

# Grading of Oak Sawn Timber

Appearance grading / European standard EN 975-1

Strength class / French standard NFB 52-001



# Boules and boards

Un-edged oak boules (or selected boards) are appearance graded by means of a virtual grading rectangle measuring 0,20 m x 2 m.

**See page 4: tolerance for boards in boules**

Features less than 10 cm from the board's edges are generally permitted with a reduction in volume.



## Grades Q-B A and Q-S A

- Fairly straight boards with a practically straight grain.
- One sound knot permitted with a diameter less than 20 mm.
- Permitted with a reduction: an isolated knot less than 15% of the board width, unsound sapwood if isolated, sapwood with holes.

Excluded: not intergrown or unsound knots, ring shake, frost crack, bark pocket, included sapwood, brown pith, rot.



## Grades Q-B 1 and Q-S 1

- Sound knots less than 5 mm, permitted if fewer than eight.
- Sound knots with a diameter between 5 and 25 mm, permitted where equivalent to one knot of less than 50 mm.
- Permitted with a reduction: one not intergrown or unsound knot less than 25 mm, one isolated knot less than 20% of the board width, ring shake, frost crack, bark pocket, unsound sapwood if isolated, brown pith less than 25%, sapwood with holes.

Excluded: included sapwood, rot.



# Appearance grading

European standard EN 975-1 (2009)

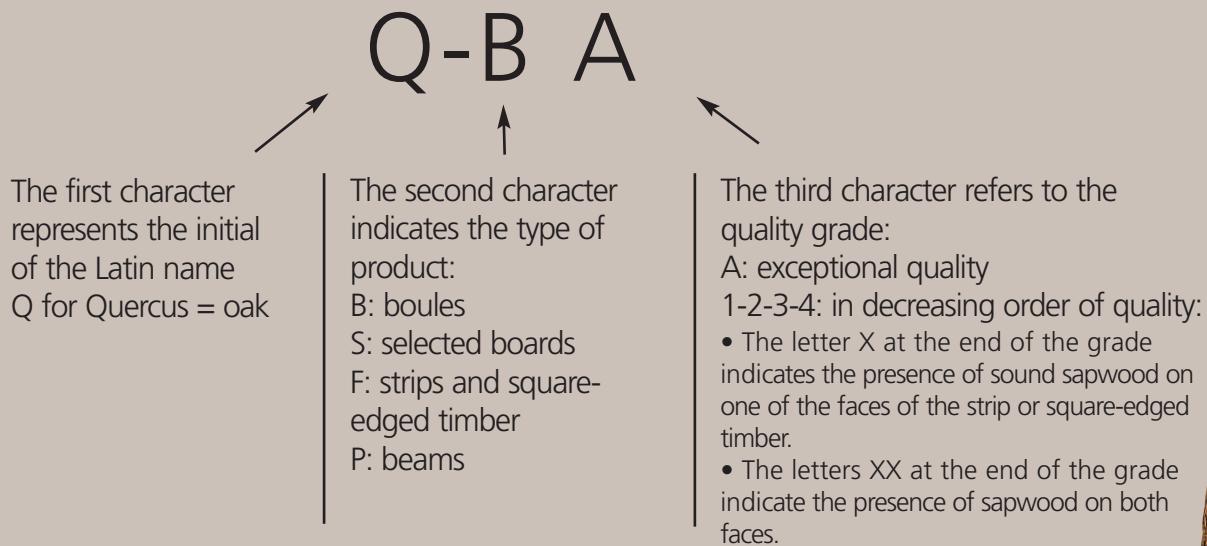
This document indicates the method for visually grading the appearance of oak sawn timber and specifies the designations and definitions of the different appearance grades for oak sawn timber.

This document applies to oak products in the following categories:

- Un-edged timber (selected boards and boules).
- Square-edged timber of thickness  $\leq 41$  mm.
- Beams: thickness + width  $\geq 200$  mm and thickness  $\geq 80$  mm.

Other oak products not included in these categories may, if necessary, be subject to specific contract requirements based on this standard.

The chosen designation features three characters (letters and numbers) including two or three extra letters if necessary:



The following grades have therefore been standardised:

## Boules

Q-B A    Q-B 1    Q-B 2    Q-B 3    Q-B 4

## Selected boards

Q-S A    Q-S 1    Q-S 2    Q-S 3    Q-S 4

## Strips and square-edged timber

Q-F 1 a    Q-F 1 b    Q-F 2    Q-F 3    Q-F 4

## Beams

Q-P A    Q-P 1    Q-P 2



# Dimensional grading of oak sawn timber

## Boules

• **Boules** are marketed in categories of specific dimensions that are determined by the width of the central board, including the sapwood and measured halfway along the length, under bark, without any reductions and freshly sawn.

- Width for grade Q-B A:  $\geq 350$  mm
- Width for grades Q-B 1, Q-B 2, Q-B 3 and Q-B 4:  $\geq 250$  mm
- Narrowest width:
  - 120 mm, excluding sapwood, for the whole length of the board for grade Q-B A
  - 100 mm, excluding sapwood, measured halfway along the board for grade Q-B 1
  - 80 mm, excluding sapwood, measured halfway along the board for grade Q-B 2
  - 60 mm, excluding sapwood, measured halfway along the board for grades Q-B 3 and Q-B 4
- Minimum length: 2 meters & up

• **Selected boards** meet the same criteria (narrowest width and width) as those for boules.

## Square-edged timber

The definitions below apply to two types of square-edged timber:

- Strips in widths of 40 to 99 mm: in fixed-width batches; length 250 to 2100 mm in 50 mm increments.
- Square-edged timber: 100 mm & up, in variable or fixed-width batches

## Beams

Oak beams are commonly available in the following dimensions (freshly sawn) expressed in mm:

- |           |         |         |
|-----------|---------|---------|
| • 100x100 | 150x150 | 200x200 |
| • 120x120 | 180x180 | 250x250 |

# Rules for determining grades

Appearance grades for oak are defined in the EN 975-1 standard (2009).

Size variations are disregarded when grading timber quality.

Such variations are covered by the EN 1313-2 standard or governed by specific contract requirements.

### 1 - Selected boards:

Each board is assessed in terms of its quality. No more than 10% of boards with a grade lower than the lowest of the specified grades are permitted.

### 2 - Boules:

The entire boule is assessed in terms of its quality. In case of any features that are not permitted according to the corresponding grade definition, the volume is reduced accordingly. The proportion of grades admitted within a boule is given in the following table:

Proportion of grades admitted within a boule	
$\geq 65\%$	<b>Specified grade</b>
$< 25\%$	<b>One grade lower</b>
$< 10\%$	<b>Two grades lower</b>

### 3 - Strips or square-edged timber:

The quality of every sawn piece is assessed by the appearance of its faces and, if applicable, its edges, while taking account of the presence, extent, position and distribution of any features, specific sawing and deteriorations resulting from it.

In case of failure to meet any one of the specified conditions, the piece in question will be downgraded. Size defects due to sawing (irregular thicknesses and widths) are disregarded when appearance grading pieces (see standard EN 1313-2).

Such products may not be subjected to width and/or length reduction.

#### 4 - Beams:

Only features distributed across the entire piece are taken into account, with the exception of dead knots, the maximum number of which is determined per linear metre.

# Principles for taking features into consideration

## Boules and selected boards

### Grading face

a) For selected boards:

- Take account of features on the "top" face, which is defined as the face that can be seen on the production line after sawing.
- In case of special measuring-out arrangements, quality is determined by the face whose width is being measured.

b) For boules:

- Take account of features on the top face of the stack forming the boule.

Grading area

**The grade for each board is determined using a virtual rectangle measuring 0.2 m x 2.0 m, which contains the maximum number of features or the most detrimental features on the grading face.**

Features less than 10 cm from the edges or ends of a board are ignored, unless the width and length are too small to draw a rectangle of 0.20 m x 2 m. This approach is not suitable for Q-BA and Q-SA grades, where only the width can be reduced, which is then limited to one third of the width.

Presence of an isolated feature (no more than one): un-edged timber cannot be downgraded due to a single feature that is not permitted in the grading system. As a result, the feature is accepted by reducing the width or length.

## Strips and square-edged timber

### Grading face

- Take account of features on the best face.

### Knots

Take account of the timber's length or the most affected linear metre if the length is > 1 m.

Concept of equivalence: except for Q-F1a. This allows for any distribution of knots, provided that:

- The diameter of each knot is less than the permitted diameter.
- The sum of the diameters is less than the permitted maximum value.

Example for Q-F2:

- The maximum permitted knot diameter is 25 mm.
- The maximum number is three, so the sum is 75 mm (25 mm x 3).

One possible distribution is four 10 mm knots, one 15 mm knot and one 20 mm knot.

### Other features

These features are taken into account across the entire piece.

## Beams

Take account of features across the piece as a whole, with the exception of dead knots, the maximum number of which is determined per linear metre.

**Reminder: the method for measuring knots differs for appearance grading and structural grading (the principles are described in the appendix).**