, spirit levels, retractable measures, steel rule
- **Cutting:** hand saws; sawing blocks, mitre blocks, chop saws
- **Drills:** (manual or electric), and bits
- **Sanding:** sandpaper, sander
- **Painting:** brushes, brush cleaner, rollers, trays or spray painting equipment.

Other opportunities include:

- Sell exterior timber cladding to match the hardwood decking you are selling
- Sell a hardwood kitchen worktop to match the hardwood flooring (solid or engineered)
- Sell a contrasting-coloured hardwood to create a stunning visual effect for interior woodwork
- Sell solid or engineered flooring that matches or tones with structural timber beams being used in extensions
- Sell a laminated product instead of solid wood.

PANEL AND SHEET PRODUCTS

PRODUCT TYPES AND USES

Sheet materials are manufactured from processed and/or recycled timber often with the addition of an adhesive. Common sheet materials include plywood, oriented strand board, particleboard and fibreboard

Structural sheet material

As an alternative to Plywood, Oriented Strand Board has technical classes defined in BS EN 300 confirming its suitability for different end uses:

- **OSB2:** for use in structural and non-structural applications in dry conditions only. It is not suitable for wet or humid conditions or where water may leak, e.g, near pipework
- **OSB3:** for internal structural use in dry and humid conditions, and where it may get an occasional wetting, e.g, flooring and wall or roof sheathing. It is moisture-resistant but not suitable for shower rooms or wetrooms. Specialist OSB3 products are available for dry-lining and for PassivHaus buildings
- **OSB4:** is stronger and more moisture resistant, making it suitable for heavier loads; modern methods of construction and timber frame building
- **Pre-painted OSB:** suitable for site hoardings (check manufacturer's information)
- **FR OSB:** OSB board where a flame-retardant treatment has been incorporated during the board's manufacture.

Temporary floor coverings

Compressed hardboard sheets can be used as temporary floor coverings to protect a floor surface. Using this sustainable renewable material avoids the use of plastic sheeting for contractors who are concerned about plastics in the built environment.

Wood fibre boards and products

Wood Fibre board technical classes are given in BS EN 622 series covering hardboards, soft and medium boards, but the most common is medium-density fibreboard (MDF). This is a variety of sheet product that is now reaching well beyond its traditional uses.

MDF is available in sheet form, but also as pre-primed or coated skirtings and decorative mouldings. Exterior MDF is now available that, when fully sealed, can be used for a variety of outdoor applications such as signs, shop fronts and external woodwork. A water-repellent, fully exterior form of MDF is also now available with a 50-year guarantee when used above ground. See the modified wood section.

Shuttering and formwork

Plywoods are more commonly used for shuttering and formwork (see page 5 – Coated Plywood section).

Particleboard (chipboard)

Particleboard is made from a mixture of wood types such as wood chips, sawdust, shavings, etc, which are mixed with resin, compressed and dried. It is available in different forms such as three-layer, moisture-resistant and cement-bonded.

Particleboard technical classes are defined in BS EN 312 and range from P1-P7, but for merchants, the following are probably most critical:

- **P1**: General purpose boards for use in dry conditions
- **P2:** boards for interior fitments (including furniture) for use in dry conditions
- **P3:** non-load-bearing boards for use in humid conditions
- **P5:** load-bearing boards for use in humid conditions, most commonly seen as T&G Particleboard flooring
- **P6:** heavy duty load-bearing boards for use in dry conditions, most often used as a specialist mezzanine floor product.

It's important to remember that moisture-resistant does not mean 'waterproof'.

Wood fibre insulation

Wood fibre insulation is becoming increasingly popular, especially in projects looking to achieve high levels of thermal performance such as Passivhaus. It is available as rigid boards or in flexible format for insulating difficult spaces, or as air-injected material.

Wood fibre insulation is breathable, stopping the build-up of mould and dust mites. Wedge-shaped products can be used around windows and beneath window cills.

Decorative surfaces

Many TDUK members sell decorative surfaces ranging from panels made from organically grown plant materials to high-shine acrylic and wood-effect surfaces. These can add value to merchant sales, especially in the kitchens sector.

Veneered Panels: MDF, Particleboard and Plywood all provide an excellent base to which veneers can be applied. These may be traditional wood species laid in simple or complex configurations like quartersawn birds eye and book matched. There are also modern alternatives involving acrylics, metals and 3D printing.

Faced and Coated Panels: Particleboard and MDF provide the base for an increasingly diverse range of utility panels with melamine faced shelving and furniture panels being the most well known, and bathroom or shower panels becoming popular.

High Pressure and Decorative Laminates: HPL boards are composed of compressed paper layers and excel in very high scratch and impact resistance. making them suitable for wear-resistant and durable applications in wall coverings, furniture, worktops and doors.

WHAT TO ASK CUSTOMERS

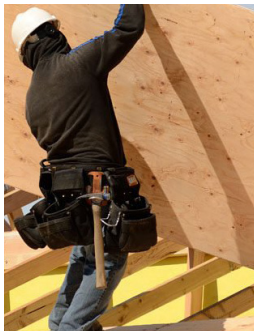
Choosing the right timber product depends on where and how it will be used. Here are some key questions to ask before you offer any advice

Where will it be used?

- Indoors in a totally dry environment?
- Indoors in a humid environment?
- Outside (if so, will it be exposed to the weather)?
- A site hoarding or shuttering?

These questions help enstablish which Technical Class of product to recommend to your customer.

How will it be used?



- Structurally (does it need to bear a load)?
- As temporary flooring or as a floor covering?
- To cover temporary works outside?
- To create internal cupboards or box in pipes?
- For security (to keep out people or machinery)?
- As a decorative surface indoors, e.g, in a kitchen or bathroom?
- To make furniture, e.g, Waney Edge Pippy Oak for a feature table?

Is sustainability certification needed?

- Has FSC- or PEFC-certified timber been requested?
- Is FLEGT-licensed plywood needed?

Note: Only FLEGT-licensed Indonesian plywoods are currently available in Britain, and from limited sources.

Is a Reaction to Fire or Formaldehyde classification specified?

- If so, ask to see the architect's specification
- Check any specific requirements, such as Reaction to Fire Classification (e.g. Euroclass B, s-0, d-0)

Remember: Reaction to Fire Classifications of sheet materials for flooring use slightly different terms, e.g, B_{FL} and C_{FL}. Is a low formaldehyde rating required? TDUK member suppliers can offer E1 or E0 Formaldehyde ratings (the lowest available).

PLYWOOD
Plywood is also considered a panel and sheet product, but for the purposes of this Guide we have given it its own section. See page 5 for more information.

ALWAYS ASK THE RIGHT QUESTIONS

Are any add-on products required?

Any customer buying sheet materials will certainly need additional products to complete their project. Always check if they have everything else they need, such as:

- Battens
- Fixings (ironmongery or adhesives)
- Cutting tools
- Masks or PPE
- Coatings (coloured or clear)
- Sealants (e.g, for bathroom panels)

What are the delivery conditions?

Is there parking and easy site access for off-loading?

Is a fork-lift available for off-loading?

Are there any restrictions on delivery times?

Any other site-specific requirements? (e.g, if delivering to a major contractor, is FORS accreditation required?)

Where will products be stored on site when not in use? Some products deteriorate if moisture is present.

CHECK THE DOP, UKCA AND CE MARK

Why are DoPs, CE and UKCA Marks important?

A CE/UKCA Mark is a summary of the product's Declaration of Performance (DoP).

The DoP shows deep detail on the product manufacturer and control processes, the standards to which products conform, product details, Reaction to Fire Classification, Formaldehyde Emissions rating, glue bond types and applications.

The DoP gives you, the merchant, as much information as possible to help you recommend a safe, correct and fit-for-purpose product.

That in turn means you're doing your best to protect the reputation of your business, and doing your best for your customer.

What should a CE Mark or UKCA show?

A CE mark is a summary of the full DoP. It should show:

- Factory production control certificate number
- Manufacturer and address
- The year the CE mark was first granted
- DoP reference number
- Harmonised Standard number
- Technical Class
- Sheet thickness
- Formaldehyde Emissions rating
- Reaction to Fire Classification
- Where it can be used
- Where to find the full DoP.

Where can I find a product's DoP or CE Mark?

Ask your timber supplier for a copy of the manufacturer's DoP.

You can also find a product's DoP on the manufacturers' website, and possibly on your supplier's website, if they are not the original manufacturer.

A CE Mark – the summary of the full DoP – should be marked in certain places, as follows:

- on each panel
- on the pack covering
- on the delivery documentation.

Examples of UKCA marks

CE/UKCA marking must be present on all products that conform to a harmonised European Standard e.g, BS EN 13986 for wood-based panels. CE marks are being replaced in Great Britain by a UK Conformity Assessed (UKCA) mark. Such marks are valid now and will eventually replace CE marks completely, but the final end date for this has not yet been confirmed.

UK CA

CE	CE Symbol
17	Last two digits of the year in which CE was first affixed
Example Ltd, PO Box 34, EM3 3DI, City, Country	Name and registered address of the manufacturer
12341 – ADFUE - ######	Reference number of the DoP
EN ######	Reference to the harmonized technical specification
Notified Body ###	
Internal and external use	Intended use(s)
Characteristic: ##	Identification number of the Notified Body
Characteristic: Class ##	
Characteristic: ####	
www.exampleltd.co.uk/DOP	Website hosting the DoP

Standards and certification

A number of British Standards apply to panel and sheet materials, and can be a useful reference if you need to know more about suitable uses and applications

Technical and service classes for structural sheet materials

Ask your customer where and how the sheet material will be used – the Service Class – as some panel products are not for use where moisture could be present. If in any doubt, ask your TDUK supplier.

Key standard numbers

- **BS EN 13986:** This is the UK Designated (EU Harmonised) Standard requiring all wood-based panels used in construction to be UKCA or CE marked. It covers the performance of panel products and methods of testing
- **BS EN 300:** Oriented strand boards (OSB) technical classes
- **BS EN 312:** Particleboard technical classes
- **BS EN 316** and **BS EN 622 series:** Wood fibre boards definitions and technical classes
- **BS EN 622-5 Fibreboards**: Dry process boards (MDF)
- **BS EN 636:** Plywood Technical Classes, Glue Bonds and end use environments (e.g, dry, humid, wet).

Other standards

- **BS EN 335:** biological durability of wood and wood-based products
- **BS EN 12871:** Wood-based panels Performance Specifications and requirements for load-bearing boards for use in floors, walls and roofs
- **BS EN 12369-1 Wood Based Panels:** characteristic values for structural design, OSB, Particleboards and Fibreboards.

Reaction to Fire Classification

Do you understand the Euroclass Reaction to Fire Classification?

- The Classes, denoted by capital letters A-E, refer to the material's ability to catch fire (combustibility).
- Timber products, including plywoods, will only be able to achieve a Euroclass D as standard. This can be upgraded to Class C or B with an appropriate factory-applied, quality-assured, flame retardant treatment.
- The letter 's' denotes smoke production, with s-0 being the best rating.
- The letter 'd' denotes the production of flaming droplets that could spread a fire; with d-0 being the best rating.
- Reaction to Fire Classifications of sheet materials for flooring use slightly different terms e.g. B_{FL}, C_{FL}.

NEED FURTHER SUPPORT?
TDUK in partnership with the Wood Protection Association has produced a set of information leaflets to help with all of the above. Visit the learning resources section on timberdevelopment.uk and search for Fire.

LEGALITY/ SUSTAINABILITY CERTIFICATION SCHEMES

Always deal with a TDUK member who are the experts in legality and certification, but three of the schemes you may see linked to panels and sheet materials are:

- FSC®: Forest Stewardship Council – fsc.org/en
- PEFC™: Programme for the Endorsement of Forest Certification www.pefc.org
- FLEGT: FLEGT stands for Forest Law Enforcement, Governance and Trade. (only currently available on Indonesian plywood products) https://flegt.org

FLAME-RETARDANT SHEET MATERIALS

If a flame retardant treatment is specified:

- Always ask to see the architect's specification and keep it for your own records.
- Check any specific requirements, such as Reaction to Fire Classification (e.g. Euroclass B, s-0, d-0)
- Match the product's Declaration of Performance (DoP) to the Euroclass Reaction to Fire Classification in the architect's specification
- Obtain and keep all relevant documentation from your suppliers demonstrating that their products meet the required standard for the intended end use, such as a Reaction to Fire Classification Report for the product.

What else should you ask your customer?

Double-check with your customer where the required flame-retardant treated product will be used:

- Indoors in a totally dry environment?
- Indoors in a humid environment?
- Outside (exposed to the weather)?
- To be used as flooring?

Make sure that these details are communicated in writing to your timber supplier, along with any Euroclass Reaction to Fire Classification requirements, when you place an order.

Be aware that lead times from suppliers can be extensive and factor them into servicing your customer's enquiry.

What should I ask my supplier?

- Can the product that my customer requires be obtained with a fire-retardant treatment?
- Ask for (and keep) a copy of the product's Declaration of Performance (DoP) for any product the supplier recommends.
- Ask for (and keep) a copy of the product's Reaction to Fire Classification Report for any product the supplier recommends. If your supplier can't provide this, find another supplier.
- Make sure the flame-retardant treatment has been factory-applied and quality tested. Ask for documentary proof, e.g, Wood Protection Association Benchmark certification.
- Ask for confirmation of the possible lead time necessary to produce the flame-retardant treated material.

Quality certification of factory-applied treatments

The Wood Protection Association, the body responsible for all types of preservative and flame-retardant treatments for wood products, has a quality mark scheme called Benchmark. This covers the factory process and the end products.

Benchmark QUALITY APPROVAL SCHEMES WPA

REMEMBER:
'Reaction to fire' classifications are completely different to 'resistance to fire' ratings, and yet the two terms are often misunderstood and taken to mean the same thing.

TDUK, in partnership with the Wood Protection Association, has produced a set of information leaflets to help with all of the above. Visit the learning resources section on timberdevelopment.uk and search for Fire.

The Wood Protection Association also has more information that can help you at www.thewpa.org.uk/flame-retardants

STRUCTURAL AND FRAMING TIMBERS

PRODUCT TYPES AND USES

Structural and framing timbers are designed for use during the early stages of a building's design to act as the base and load-bearing structure of the building

Carcassing

Carcassing is normally British or European Whitewood (Spruce). It will be strength graded to C16 for general structural applications in floors, walls and roofs. The higher strength class C24 is intended for longer span or greater load applications.

Other species may also be available for more specialist applications such as European Redwood (Pine), which takes preservative treatment well and so is ideally suited for structural exterior Use Class 4 applications, including Deck joists and substructures.

- Carcassing is mostly supplied machined, which means consistent sizes and reduced splinters for the safety of construction workers. This is also why edges are 'eased'.
- It can be supplied untreated or preservative treated, so make sure you get the Use Class treatment level right for the customer's intended end use. Most Carcassing is only suppled treated to Use Class 2 – suitable only for applications within the building envelope. You can find more about timber treatments on page 46.
- Common carcassing nominal thickness/width section sizes are 47mm x 50mm, 75mm, 100mm, 150mm, 200mm and 225mm.
- Lengths increase in increments of 0.3 of a metre, from 2.4m up to 4.8m.
- Longer lengths can be supplied on request: ask your Timber Development UK supplier, some of whom specialise in longer lengths.

CLS

The most common form of timber for studding and creating internal partitions is CLS, which is supplied regularised (surfaced) with eased edges.

It is usually made from kiln-dried Whitewood (Spruce) and strength-graded to C16; if the stock you sell is ungraded, then it can only be used for non-load-bearing applications.

- CLS is produced in a very specific set of finished sizes, the most common of which are 38x63 / 38x89 / 38x122 and 38x140
- Lengths available range from 2.4m to 4.8m

Scant

Scant, which is more common in the north west of England, is slightly larger in finished sizes than CLS. The timber is surfaced (regularised) and corners are square not rounded.

- Scant is usually made from kiln-dried whitewood (Spruce) and strength-graded to C16; but if it is ungraded, then you can only sell it for use in non-load-bearing applications.
- The most common size for scant is 42x69mm
- Lengths available range from 2.4 to 4.8m, usually in 0.6m increments.

Carcassing developments

Strength-graded finger-jointed carcassing makes it easier to achieve longer lengths.

Finger-jointing is an accepted practice in the joinery sector, resulting in stronger products with less defects. This technology is not yet in wide circulation, but is available from some TDUK members.

Glulam Beams

Glulam beams are available in a range of stock sizes, but can also be produced to order. Many are made from softwood, but an increasing range of hardwood beams are available. Softwood glulam is commonly available in lengths of up to 12m, but bespoke manufactured sizes are available.

Carcassing and Glulam Beams: the difference

Carcassing is made from a single piece of sawn timber, while glulam comprises many layers (or lamellas) of timber glued together under pressure, enabling greater spans. Glulam beams can be used in place of a steel support.

Engineered wood products

Other examples of wood products that are used in structural settings include I Beams, Metal Web Joists, Structural LVL, KVH Parallel Strand Lumber and CLT.

Many of these timber products have been engineered to remove natural weaknesses and enhance natural strengths, providing stronger, longer, wider and more stable solutions.

You can read more about these and many other products at www.timberdevelopment.uk

WHAT TO ASK CUSTOMERS

Choosing the right timber product depends on where and how it will be used. Here are some key questions to ask your customers

Where will it be used?

- Indoors in a totally dry environment?
- Indoors in a humid environment (eg, kitchen, bathroom, indoor swimming pool)?
- Outside (if so, will it be exposed to the weather)?
- On-site to make a frame for site hoarding?
- Is a preservative treatment needed?
- Are there any other special conditions, e.g, could it be left open to the elements if the building site needs to close temporarily? Is the site close to the salty sea air?

These questions help establish which type and strength grade of product you should recommend to your customer.

How will it be used?

- To support a structure (in a wall or a roof): does it need to bear a load?
- As a beam to span a certain width?
- As studding, to create walls or partitions inside a building?
- On a roof to hold tiles?
- To create internal cupboards or to box in pipes?
- To support timber decking or to hold back soil?
- As a decorative feature, e.g, a false beam?
- Carcassing is used within the building envelope, so should always be supplied kiln dried below 20%. Check if lower or higher moisture contents are necessary.
- Is a particular life-span required?

Is a particular strength grade required?

Timber for structural purposes is graded either visually by a qualified grader, or by machine.

- Softwood strength grades range from C14 to C40, but merchant grades are usually C16 or C24. TR26 is mainly for trussed rafters.
- Hardwood strength grades range from D30 to D70. Generally, the higher the number, the higher the grade.

Is sustainability certification needed?

- Has FSC- or PEFC-certified timber been requested?
- Is FLEGT-licensed plywood needed?

Note: FLEGT-licensed products are not yet widely available in Britain.

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ALWAYS ASK THE RIGHT QUESTIONS

Are any add-on products required?

Any customer buying structural timber materials will certainly need additional products to complete their project.

Always check if they have everything else they need, such as:

- Fixings (ironmongery or adhesives)
- Cutting and measuring tools
- Masks, gloves or PPE
- Coatings (coloured or clear)
- Sealants (e.g, for cut ends of treated timber)

What are the delivery conditions?

Is there parking and easy site access for off-loading?

Is a fork-lift available for off-loading?

Are there any restrictions on delivery times?

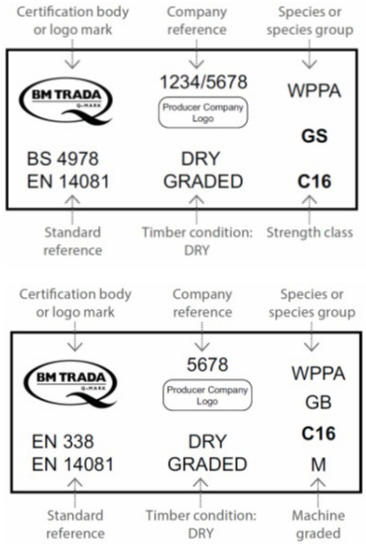
Any other site-specific requirements? (e.g, if delivering to a major contractor, is FORS accreditation required?)

Where will the products be stored on site when not in use? Some products deteriorate if moisture is present.

UNDERSTAND STRENGTH GRADING

All structural timber sold in the UK is graded for strength, either by machine or by a qualified strength grader

Check you're selling the right strength graded material



All structural timber is strength graded to BS EN 14081 — the UK Designated (EU Harmonised) standard. This means all structural timber must be UKCA or CE marked, including its strength class, to confirm it is in compliance with this standard. The higher the number, the higher the strength Class.

Softwoods

- Whitewood and Redwood (Spruce & Pine) merchant grades are normally C16 and C24. Softwood strength classes can range from C16 to C30 by special order.
- Timber marked as TR26 is mostly used to manufacture roof trusses.
- Other graded softwoods include Douglas Fir (C14-C24), Larch (C16-C24) and Western Red Cedar (C14-18).

Machine grading marks

Machine-graded softwoods are graded to BS EN 14081 – part 2. The letter M indicates the timber has been machine graded directly to the marked strength class.

Visual grading marks

Visually strength-graded softwoods are graded to BS EN 4978.

- GS indicates suitability for General Structural purposes
- SS indicates suitability for Special Structural purposes.
- For most species GS is strength Class C16 and SS is C24.

Hardwoods

Hardwoods are visually-graded to BS EN 5756 for temperate species and BS EN 16737 for tropical species with strength grades:

- THA and THB: for Heavy

Structural Temperate Hardwoods in large-sections >100mm thick.
- TH1 and TH2 for General Structural Temperate Hardwoods in small sections <100mm thick.
- STH for Structural Tropical Hardwoods.

Once graded and marked as above, species are allocated to Hardwood Strength Classes between D30-D70 based on the assignments in BS EN 1912.

Glulam beams

Glulam beams are manufactured to EN 14080 the UK Designated (EU Harmonised) standard.
- This standard defines four strength classes GL24/GL28/GL32/GL36. The higher the number, the greater the strength class.
- Glulam beams provide a high-strength, low-carbon alternative to steel RSJs.
- Always ask to see the architect's specification and seek advice from your TDUK member supplier.

Moisture content

- KD indicates Kiln-Dried timber. Most structural (load-bearing) timbers are kiln-dried to ensure quality and fitness for purpose.
- Carcassing, CLS and Scant are all intended for use within the building envelope and are dried to an average moisture content of 20%, typically between 16-18%.
- KD Carcassing, Scant and CLS should be stored preferably undercover in a timber shed, or at least under a protective pack wrapper to allow air circulation, in order to maintain its quality.

Timber species codes

The majority of carcassing, scant and CLS sold in the UK is Whitewood (Spruce). The four-letter codes used in product marking can help you identify and check the tree species used, as follows:
- **WPCS:** covers British-grown Whitewood species (largely Sitka Spruce)
- **WPCA:** covers European-grown Whitewood species (Spruce and Fir)
- **PNSY:** Redwood (Scots Pine) – European or British-grown
- **WPNN:** British-grown Redwood (covers both Scots and Corsican Pine species)
- **WPPA:** Indicates a mix of Spruce, Pine and Fir is used in production. This marking more commonly found on roofing/tiling battens.

CHECK THE DOP, UKCA AND CE MARK

Why are DoPs, CE & UKCA Marks important?

A CE/UKCA Mark is a summary of the product's Declaration of Performance (DoP). It is your way to check that the product you are selling is fit for purpose.

The DoP shows deep detail on the product manufacturer, their factory control processes, the standards to which products conform, product details, timber species, grade-related information, and Reaction to Fire properties.

The DoP gives you, the merchant, as much information as possible to help you recommend a safe, correct and fit-for-purpose product to your customers.

That in turn means you're doing your best to protect the reputation of your business, and doing your best for your customer.

What should a CE Mark or UKCA show?

A CE or UKCA mark is a summary of the full DoP. It may show a number of the following details:

- Manufacturer
- DoP reference number
- Factory Production Control certificate number
- Harmonised Standard number (e.g, BS EN 14081)
- Timber species
- Strength Class (e.g, C16 or C24 on carcassing)
- Whether machine-graded, indicated by the letter M
- Confirmation it has been Dry Graded (DG)

CE marks are being replaced in Great Britain by a UK Conformity Assessed (UKCA) mark. Such marks are valid now and will eventually replace CE marks completely, but the final end date for this has not yet been confirmed.

Where can I find a product's DoP or CE Mark?

Ask your timber supplier for a copy of the manufacturer's DoP.

You can also find a product's DoP on the manufacturers' website, and possibly on your supplier's website, even if they are not the original manufacturer.

A CE/UKCA Mark – the summary of the full DoP – should be marked in certain places on each piece of timber, such as on the pack covering and delivery documentation.

Flame-retardant treatments

FR-BUILD Carcassing

The Structural Timber Association (www.structuraltimber.co.uk) and the Wood Protection Association (www.thewpa.org.uk) have developed a standard for a factory-applied, quality-controlled application of flame-retardant treatment to carcassing, called FR-BUILD.

FR-BUILD accredited carcassing is a requirement on all Structural Timber Association member building sites. Currently, FR-BUILD scheme carcassing is only available through timber-frame housing producers.

FR Build FR treatments are specifically intended to protect timber framing during the construction phase and are not designed to provide protection throughout the life of the building. At the time of writing, UK legislation does not require structural framing timbers including Carcassing, Scant or CLS to be treated with flame-retardant treatments.

The FR BUILD scheme described above is a voluntarily initiative by our sector to maintain site safety during construction.

Structural Framing timbers are classified as Euroclass D as standard. This can be upgraded to Class C or B with an appropriate factory-applied, quality-assured flame retardant treatment. If your customer requests structural framing to be flame-retardant treated, contact your TDUK supplier for advice.

Timber Development UK and the Wood Protection Association strongly advise merchants not to recommend brush-applied flame-retardant coatings on structural timbers.

This is because the effectiveness of brush-applied coatings depends on the depth of the applied coating, and whether they are applied correctly by the person undertaking the job on site.

More information on timber treatments can be found on page 46.

Reaction to Fire classifications

Reaction to Fire classifications of building materials including Structural framing timbers can be found in a product's Declaration of Performance (DoP). Most wood products are classified as Euroclass D without the need for further testing.

Checking the product's DoP should be part of your due diligence before advising customers or accepting a sale. Always make sure you are selling a fit-for-purpose product.

TDUK, in partnership with the Wood Protection Association, has produced a set of information leaflets to help with all of the above. visit the learning resources section on timberdevelopment.uk and search for Fire.

DUE DILIGENCE AND CERTIFICATION

Check the markings on the timber you stock

Each piece of strength-graded structural (load-bearing) timber will carry a mark describing the strength grade, standard number, and other factors.

Checking the product's DoP should be part of your due diligence before advising customers or accepting a sale. Always make sure you are selling a fit-for-purpose product.

FREE help on Due Diligence

Buying from a TDUK member will give you the confidence to know that all the necessary due diligence has been undertaken before the goods arrive in your yard, ensuring you only receive fully legal and sustainable timber.

If you need further peace of mind, TDUK has a FREE toolkit available to merchants who want to make sure they are not buying timber from controversial sources.

An interactive PDF, the toolkit takes you through the steps you need to take to ensure you are buying legally-harvested, sustainably-grown timber from around the world.

Sourcing structural hardwoods may need additional due diligence, especially with tropical hardwoods, which are often used for heavy structural work. Buying from a TDUK member relieves this burden and gives you the confidence to know the structural framing you have purchased has been subject to full due diligence by your TDUK supplier.

You can download the toolkit at timberdevelopment.uk/resources/learn-the-essentials-of-due-diligence/

Sustainable sourcing certification

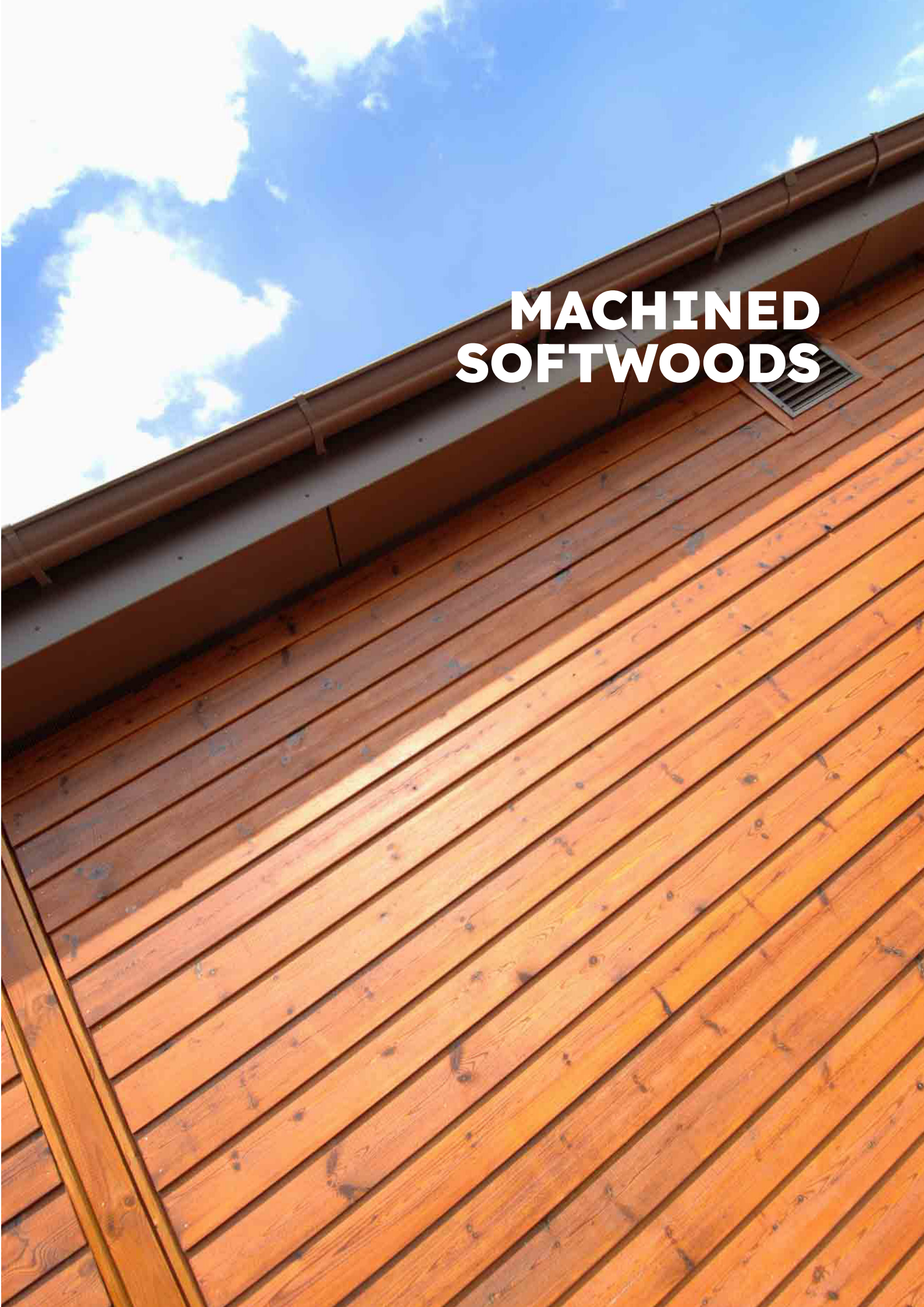
You may find details of your timber's sustainable sourcing certification on the timber itself, on the pack's identifier sticker (at the end of the pack wrapper), on your supplier's invoices, and/or on the delivery documentation.

Three main certification schemes cover structural timbers, and you can visit their websites to check that your supplier's Chain of Custody certificate number is valid:

- PEFC™: Programme for the Endorsement of Forest Certification – www.pefc.org
- Forest Stewardship Council (FSC) – fsc.org
- Grown in Britain – www.growninbritain.org

TDUK supplier members are committed to submitting their due diligence actions to random independent audit and thus represent 'Timber you can Trust'.

You can also check your TDUK supplier's adherence to the Responsible Purchasing Policy online at timberdevelopment.uk



MACHINED SOFTWOODS

PRODUCT TYPES AND USES

There are many different types of machined softwoods available on the UK market. Here is an overview of some of their different uses and specifications

PSE/PAR

- PSE stands for Planed Square Edge
- PAR stands for Planed All Around
- Both terms are widely used to refer to simple planed sections of timber.

The majority of PSE and PAR timbers are softwood, and usually Redwood (Pine), though there are Whitewood (Spruce) sections available. Other species increasingly being used for machined softwoods include Cedar, while hardwood PSEs/PAR are also becoming more readily available (see page 14).

Redwood sections range from 13-75mm in depth and 38mm-225mm in width, while Whitewood sections range from 22-38mm in depth and 50-275mm in width, nominal size.

PSE and PAR timbers are the most versatile wood products sold by merchants with so many possible uses. Wider sections are used for shelving with the right support, while smaller sections are for light-duty framing. Wide Whitewood sections are used for stairs.

Door linings and casings

Door casings & linings are similar products. Casings differ slightly as the door stop (to stop the door swinging to and fro) is built-in.

- Ask the customer the width of the door opening to determine the best product. Some door linings have two sets of rebates in the top for fitting the most popular door sizes.
- For hanging fire doors, customers will need a door casing/lining that has been certified as being suitable for fire doors.

For up-to-date information on fire doors, visit the Fire Door Alliance website at firedoors.bwf.org.uk

Skirtings and architraves

Most skirting and architraves consist of Redwood (Pine) or hardwoods. The tighter the growth rings on the edge, the better the quality.

Some suppliers can now supply pre-primed Redwood skirtings, or can offer products with extra quality factors. Single-sided and double-sided skirtings are available, though the majority are still single-sided.

Skirting and architraves can be fixed with secret nailing or glued in position for a smooth finish (or both).

Length specs range from 2.4-5.4m; though architrave is often available in longer lengths of 4.2m and above. Nominal skirting sizes range from 19x75mm to 25x225mm, while nominal architrave sizes range from 19x50mm to 25x75mm.

Claddings/matchings

Cladding for internal use needs no timber preservative treatment, but cladding for external use (which is exposed to the weather) needs a treatment for Use Class 3 applications: external use above ground.

Most claddings use Redwood (Pine) in lengths starting at 3.6m and upwards (in increments of 0.3m). Redwood cladding offers nominal depths ranging from 12-25mm, and nominal widths from 100-150mm.

Products such as Shiplap and Loglap are suitable for garden sheds and buildings, if treated for Use Class 3 applications. Tongue & Groove (T&G) and Beaded T&G in thinner depths such as 13mm are more suited to interior cladding and wainscotting.

Whitewood T&G products are generally used for flooring, not cladding, and are available up to 25mm thick.

Small section decorative and window mouldings

Small or decorative mouldings include handrails, picture rails, dado rails, panel moulds, and mouldings to cover gaps between skirtings and walls, for example, such as Quadrants and Scotias.

Window mouldings include glazing beads, staff beads, parting beads, and mouldings for repairing sash windows such as sash styles, sash bars and meeting rails.

- Customers may need this material cut to length as many suppliers provide standard 2.4m lengths
- The timber material used in their manufacture is normally high-quality Redwood (Pine). As a general rule, the tighter the growth rings visible on the end of the piece, the higher quality the timber.

Windowboard, cills, weatherbar

Windowboard is designed to be used for interior window cills that are not exposed to the weather. They can be Redwood (European Pine), or other

softwood species such as Southern Yellow Pine from the USA, MDF, or hardwood. Window cill sections are made from materials more suitable for exterior use, but will still need a coating to withstand the vagaries of the British weather.

Exterior cill sections feature a groove underneath to help disperse rain, sometimes referred to as a transom drip. The material used for window cills is usually Redwood (European Pine), though hardwood cill sections are available made from species such as sustainable Meranti.

Weatherbar, also called stormboard or weathermould, is used on the bottom of exterior doors, to stop rain ingress, and features a groove underneath. Softwood and hardwood weatherbars are available.

Tongue & Groove, PTGV, PMV

Tongue & Groove (T&G) has multiple uses, from interior and exterior cladding (if treated with suitable preservative), to interior flooring. It is often found as flooring in older houses, on landings and in bedrooms or areas of lighter footfall.

- PTGV/PMV is planed T&G that is V-jointed, which refers to the shape formed by the joint between boards when put together.
- T&G and PTGV/PMV sections are often thicker than other matchings (claddings) as they are primarily used for flooring.

The majority of T&G/PTGV/PMV products are high-quality Redwood, but some thicker flooring material may be made from Whitewood.

Nominal T&G/PTGV/PMV section sizes in Redwood range from 13-25mm deep, and 100-150mm in width across the piece. Nominal T&G/PTGV/PMV section sizes in Whitewood are normally 22x100mm, 22x125mm or 25x150mm.

Fascia boards, soffits & bargeboards

Fascia boards enclose the space between the first row of roof tiles and the wall. Soffits are fixed beneath fascias, connecting the overhanging fascia to the wall, while bargeboards are used to enclose the space below tiles at the gable ends of a roof.

Most wood fascia boards, bargeboards and soffits are made from European Redwood. Plywood is not recommended for soffits. Alternatives include Hardwoods, heat-modified ThermoWood® softwood; Canadian Western Red Cedar; Siberian Larch and other large-section softwood species; also specialist external products such as Tricoya Extreme exterior MDF. European Redwood fascia boards come with a groove at the back for fitting, and in sizes ranging from 25x175mm to 25x225mm

- European Redwood or Whitewood fascia boards, barge-boards and soffits should receive a Use Class 3 level timber preservative treatment above ground level
- Fascia boards must be sufficiently strong to withstand the weight of the tiles directly above.

Sawn joinery timbers

Where customers are looking to produce PAR and Machined sections on site or in their own joinery shop, merchants can help with a range of sawn Joinery timbers. These will be high-quality European Redwood and European Whitewood, graded to have fewer natural defects such as knots, since local joinery shops have higher demands on quality.

Other species of 'clear' softwoods (with minimal natural defects) include American Southern Yellow Pine, New Zealand Pine, Douglas Fir, Canadian Western Red Cedar, and Larch.

Modified softwoods with zero defects are also favoured by joiners: products available include Accoya, Kebony and Brimstone.

Joinery sections are often wider/thicker than other planed timbers to enable joiners to convert them into other products.

- Redwood joinery section sizes range from 19x100mm to 100x225mm
- Whitewood joinery section sizes range from 19x100mm to 38x275mm
- American Southern Yellow Pine common section sizes range from 25x150mm to 50x300mm.

Appearance grading

Machined softwoods for non-structural (not load-bearing) applications are graded for appearance only, under BS EN 1611-1:2000 Sawn timber: Appearance grading of Softwoods. This standard covers European Spruces, Firs, Pines and Douglas Fir. Appearance grading takes place at sawmills during production.

Structural (load-bearing) softwoods must be strength-graded. Most Nordic and Baltic suppliers sell Whitewood (European Spruce) and Redwood (European Pine) products based on their own quality criteria, giving them names such as 'Premium' or 'Trade', which are not always comparable. If in doubt, always ask to see samples from your supplier.

Swedish Wood has published detailed guidance on timber's allowable natural features under BS EN 1611-1:2000, online at www.svensktra.se/siteassets/5-publikationer/pdfer/grading-of-sawn-timber.pdf

For customers there is a balance between the desired finish and what they want to pay. The size, type and position of features such as knots may be important if the wood will be visible in their project, or if it comes at a critical point like the edge of a shelf.

Recommend that your customers leave the timber in the room it's intended for to acclimatise to the humidity levels for a couple of days before use. This is critical for T&G and PTGV/PMV being used as flooring or internal cladding. Knot sealant, also called knotting solution, can be used for sealing knots and any resin pockets in wood before priming and painting.

UPSELLING AND CROSS-SELLING

Customers who come to your branch in search of machined softwoods are likely to need additional products. Ask the following questions to increase your sales

Other wood products

Does your customer need:

- Battening (non-load-bearing)?
- CLS/Scant, if creating internal partitions?
- Sheet materials (e.g, OSB for partitions or Chipboard for loft flooring)?
- Insulation if creating internal partitions (e.g, wood fibre insulation)
- Timber doors, flooring or windows
- MDF for creating cupboards and features
- Small mouldings for picture frames.

Protective equipment

Does your customer need:

- Masks? (Dust-filtering masks are an essential piece of kit)
- Dust extraction equipment?
- Gloves?
- Goggles?
- Safety footwear?
- Ear-protection equipment?
- Any other PPE to ensure their safety while on site?

Ironmongery, fixings and adhesives

Does your customer need:

- Screws, nails, rawlplugs, brackets for shelving, or tools for marking out?
- Handles or doorknobs?
- Hinges, locks and ironmongery?
- PVA wood or speciality glues?
- Wood or wall filler?

Paints, stains and sealants

Do they need:

- Paints, paint-mixing or stains?
- Knotting solution/ sealant?
- Primer?
- Exterior treatments or coatings?

Tools and equipment

Does your customer need:

- Measuring: angles, spirit levels, retractable measures or a steel rule?
- Cutting: hand saws; sawing blocks, mitre blocks or chop saws?
- Manual or electric drills, drill bits and accessories?
- Sanding: sandpaper, mouse sander (for small and awkward areas); or a flooring sander (as a hire opportunity)?
- Painting: brushes, brush cleaner, roller and tray, or spray painting equipment (this could be a hire opportunity)?

Trading up

Developments in softwoods may give you an opportunity to trade up.

- Finger-jointed carcassing is an alternative to standard products
- Modified woods last longer than standard softwoods: investigate the customer's required service life for the timber before recommending a product, and remember timber treatments may be needed.
- Alternative softwood species are often specified by architects. Examples include Douglas Fir and Western Red Cedar.

MAKE THE MOST OF YOUR OPPORTUNITIES

Preservative treatment of timber products extends service life and adds value to sales. It's a simple way to enhance sales value and profit on the same volume of wood.

WHAT TO ASK CUSTOMERS

Choosing the right product depends on where and how it will be used. Here are some key questions to ask before you offer any advice

Where will it be used?

- Indoors in a totally dry environment?
- Indoors in a humid environment (e.g, kitchen or bathroom)?
- To frame a doorway indoors?
- On or around a window?
- On stairs (e.g, treads, risers, handrails, newels, etc)?
- Is a preservative treatment needed?
- Outside and exposed to the weather (e.g, cladding, fascia/soffits)?
- In a garden (e.g, as decking or fencing)

These questions help establish which type and strength grade of product you should recommend.

How will it be used?

- Does it need to bear a structural load? (See page 31 for information on structural and framing timbers).
- Will it frame internal walls/partitions?
- To create internal cupboards or box in pipes?
- As fascias or soffits?
- For decoration (e.g, skirting/architraves)?
- As wood flooring?
- As external cladding, internal cladding or wainscot?
- To repair or replace a window cill, window or sash box?
- For high-quality joinery work?
- Is any additional milling or cross-cutting required (e.g, matching a skirting pattern)?

Is a particular strength grade required?

Some machined softwoods for non-structural applications are graded for appearance, while structural (load-bearing) softwoods must be strength-graded. You can find out more on page 41.

Is sustainability certification needed?

- Has FSC-certified timber been requested?
- Has PEFC-certified timber been requested?
- Do they need Grown in Britain timber?

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ALWAYS ASK THE RIGHT QUESTIONS

Are any add-on products required?

Any customer buying machined softwoods will certainly need additional products to complete their project. Always check if they have everything else they need, such as:

- Mitre block for corners
- Fixings (ironmongery or adhesives)
- Cutting tools
- Sanding tools and sandpaper
- Masks, gloves or PPE
- Coatings (paints or stains)
- Sealants (e.g, knot sealant/ solution).

What are the delivery conditions?

Is there parking and easy site access for off-loading?

Is a fork-lift available for off-loading?

Are there any restrictions on delivery times?

Any other site-specific requirements? (e.g, if delivering to a major contractor, is FORS accreditation required?)

Where will the products be stored on site when not in use? Some products deteriorate if moisture is present.

SERVICING LOCAL JOINERS

Timber used for joinery production is a significant market for builders' and timber merchants, worth around £3.8 billion to the UK economy every year.

There are over 700 member firms in the British Woodworking Federation (BWF), the UK trade association for the woodworking and joinery manufacturing industry.

Joiners need timber with as few natural features (e.g, knots) or defects as possible. Every stock of timber that needs remedial action to make it usable for joinery costs time and money. Joiners may need wider or thicker products than standard machined softwoods, e.g, wide Whitewood sections to create staircases.

Laminated and finger-jointed products reduce waste and are generally welcomed by the joinery sector. Joiners work on short timetables and need reliable material deliveries, in full and on time.

Joiners also need a local merchant who understands how their business works and what they need. Take the time to develop close relationships with your joinery customers to ensure the best business results on both sides.

Speciality products

If your customer base includes a large number of joiners, you may want to consider stocking a wider range of timber species and dimensions, especially if they often undertake bespoke or heritage work in your local area. Sustainability certification is part of many joiners' marketing to their customers, so be sure to offer FSC®, PEFC™ and/or FLEGT products.

Work with your TDUK members to create an attractive stock offering for joinery firms. Consider stocking:

- Green split and centre-free material for turning
- Clear' softwoods: examples include Douglas Fir for interior joinery; Southern Yellow Pine for staircase production; Larch for general joinery, furniture and cladding; Western Red Cedar for external doors and cladding.
- Modified softwoods such as Accoya®, Kebony® and ThermoWood®, which offer an extended life-span
- Laminated sections: laminated softwoods are a staple of the window production sector as they reduce waste and speed up production, with their lack of natural features or defects.

Know the joinery sector

- Subscribe to joinery magazines like Woodworking News or Furniture & Joinery Production
- Download copies of TDUK's free Supplying Timber magazine timberdevelopment.uk/magazine/supplying-timber
- Find your local members of the British Woodworking Federation www.bwf.org.uk
- Learn about the National Association of Shopfitters www.shopfitters.org

DUE DILIGENCE AND CERTIFICATION

Understanding FSC and PEFC certification and how they apply to the joinery products you stock can help ensure you provide your customers with the right materials

The majority of European-produced softwoods are available with either FSC® or PEFC™ certification.

You may find details of your timber's sustainable sourcing certification on the timber itself, on the pack's identifier sticker (at the end of the pack wrapper), on your supplier's invoices, and/or on the delivery documentation. Alternatively, ask your supplier for a copy of their Chain of Custody certificate. If they can't provide one, consider choosing a different supplier.

You can check the validity of all certificates using the chain of custody number at the following locations:

- **FSC Portal:** connect.fsc.org/fsc-public-certificate-search
- **PEFC Portal:** pefc.org/findcertified

Your Due Diligence Responsibility

The UK Timber Regulation (UKTR) replaced the EUTR on 1 January 2021.

For any timber that you import from outside of the UK you will need to develop your own Due Diligence process, which clearly identify your timber as being of 'Negligible Risk' in terms of illegal harvesting.

However, if you buy from a TDUK member you are relieved of this burden because they will already have undertaken all the necessary due diligence to comply with the UK Timber Regulation.

As a 'trader' under UKTR – you will still need to understand your supply chain and to keep records of who you bought the timber from, and the business to whom you are selling it, in case you ever need to refer to it at a later date.

If you still wish to undertake your own timber importing then for advice on how to develop your own Due Diligence process, download a copy of our FREE Due Diligence Toolkit, which was created for the timber supply chain and timber industries by TDUK in partnership with the Foreign, Commonwealth & Development Office.

This can be found online at timberdevelopment.uk/resources/learn-the-essentials-of-due-diligence/

If your customer asks for certified timber

The onus is on you to prove the legality of the supplies of timber you are selling to customers. Key questions to ask to ensure this are:

- Am I dealing with a TDUK member? If so, I can be confident all goods are legal.
- If not, where has it come from and how do I prove it?
- How can I prove that the timber has not been illegally harvested?
- Are any FSC/PEFC certification claims genuine? You can check at the links on this page.

PRESERVATIVE TIMBER TREATMENTS

Depending on the application, your customers may need to use treated timber to ensure the product is suitable for the intended end use. Do you know your Use Classes?

Specific levels of preservative treatment are needed for timbers in different situations, to make sure the timber is suitable for its intended end use. You may have heard the term 'Use Class' in relation to your timber stocks, but do you have a thorough understanding of what it means?

It is not considered appropriate for timber to be referred to as 'green treated' or 'brown treated' anymore, even though you may have heard these terms.

Most treated stock held by merchants will only be suitable for Use Class 2. Ensure you also hold stocks of Use Class 4 treated Fence Posts, Sleepers and Deck Joists. Ask your customer where the timber they are buying will be used to determine the type of treatment needed.

- **Use Class 2 treated:** for Structural framing timbers including Carcassing, CLS and Scant used within the building envelope when treatment is required and when they are used above the ground or damp-proof course, in covered situations: tiling battens, internal construction timbers such as framing timbers, roof timbers, internal joists, and sole plates
- **Use Class 3 treated:** for timbers used above the ground outside. Applications include deck boards, fence rails and boards, cladding (including battens) and roof finishing timbers such as fascias, barge boards and soffits
- **Use Class 4 treated:** applications include any timbers in ground contact or used externally in safety critical situations. These include timber that is in contact with or buried into the ground providing external structure support, such as fence posts or decking joists.

External timber in ground contact

Timber that is in contact with, or buried into, the ground, (e.g, fence posts or decking joists) MUST have been treated by a timber preservative treatment designed for Use Class 4 applications.

Always check with your supplier that any softwood sleepers, all decking substructure components and fence posts you stock have received Use Class 4 treatment: and ask for written confirmation.

For more information, you can download a copy of the Use Class timber treatments poster from the TDUK Merchants resources web page on timberdevelopment.uk/resources/understanding-use-class-2-uc2/

Ask your supplier

- What is the lead time on the specific preservative treatment required?
- Ask your TDUK member supplier to confirm on their order, invoice and delivery documentation that the timber has received the required level of timber treatment for the intended end use application/Use Class.

INTERIOR	EXTERIOR	
Use Class 2	**Use Class 3(u)**	**Use Class 4**
Above the ground or DPC, covered	**Above the ground** *(uncoated)*	**Ground or fresh water contact** *(and exterior structural support)*
Internal construction timbers within the building envelope: **Tiling battens, framing and roof timbers, internal joists, sole plates.** 2	External construction timbers: **Deck boards, fence rails and boards, cladding** (including battens) **and fascias.** 3	External construction timbers: **Fencing, fence posts, agricultural timbers, retaining walls, playground equipment, decking posts, joists and sub-structures.** 4

WPA Wood Protection Association

MDF MOULDINGS

PRODUCT TYPES AND USES

MDF mouldings are products where a particular shape has been formed onto the engineered MDF (medium density fibreboard) using a moulder. Common moulding products include skirting, architraves and picture rails

Primed MDF

Product types

There are a wide range of uses for primed MDF. Common products include:

- Skirtings
- Architraves and Architrave Blocks
- Windowboard
- Door linings, door stops and door sets
- Wall panelling kits (interior)
- Selected small mouldings, e.g, dado rails and picture rails
- Selected PSE products, e.g, PSE skirting and architrave.

Understanding primed MDF

Primed MDF products have been given an initial coat of primer to present a paintable surface.

Customers can then sand, undercoat and topcoat on site as desired. Some products are available 'twice primed', giving a greater depth of initial coating and an improved surface for painting.

There are some primed MDF products, such as some window boards, that may not be re-coatable. If in any doubt, always check with your supplier.

Primed MDF can be produced as standard grade, lightweight, or as a moisture-resistant product (note this does not mean it is waterproof).

Advantages

Primed MDF products are a more basic form than other MDF product types, making them particularly suitable for customers working on a budget or who are prepared to take on more of the finishing.

Primed MDF requires less steps for joiners to finish compared to working with softwood, as there is no need to sand and undercoat the timber. Primed MDF is easy to cut and install, and can be glued in place instead of being fixed with ironmongery.

MDF has no natural features, such as knots, making it consistent and reducing wastage compared to some softwoods.

Length specs/dimensions

MDF mouldings are quoted in finished sizes, not nominal sizes. They can be manufactured to custom lengths, but most merchant products are available packaged to a specific length (PTL).

- **Skirtings and architraves:** normally 4.2m, 4.4m or 5.4m lengths (5.4m lengths are often preferred by larger housebuilders)
- **Windowboard:** normally sold in 3m, 3.6m and 5m lengths
- See your suppliers' or manufacturers' catalogues for individual product dimensions, but thicknesses range from 15-18mm for skirtings and architraves to 22-25mm for windowboard.

Wrapped MDF

Wrapped MDF product types

- Skirtings
- Architraves
- Windowboard
- Door linings, door stops and door sets
- Picture frame mouldings.

Understanding wrapped MDF

The MDF is wrapped in a foil coating, which can be finished in various colours with or without a high gloss finish, or with a wood-effect appearance. This is a pre-finished product with no finishing required by the customer, who simply has to cut to size and fix in place. Wrapped MDF can be produced at a standard grade, in a lightweight option, or as a moisture-resistant product (this does not mean it is waterproof).

Advantages

Wrapped MDF needs no finishing, is easy to install and can be glued in place without ironmongery. It is consistent in form and colour, with no natural features, such as knots, as well as being resistant to shrinkage, warping and swelling. Many suppliers offer bespoke options.

Length specs/dimensions

MDF moulding dimensions are quoted in finished sizes. They can be manufactured to custom lengths if required, but most are packaged to a specific length.

- Skirtings & architraves: normally 4.2m, 4.4m or 5.4m lengths (5.4m lengths are often preferred by larger housebuilders)
- Windowboard: these are normally available in 3m, 3.6m and 5m lengths. See manufacturers' catalogues for dimensions, but thicknesses range from 15-18mm for skirtings and architraves, to 22-25mm for windowboard.

Veneered MDF

Veneered MDF product types

- Skirtings
- Architraves
- Windowboard
- Door linings, door stops and sets
- Selected small mouldings, e.g, dado rails and picture rails.

Understanding veneered MDF

The MDF has been faced with a real wood veneer to match interior design trends. Options available include Oak, Walnut, Beech, Maple and Cherry.

It is pre-finished and can be produced in standard grade, lightweight or moisture-resistant options.

Advantages

Wrapped MDF does not require finishing by the customer and is easy to install, as it can be glued in place. The product is consistent in form and colour, with no natural features, such as knots, and is resistant to shrinkage, warping and swelling.

Length specs/dimensions

MDF moulding dimensions are quoted in finished sizes, not nominal sizes. Veneered MDF can be manufactured to custom lengths, but most are packaged to a specific length.

- Skirtings & architraves: normally 4.2m, 4.4m or 5.4m lengths (5.4m lengths are often preferred by larger housebuilders)
- Windowboard: these are normally available in 3m, 3.6m and 5m lengths.
- See manufacturers' catalogues for individual product dimensions, but thicknesses range from 15-18mm for skirtings and architraves, to 22-25mm for windowboard.

Exterior MDF

Product types

- Cladding
- Windowboards
- Window components
- Soffits, fascia and barge boards
- Exterior joinery.

Understanding exterior MDF

Exterior MDF is now available that, when fully sealed, can be used for a variety of outdoor applications such as signs, shop fronts and external woodwork.

Advantages

Although requiring finishing by the customer, exterior MDF is easy to install, cut and fix, and is consistent in form and colour, with no natural features, such as knots.

Length specs/dimensions

Exterior MDF products are quoted in finished sizes, not nominal sizes. They can be manufactured to custom lengths, but merchant products are available packaged to a specific length (PTL).

UPSELLING AND CROSS-SELLING

Customers who come into your branch in search of MDF mouldings are likely to need additional products. Consider asking the following questions to increase your sales

Other wood products

Does your customer need:

- Battening (non-load-bearing) for creating cupboard features?

Ironmongery, fixings and adhesives

Does your customer need:

- Screws, nails, rawlplugs, brackets for shelving, a carpenters' pencil or tools for marking out?
- Handles, door knobs, or cup hooks for cupboards?
- Hinges, locks and ironmongery?
- PVA wood or speciality glues?
- Wood or wall filler?

Protective equipment

Does your customer need:

- Masks? (Dust-filtering masks are an essential piece of kit)
- Dust extraction equipment?
- Gloves?
- Goggles?
- Safety footwear?

Trading up

In MDF, customers may be interested in trading up to more decorative products. Many don't know these are available, so mention them to your customers for a possible upselling opportunity. For example:

- Trading up from a primed product to a wrapped or veneered product
- Ordering a special colour and finish (e.g, high gloss) to match household interiors.

Tools and equipment

Does your customer need:

- Measuring: angles, spirit levels, retractable measures or a steel rule?
- Cutting: hand saws; sawing blocks, mitre blocks or chop saws?
- Manual or electric drills, drill bits and accessories?
- Sanding: sandpaper, mouse sander (for small and awkward areas)?
- Painting: brushes, brush cleaners, rollers and trays?

Paints and coatings

If your customer is buying primed MDF, do they need:

- Paints, paint-mixing or stains?
- Primer.

Special finishes and colours

Certain manufacturers produce MDF mouldings with extra-hard chip-resistant coatings, or offer products with high-gloss finishes. They may also offer either a standard range of RAL colours or bespoke orders, so ask your supplier for details.

Extra-hard coatings are resistant to wear and tear, which makes them particularly suitable for rental properties. Product types where these special finishes may prove useful include:

- Skirting
- Architraves
- Windowboards
- Door linings, door stops and door sets
- Kitchen finishing mouldings.

DUE DILIGENCE AND CERTIFICATION

Understanding FSC and PEFC certification and how they apply to the MDF mouldings you stock can help ensure you provide your customers with the right materials

The majority of UK, Northern Irish and European-produced MDF mouldings are available with either FSC® or PEFC™ certification. To check which applies to the products you sell, ask your supplier for their Chain of Custody certificate. If they can't provide one, find a different supplier.

You can check the validity of that certificate using the chain of custody number at the following locations:

- **FSC Portal:** connect.fsc.org/fsc-public-certificate-search
- **PEFC Portal:** pefc.org/findcertified

Your Due Diligence Responsibility

The UK Timber Regulation (UKTR) replaced the EUTR on 1 January, 2021. For any MDF that you import from outside of the UK you will need to develop your own Due Diligence process, which clearly identifies your timber as being of 'Negligible Risk' in terms of illegal harvesting.

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MDF AND FORMALDEHYDE

All natural wood products contain a small amount of Formaldehyde as part of their natural make-up. In the past, additional Formaldehyde was added to the resins used to bond together wood fibres in products such as OSB, Chipboard/ Particleboard and MDF.

Today, MDF products from reputable manufacturers are now manufactured using 'zero added formaldehyde' in the resin bond.

Formaldehyde emissions from wood products are governed by BS EN ISO 12460-3.2020. This defines formaldehyde emission performance in a series of E numbers: E0 is the best performance achievable; E1 the second best, and so on.

Most modern MDF mouldings are manufactured to E1 or better. Special products are also manufactured for particularly sensitive environments such as hospitals, care homes, schools and nurseries, laboratories and museums, and places where any formaldehyde emissions need to be kept absolutely minimal.

Checking manufacturers' statements

For your own peace of mind, check the statements from manufacturers regarding their products.
You can use the product's Declaration of Performance to find out the Formaldehyde emissions rating (a number after a letter E) and keep a copy for your records and to satisfy any customer enquiries.

MODIFIED WOOD PRODUCTS

Modified woods have been altered using chemical, biological or physical techniques to enhance their performance without the addition of a biocide.

The most common techniques used are thermal or chemical modification. Enhanced dimensional stability is the most common factor leading to improved decay resistance, enhanced appearance and often increased hardness.

These improvements mean the modification process not only physically alters the wood, but also adds value to the product, making them ideal candidates for upselling within merchant outlets.

Modified wood uses

Modified woods are suitable for a range of applications, but are most often used where increased resistance to decay and enhanced appearance are critical factors, such as with Cladding and Decking.

Such products are sold alongside durable Hardwoods or naturally durable and preservative treated softwoods.

All modified woods are individually branded products, so always check the exact performance criteria with individual suppliers as the range of property enhancements is very wide.

Thermally modified

Thermowood products are modified using heat and steam. Category S products achieve dimensional stability and a light brown colour at around 185-190°C, while category D products achieve greater durability and a darker colour by the use of higher temperatures above 210°C.

Other examples of thermally modified wood products include Abodo Vulcan, Durawood, Lunawood and Platowood. The manufacture of thermally modified woods based on UK grown species is increasing with products such Brimstone utilizing Ash, Poplar and Sycamore.

Thermowood products are most suitable for exterior, out of ground contact applications such as claddings, and where a darker throughout colour resembling tropical hardwoods may be of benefit such as interior joinery or flooring.

Chemically modified

Acetylation is the most common chemical-based modification used at the present time, with Accoya now being a well-recognized brand of solid and laminated wood products used throughout the joinery sector.

Tricoya is the panel product variant of Acetylated wood, based on MDF fibre processing techniques. This is available in standard sheet sizes of 1220x2440/3050mm.

DECKING, FENCING AND LANDSCAPING PRODUCTS

PRODUCT TYPES AND USES

Fencing, decking and landscaping is a key market for timber that has seen significant growth in recent years. Make sure you know the best products to stock

Fence panels

Fencing types and dimensions

With climate change producing stronger winds, there are now alternatives available to the more traditional style of fencing. Acoustic fencing that specifically reduces noise from busy roads is also available.

Most fence panels are a standard 1.8m width, but heights may vary depending on the product. Popular fencing types are:

- **Overlap**, sometimes called Lap, where boards overlap each other horizontally forming a closed panel. Heights range from 0.9m to 1.8m
- **Closeboard or feather-edge**, where boards overlap each other vertically, forming a closed panel. Heights range from 0.9m to 1.8m. Featheredge and square edge boards can also be bought separately. Featheredge boards normally range in size from 22x100mm to 38x200mm, with lengths from 1.5m-4.8m; square edge boards range in size from 16x150mm to 22x150mm and in lengths from 1.4m-4.8m. Some closeboard fence panels feature tongue and groove boards.
- **Slatted** or 'hit and miss' boards are mounted alternately on different sides of the supports, so that wind can travel through the gaps, still presenting a visually 'solid' look. Heights range from 0.9-1.8m with depths varying according to their construction, but can be 30mm-45mm thick
- **Ranch-style**: a series of boards or slats mounted horizontally between posts, with larger gaps in between to allow air flow. Sizes vary widely, so always check with your supplier
- **Woven:** fencing boards weaving in front and behind upright supports in a panel to create a woven look
- **Picket**: a series of short, upright, sometimes pointed-top or rounded-top, picket pales mounted along a supporting framework of rails and posts. Picket fences are available in panels or as individual picket pales. Panel heights range from 600mm-1.2m, with average individual picket pale heights from 900mm-1.8m
- **Palisade**: similar in style and size to picket fencing but with the pales or boards abutting each other
- **Paling**: agricultural or landscaping shorter-height posts and rail or wire fencing, with wider gaps in between the horizontal rail timbers, used for demarcation of land and also for fencing in stock animals. These come either as rolls with posts supported on either two or three sets of horizontal wires, or as made panels. Rolls are most common. Heights range from 1.2m-1.5m, with roll lengths from around 2m-9m
- **Trellis panels**: large panels which can be used for screening within a garden or as a see-through barrier. These vary widely in size but can be from 0.45mx1.8m to 1.8mx1.8m

Lead times and availability

Fencing availability is affected by a number of factors, but demand is usually greatest from early spring through to late autumn. For historical industry-related reasons, lead times from ordering have become extended in recent times. Available capacity for timber preservative treatment can also affect lead times, so check with your suppliers before advising customers on availability and delivery.

Is timber treatment required?

Softwood fence panels are normally pressure-impregnated with a Use Class 3 preservative treatment, ensuring consistency and usually offering a 15-year guarantee.

Fence posts and any other timber used in or on the ground needs a Use Class 4 level of treatment in order for it to last. You can find more information at timberdevelopment.uk

Fence posts, rails and gravel boards

Fence and strainer posts

Fence posts can be round or square. Sometimes you will see posts that are incised (with small slits across the surface). This is done to help ensure the wood preservative applied penetrates to the depth necessary to meet the relevant spec.

Strainer posts, similar to fence posts, are intended to support, for example, barbed wire for stock fencing over large spans. All fence posts and strainer posts must have a Use Class 4 level of treatment.

Rails, capping and post caps

Capping and post caps: Capping runs along the top of a fence panel, stopping water from sitting on the wood and channelling it away from the sides of the fence. Capping can be 'trenched' (so it can be pushed down to sit on the fence top), or solid with an angled top for rain run-off. Post caps can be decorative or functional, and come in many different shapes.

Fencing rails: The horizontal supports to which fencing boards are fixed within a fence panel are called rails. There are different shapes but essentially they perform the same function: to strengthen the fence and help rain run-off. Types you may be asked about include:

- **Arris rail:** also known as angle fillet or tilt fillet, is pyramid shape
- **Cant rail:** also known as bevelled rail, is a rectangular section with a sloping cut to one edge
- **Counter rail:** fixed to the top edge of a closeboard fence to keep the boards in place, giving a flat surface for fixing fence capping.

Rails, capping and post caps are out of ground contact, which means they need a Use Class 3 preservative treatment.

Gravel boards

Gravel boards sit at the bottom of fences, keeping the fencing out of contact with the ground, or can be used as simple path or driveway edging. Softwood gravel boards, being in contact with the ground, must have a Use Class 4 preservative timber treatment.

Availability and dimensions

Fence posts, along with other fencing materials, may be subject to longer than expected lead times, especially in the peak sales season, so always check with your supplier before quoting delivery times.

- **Fence Posts and strainer posts:** Square – Generally 75x75mm to 100x100mm and in lengths from 1.5m to 3m. Round – diameter varies from 75mm to 180mm; lengths from 1.8m-3m. These products must always be Use Class 4 preservative treated.
- **Capping & Post Caps:** Readily available capping sizes are 32x63mm and 38x63mm. Post Cap sizes vary widely and may depend on shape. Check with your supplier on finished sizes.
- **Fencing Rails:** Arris rail (angle fillet or tilt fillet) are generally sized at 75x75mm but can be 91x91mm. Lengths are generally 2.4m-3.6m
- **Cant rail:** Generally 47x125mm but can be bigger at 47x175mm. Lengths are generally from 2.4m to 3.6m.
- **Counter rail:** sizes range from 22x50mm to 32x60mm on average, while lengths vary from 2.4m to 3.6m
- **Gravel Boards:** Generally available in one size of 22x150mm, with lengths from 1.8m-3m. Larger sizes may be available to order. Gravel boards are in contact with the ground and need a Use Class 4 level of timber treatment.
- **Don't forget:** Rails, capping and post caps are out of ground contact, which means they need a Use Class 3 preservative treatment.

Lead times

Lead times on fencing can be extensive so stock requirements should be planned ahead. Lead times on timber treatments increase at peak periods, e.g, spring to late summer. Check with your suppliers before advising on availability and delivery.

Decking boards

Deck board types

There are many different deck boards available, including enhanced grain or 'brushed' wood looks. Be aware that some types of decking require more joists, spaced closer together. All decks must be designed to withstand the intended loads.

- **Softwoods:** Quality Redwood (Pine) deck boards are still the mainstay of the market, alongside more economical Whitewood (Spruce). Other softwoods used for decking include Douglas Fir, Western Red Cedar and British-grown or Siberian Larch. The default desired service life of standard softwood deck boards is 15 years
- **Hardwoods:** Species used for deck boards include: Balau (Yellow Balau), Cumaru, Ipe, Iroko, and Massaranduba. Hardwood deck boards are more dense and heavy than standard softwood and requires extra support. It also requires joists that will wear at the same rate as the boards: softwood joists must be a minimum of Use Class 4 preservative treated to ensure they do not fail before the hardwood deck boards do
- **Composites:** Wood plastic composites (WPC) are made by combining plastics with wood fibre. As plastics in construction are an issue, make sure the composite product you purchase can be recycled. Composite decking can be heavier than standard softwood and may require the supports to be spaced closer together
- **Modified woods:** Thermowood®, Kebony® and Accoya® modified woods are all available as, or can be produced as, decking, and offer a longer lifespan than softwood.
- **Slip-resistant (anti-slip):** This comes in many forms using softwood, hardwood or modified wood deck with aggregate or specialist inserts; and composite products. These products should have independent testing to ensure it achieves a PTV value of 36+ in a pendulum test. This is an ex-factory result and should be retested over time to ensure the slip resistance is maintained above 36 unless the supplier provides test evidence or a warranty to support sustainable slip performance.

Availability

Decking, especially standard softwood deck boards and Use Class 4 Deck Joists, can be in short supply at certain times of year. Talk to your supplier about decking each autumn to ensure you have sufficient stock in place.

Dimensions

- **Softwoods:**
  - **Pine and Spruce**: from 32x125mm nominal (27x120mm finished) to 38x150mm nominal (32x145mm).
  - **Douglas Fir**: from approx. 25x145mm to 35x190mm
  - **Siberian Larch**: from approx. 21x95mm to 28x145mm
  - **Western Red Cedar**: approx. 25x140mm
- **Hardwoods: (sizes vary with tree species and log size).** Examples include:
  - **Balau (Yellow or Red):** from approx. 19x90mm to 28x145mm
  - **Cumaru***: from approx. 19x140mm to 28x145mm
  - **Ipe***: from approx. 19x140mm to 28x145mm (*see page 15)
  - **Iroko**: from approx. 20x90mm to 20x145mm
  - **Massaranduba**: approx. 21x145mm
  - **Composites:** WPC decking is an extruded product and technically can be made to any size. Consult suppliers' catalogues.
- **Modified Woods**:
  - **Thermowood® Softwood version:** 26x118mm finished;
  - Hardwood (Ash) version: from approx. 20x95mm to 21x150mm
  - Kebony® 22x145mm
  - Accoya® approx. 20x145mm or slip resist version: 22x142mm.
- **Slip-resistant:** softwood sizes range from approx. 27x120mm finished size to 34x145mm finished size, while hardwoods are approx. 22x142mm.

Lead times

Lead times on decking can be extensive, especially in the peak selling summer period. Check with your supplier before advising customers on delivery dates. The available capacity for timber preservative treatment can also affect lead times.

Is timber treatment required?

Softwood deck boards require pressure-impregnation with a Use Class 3 preservative treatment, which usually has a 15-year service life, but longer service lives are available from some suppliers. Durable hardwood deck boards can be oiled annually but need no preservative. Composite decking and modified wood decking needs no preservative.

Garden sleepers

Sleeper types

There are many different decking types available, including colour-washed boards and enhanced grain or 'brushed' wood looks. Be aware that some types of decking require more joists, spaced closer together.

Species

- **Softwoods:** softwood sleepers are available in Spruce, Pine, Douglas Fir and Larch. The term 'mixed softwood' on a label indicates that the material could be one of these species: check with your supplier as to which material is being supplied. All these softwood species will require a Use Class 4 preservative treatment.
- **Hardwoods:** hardwood sleepers tend to be Oak, but other suitably durable British species may be available from regional sawmillers around the UK. Some tropical hardwood species are sufficiently durable for ground contact use – see our Hardwoods table on page 20 to discover relevant species. Avoid non-durable Hardwood species such as Beech as they will rapidly decay unless treated with a Use Class 4 preservative treatment.
- **Modified wood:** Large sections of modified woods such as Accoya could be adapted for use as sleepers, but are not yet widely available in purpose-manufactured form.

Textures

Softwood sleepers come as rough sawn, smooth with eased (rounded) edges or, from some suppliers, with a charred and 'brushed' look. Some species of timber, especially Spruce, are incised to ensure they can meet the penetration required to meet the end use and service life specification. Incised timber has small slits over the sawn surfaces.

Availability

Softwood Spruce sleepers are generally widely available, and Oak hardwood sleepers are frequently sold by timber suppliers. Other hardwoods are available from specialist traders and producers. Timber market dynamics may dictate availability more widely.

Dimensions

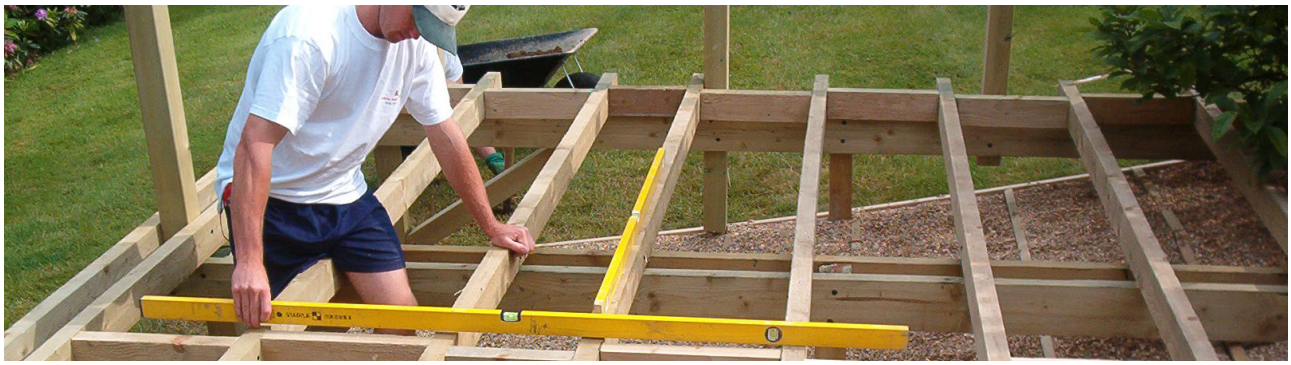
- **Reclaimed ex-railway sleepers:** can be 125mm x 250mm x 2,600mm or 150mm x 250mm x 2,600mm.
- **Softwood sleepers:**
  - **Spruce** length include 1.2m; 1.8m, 2.4m 3.0m, while available widths/heights include 100mm x 200mm and 125mm x 250mm
  - **Douglas Fir/Larch** lengths include 1.2m, 2.4m and 3.0m, while available widths/heights include 100mm x 200mm, 125mm x 250mm, and 200mm x 250mm
- **Hardwood sleepers:**
  - Available Oak lengths are 2.4m, 2.6m, and 3.0m, while widths/heights are 100mm x 200mm and 125mm x 250mm.

Lead times

Lead times on decking can be extensive, especially in the peak selling summer period, so check with your supplier before advising on delivery dates. The capacity for timber preservative treatment can also affect lead times.

Is timber treatment required?

Oak hardwood sleepers may not require preservative treatment as they are naturally more durable, but if you are in doubt, check with your supplier. Softwood sleepers will inevitably be in ground contact either partially buried in soil, forming a raised bed containing soil, or laid on the ground as a path or edging. Therefore it is recommended that all Softwood sleepers need Use Class 4 preservative treatment.



Decking supports and accessories

Supporting joists/posts

Decking joists must be able to carry the intended load. Ask the customer what else will sit on the decking, such as a children's sand pit, a hot tub, or heavy furniture. Joists must also have the same lifespan as the decking on top.

Softwood joists and posts must always be treated with a Use Class 4 timber preservative treatment. Incising is used in difficult-to-treat species, such as Spruce, to aid penetration of the wood preservative so they can more readily achieve the Use Class 4 treatment specification.

- **Softwood:** To comply with building regulations all decks should be built with strength-graded timber. C16 is the minimum strength class that should be used, but C24 strength is recommended for domestic decks that will carry heavy loads.
- **Hardwood:** Match or exceed the structural strength and durability of the hardwood decking above the frame. Visit the hardwoods table on page 20 to discover relevant structural species.
- **Composite:** These systems have their own joists designed to support their load. Ask your supplier or consult manufacturers' websites.
- **Modified wood:** Joists aren't generally available so match the frame material to the deck's expected lifespan.

Decking accessories

Decorative accessories for decking include spindles, with relevant handrails and base rails; newel posts, and post caps, which can vary from round to acorn to square. Match the material to the decking system.

Some decking systems offer complete balustrading panels instead of individual components. Always check the loadbearing capacity – balustrades load tested to Building Regulation requirements are available.

- **Handrails:** may feature a shaped, rebated underside for securing the top head of spindles/balustrades. Some may be dual purpose hand/base rails. Materials and sizes vary.
- **Base rails:** these normally have a single, flat rebate on their upper side to receive the bottom ends of spindles/balustrades.
- **Spindles/balustrades:** square or rounded, turned or plain.
- **Newel posts:** can be square or rounded, turned or plain.

Availability and dimensions

Structural softwoods are available but on much longer lead times than the trade has been used to in the past. For harwood, composite and modified wood joists, check with your supplier.

- **Supporting joists - dimensions**
  Softwood: suitable material ranges from 47x100mm to 47x225mm. Check it has received a Use Class 4 treatment before selling to the customer.
  Hardwood: the material must be suitable for structural purposes. See the hardwoods table on page 20 to find suitable species to match the life span of the hardwood decking.
  Composite: joist sizes will vary with the manufacturer and the size of deck boards they produce. Most composite products require more closely-spaced joists or supports to avoid problems.
- **Decking accessories:** vary widely in shape, dimensions, fixing methods and availability, according to the decking system being chosen. Check with your suppliers and get a precise list of needs from the customer before quoting.

Lead times

Joist material and accessories may have extensive lead times. The available capacity for timber preservative treatment can also affect lead times. Check with your suppliers before advising customers on availability.

Is timber treatment required?

Softwood decking accessories should be pressure treated to a Use Class 3 specification to ensure it's durable enough for the end use.

Softwood decking joists (under frame, sub-frame and joists) need Use Class 4 timber preservative pressure treatment. Structural hardwood that is suitably durable for external use doesn't need to be treated with a wood preservative. More information about timber treatments is online at timberdevelopment.uk

TIMBER DEVELOPMENT UK

THE MERCHANT GUIDE TO SELLING TIMBER

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