

# Typical Woodscape Timbers Properties and Uses Information Datasheet

This Timber Information Sheet offers an overview of the typical timbers Woodscape use when manufacturing street furniture and external structures. It is important a specifier takes into account the properties of a timber, to check it is suitable for a particular end use.

Timber is a versatile material, its properties suited to a wide range of uses both structural and non-structural making it the ideal natural material to use for the public realm.

Table 1 is a reference tool, setting out the properties of 19 timbers Woodscape typically manufacture from, listed alphabetically. This table can be used to help you select the correct species for application, enabling you to compare properties and find alternatives when required.

The data presented includes; species name and includes botanical name, region of origin, timber type and colour, texture, data for density, moisture movement, durability (fungi), treatability (heartwood), working qualities and availability. Notable features and an indication of common uses are included where applicable.



## Key points

- Establish the exact properties required of the timber in order to achieve the desired performance.
- Density of a timber varies depending on species and its moisture content
- All timbers can vary in colour and this can change with use, with the application of finishes and exposure to light. Appearance is also determined by knots, figure and grain pattern, as well as exposure to weathering.
- Surface texture refers to the structural character of the wood as revealed by touch or reaction to cutting tools.
- The dimensional changes that occur when dried timber is subjected to changes in atmospheric conditions are referred to as 'moisture movement'.
- Durability classes refer to the resistance to fungal decay of the heartwood of the species only. The sapwood of most species is considered not durable and should not be used in exposed situations without preservative treatment.
- Treatability refers to how easily timbers can be penetrated with preservatives applied by vacuum pressure processes.
- Availability and price of timber species will vary both from time to time and throughout the country.
- Requesting a Timber Purchasing Policy ensures that the timber specified is legally sourced.
- We strongly recommend that timbers are sustainably sourced. Woodscape are fully accredited with FSC<sup>®</sup>, PEFC and FPCC certifications.

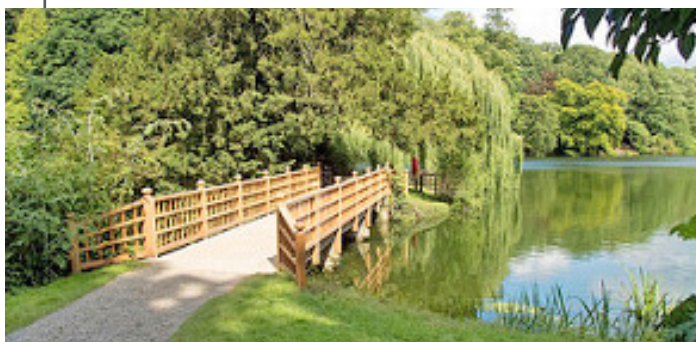
### Specifying timber

Woodscape utilise the properties of hardwood, using it in a variety of applications across the UK's public spaces.

Hardwood timbers can be used for numerous exterior and interior purposes, ranging from structural use, such as pergolas, balconies, bridges, columns, beams and rafters, to non-structural elements such as street furniture, external timber cladding and interior flooring, windows and doors, panels and fencing.

The ready availability of timber and some of its characteristics, such as its workability and appearance, have contributed to its established use in traditional construction and craft, and its modern reputation as an environmentally-friendly renewable material that can enhance the value of any project.

To choose wisely from the range of timber species available, a specifier should establish which properties are required of the timber in order to achieve the desired performance for a particular end use.



Hardwood Timber Parapet, Harewood House, Leeds

### Species

Botanical names are given to timber species, to avoid confusion between different timbers which may have similar common names. Please refer to Table 1 for the selection of timber Woodscape manufacture from.

### Timber properties

#### Timber type

The commercial division of timbers into 'hardwoods' and 'softwoods' bears little relation to the softness or hardness of the timber. Softwoods are produced from coniferous or cone bearing trees which have needle-like leaves and are mostly evergreen, such as pines and yew. Hardwoods are produced from broadleaved trees which produce seeds contained in an enclosed case or ovary, for example an acorn or walnut.

#### Appearance

Hardwood timbers can vary in colour and this can change with use, with the application of finishes and exposure to light. Unprotected timber exposed externally will eventually weather to a silver grey colour. Appearance is also determined by the characteristics such as knots, figure and grain pattern. Timber can be graded and supplied by appearance category and this is often a key consideration where visual appeal is important, such as street furniture.

#### Density

Density varies depending on species and its moisture content. Density is usually quoted at a standard moisture content. (In Table 1 averages at 15% moisture content are quoted; \* indicates that density can vary by 20% or more.)

#### Texture

Surface texture is classified as fine, medium or coarse. It refers to the structural character of the wood as revealed by touch or reaction to cutting tools. This is largely determined by the distribution and size of the various types of cells.

#### Moisture movement

The dimensional changes that occur when dried timber is subjected to changes in atmospheric conditions are referred to as 'moisture movement'. It is classed as small, medium or large and is not directly related to the shrinkage which initially occurs when green timber is dried to moisture contents suitable for in service use. For structural purposes, movement is not usually significant. Species with small movement should be specified where stability in varying humidity is important.

### Working qualities

This refers to ease of working and can be classed as good, medium or difficult. A difficult classification indicates that particular care should be taken in machining to achieve an acceptable surface finish. Good working qualities may be required where the wood is processed by machine or by hand to achieve a particular form or finish.

### Durability

Durability classes refer to the resistance to fungal decay of the heartwood of the species only. The sapwood of most species is considered not durable and should not be used in exposed situations without preservative treatment. Five classes for natural durability to wood-destroying fungi are recognised in BS EN 350-1 Durability of wood and wood-based products.

In reference to Table 1, classification of natural durability of wood:

- Class 1 very durable
- Class 2 durable
- Class 3 moderately durable
- Class 4 slightly durable
- Class 5 not durable

### Treatability

This refers to how easily timbers can be penetrated with preservatives applied by vacuum pressure processes. BS EN 350-2 includes four levels of treatability but recognises that the classes cannot be separated exactly from each other.

The categories included in BS EN 350-2 are:

- easy
- moderately easy
- difficult
- extremely difficult.

### Sourcing timbers

#### Availability

The availability of timber species will vary both from time to time and throughout the country. Some species may not be available as raw material (or only in tiny quantities), especially imported hardwood species that are subject to restrictions on supply under CITES.

Table 1 indicates availability for general guidance only, classified as follows:

1. Readily available at timber merchant
2. Available at specialist timber merchant
3. Limited availability at specialist timber merchant
4. Variable availability at specialist or to order

Specifiers and buyers should always check on the availability of species and sizes with suppliers in advance.

#### Price

Price is difficult to quantify since timber is affected by currency variations. Generally in the UK, decorative hardwoods command higher prices; structural softwoods will normally be cheaper to source.

#### Sustainable sourcing

Ensure that the timber specified is legally sourced and we strongly recommend that it is also sustainably sourced:

- The European Timber Regulation (EUTR) came into force in March 2013 and requires that timber placed on the European market is supplied in accordance with national laws of the country of origin. It also requires evidence of supply chain traceability.
- Third-party certification schemes verify that timber suppliers are part of an unbroken 'chain of custody' system from managed forest to end product. On-product certification labels demonstrate compliance with schemes such as those operated by Forest Stewardship Council® (FSC®) and The Programme for the Endorsement of Forest Certification.