

**Embracing  
the forests' diversity**



# **The distinctive features of oak**

**Reflecting the long life of a unique species**



Brown streaks, irregular grain and pinholes in parquet flooring made of declining oaks (Écho\* line, by Parqueterie Beau Soleil)



The majestic oak tree can be seen throughout France, the world's second largest producer of oak. The density and stability of oak is valued in many different fields: from carpentry and joinery, furniture, parquet flooring and cladding, to stave mills and cooperage. It is also a wood with an abundance of distinctive features, some of which are barely visible. With climate change, oak is developing even more distinctive features, notably an increase in pinholes as a result of insect proliferation – but it still retains its exceptional beauty.



**Colour variations with red and brown hues**

The red heart colouration of oak is due to abnormal hardening of the tree leading to the production of high levels of tannin accompanied by gummy secretions that seep into the wood's vessels. This results in a reddish-brown colouration, often surrounded by black rings at the time of felling.



**Pinholes**

Small holes like those found on old furniture are caused by two wood-eating insects: lyctus beetles and furniture beetles or woodworms. They are becoming more common with global warming, weakening trees' defences. However, an oak tree with pinholes is still exceptionally dense and strong and retains its durability. Once dried and treated after planing, there is no risk of any insects remaining. The only difference is in the appearance.



**Knots and 'cat's paws' / pippy oak**

Oak can display a small or large number of knots. They may be sound or partially intergrown (loose knots are usually removed during processing). Oak often features round clusters of small knots or buds ('pippy oak'), resembling the imprints of cat paws. They have no downsides, instead creating extremely beautiful patterns. Similarly, oak can develop burrs, round growths in a variety of sizes consisting of interwoven grain and knots.



**Silver grain**

Silver grain refers to the visible structure of the medullary rays through which nutrients are transported from the outer bark to the heart of the trunk during growth. Silver grain can be more or less prominent, often resembling veins or flames. Depending on how the wood is sawn, it can be fine and discreet or wider and very obvious. It gives oak an exquisite appearance which is greatly appreciated in cabinetmaking and for decorative purposes.

As with any other species, other patterns may occur in addition to these oak-specific features, which reflect the life of the tree, such as irregular growth rings, double sapwood, burrs and fissures.



Twisted oak



Plank made from twisted oak



Knots & irregular growth rings



Oak burr



Colour variations in a kitchen made from Red Oak. Model 1902, Inova Cuisine. Wood supplied by: Scierie Joslet.



Pinholes and brown vein pattern of a kitchen worktop at the bed and breakfast 'La Maison de Margaret', in Cluny (71).



**Discover new aesthetics, with resistance and durability unchanged.**



# Controlled and regulated features

The features of oak, like those of other species, have long been subject to standards for processing. These features are classified in two different ways: strength grading for structural timber and appearance grading for all other timber.

## Strength grading for oak

Required by CE marking as defined in the standard EN 14081-1, strength grading is mandatory for all structural elements and most other components used in the construction industry. It takes into account all the features that affect the mechanical properties of the wood: width of growth rings, diameter of knots according to their location, size and depth of fissures, bark pockets, slope of grain, waness, biological degradation and deformation. Each of these can influence the strength grade assigned to the wood. Strength grading can be carried out:

- by visual inspection, in accordance with the standard EN 975-1 'Sawn timber - Appearance grading of hardwoods - Part 1: Oak and beech'. This reference document assigns strength classes from 1 to 4 for oak.
- by machine, in accordance with the standard EN 14081-3<sup>1</sup>, which assigns strength grades from D18 to D60 (D18 to D30 for oak).

**i Checks are permitted. Black holes and brown/red heartwood are features which are permitted in Q-P 2. They are also admissible in Q-P 1, in accordance with the provisions set out in the standard.**

## Appearance grading for oak

Required for non-structural uses where the aesthetic qualities of the wood are the most important consideration (interior design, joinery, etc.), appearance grading is based on visual criteria that take every feature into account: number and size of knots, width of growth rings, straightness, variations, etc. Appearance grading of oak complies with the standard EN 975-1. It offers a range of options from A Exceptional, to 1 to 4 and is accompanied by a specific, standardised grading for unedged boards (selected boards and boules), 41 mm thick square edged timber and beams (thickness + width ≥ 200 mm and thickness ≥ 80 mm), also ranging from A Exceptional, to 1 to 4.

<sup>1</sup>'Timber structures – Strength-graded structural timber with rectangular cross section – Part 3: Machine grading; additional requirements for factory production control'.

➔ Find out more about oak and its specific features

<https://www.frenchtimber.com/en/french-species/oak/>

➔ Find out more about oak grading, download the factsheet 'Grading of Oak Sawn Timber'

<https://www.frenchtimber.com/wp-content/uploads/2025/05/Oak-Grading-UK-WEB.pdf>

➔ Find out more about oak grading, download the factsheet 'Yield Grading for the Processing Industry'

<https://www.frenchtimber.com/wp-content/uploads/2020/09/OAK-Yield-grading.pdf>

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