

# APPEARANCE GRADING OF SAWN BEECH

*New brochure underway*

## Foreword

Accepted by the member countries of the European Sawmills Organization and adopted by the European Standardization Committee "CEN TC 175/WG 2" this quality grading was submitted for public enquiry in the form of a European draft standard for the purpose of being published as a European standard.

This quality grading defines qualities by the appearance of sawn timber and determines the terminology and the definitions of the different grades of freshly sawn beech and of regularised beech.

It is applicable to the following beech products:

- \* boules and boards
- \* square-edged timber (green and dry timber)

Other products of sawn beech can be subject to contractual agreements which, however, should make use of the basic classification of this standard.

For further information, in particular on the definition of the terms used in this standard, we refer to the "Guide Pratique d'Emploi des Sciages de Chêne et de Hêtre" published by APECF.

The standardized classification chosen contains 3 characters (letters or numbers) or, if required, 1 additional letter:

• The first character indicates the latin initial:

**F** - (Fagus: beech)

• The second character indicates the type of product:

- B** - for boules
- F** - for strips and square-edged timber
- D** - for partially finished square-edged timber

• The third character refers to the category by quality:

- A** represents exceptional quality
- 1 - 2 - 3** represent the following decreasing levels of quality.

• Finally, the addition of the letter **R** after the quality code indicates the presence of red heart exceeding 20% of the boards' width in grade F-B A, 25% in F-B 1 and 33% in F-B 2. In grade F-B 3 coloration is not taken into consideration.

## THE FOLLOWING GRADES WERE STANDARDIZED:

<b>B</b> oules	4 grades	F-B A	F-B 1	F-B 2	F-B 3
<b>S</b> quare-edged timber	3 grades	F-F A	F-F 1	F-F 2	
<b>P</b> artially finished square edged timber	3 grades	F-D A	F-D 1	F-D 2	



**LE BOIS AVANCE.**



# BOULES

## DIMENSIONAL CLASSIFICATION

Boules that are re-assembled or boards are sold in dimensional categories on the basis of the width of the central board, measured in the middle of its length, excluding bark, with no reductions, freshly sawn.

The **width** of the central board, measured at mid-length, excluding bark is:

- at least 400 mm. A maximum of 20% of boules with a central board width of 350 - 390 mm is acceptable for grades F-B A and F-B 1.
- 350 mm with a tolerance of 20% of boules having a central board width of 300 - 340 mm for grade F-B 2
- 300 mm for grade F-B 3

### Minimum width:

Measured at mid-board length is:

for boules: 150 mm for grade F-B A

120 mm for grades F-B 1, F-B 2, F-B 3.

for boards: 100 mm for all grades.

### Length:

Boules: 3 m and more, in 100 mm increments. For 10% of the batch a length between 2.50 m and 2.90 m is tolerated.

Boards: 1.80 m and more, in 100 mm increments. For 10% of the batch a length between 1 m and 1.70 m is tolerated.

*N.B.: Unless otherwise agreed by the parties concerned the final inspection of the boules and the boards takes place on the site of the seller. Any reductions will be carried out on the basis of the criteria of the individual grades.*

## F-B A



The boules must be composed of sound boards, with reasonable curve. They must be straight-grained.

70% of the boards in any batch must be free from all defects on one face.

Boules can be accepted with up to 30% of boards containing intergrown sound knots, non-straight splits, bark pockets, sound dead knots but will give rise to the usual volume reductions at the time of measurement.

One board must not present more than one of the defects mentioned above.

## F-B 1



The boules must be composed of sound boards, with only reasonable curve, and only slight presence of slope grain.

50% of the boards in any batch must be free from all defects on one face.

Boules can be accepted with up to 50% of boards containing intergrown sound knots.

Non-straight splits, bark pockets, and deterioration give rise to volume reductions at the time of measurement.

Only one of these defects is acceptable on any one board.

Not acceptable: shakes, rot, curly grain.

## F-B AR / F-B 1R

Definition as for F-B A and F-B 1, but without limitation of red coloration. It must, however, be regular and not too dark.

Sound red heart without width limitation permitted.



## F-B 2



The boules must be composed of sound boards, with only reasonable curve, and only slight presence of slope grain.

30% of the boards in any batch must be free from all defects on one face.

Boules can be accepted with up to 70% of boards containing intergrown sound and dead knots.

A low number of unsound and rotten knots is tolerated.

Non-straight splits, bark pockets and deterioration due to fungal and insect

attack and curly grain are tolerated with volume reduction unless one board does not present more than two of these defects.

Frost cracks, ring shakes, star shakes and checks are tolerated.

## F-B 2R

Definition as for FB2.

Red coloration is not limited.

## F-B 3

Boule composed of boards for which all defects are accepted, including sound knots, with no limit on the diameter.

However, bark pockets, rotten knots, cat's paws, stains and shakes will give rise to the usual volume reductions. Red heart coloration is not limited.

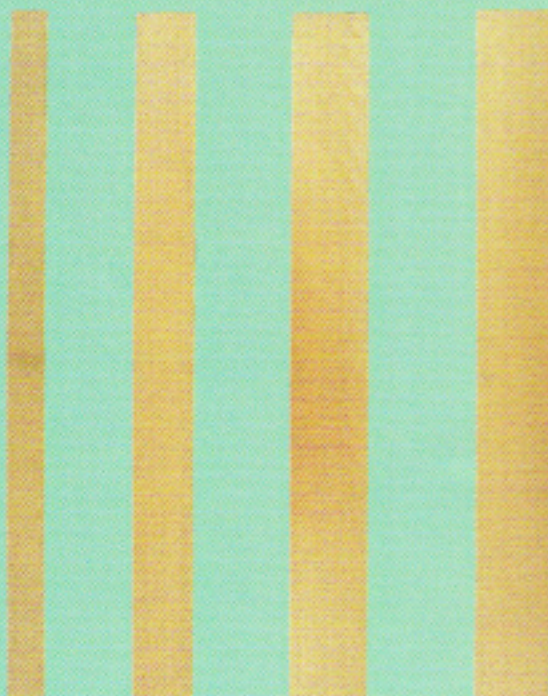
# SQUARE-EDGED TIMBER

## THE FOLLOWING QUALITIES WERE DEFINED FOR THREE TYPES OF SQUARE-EDGED TIMBER:

- *In strip form:*
  - Thickness:* 27 mm
  - Width:* 50 - 90 mm, in 10 mm increments, in batches of fixed width.
  - Length:* 300 mm and up, in 50 mm increments
- *In board form:*
  - Thickness:* 27 mm, 34 mm, 41 mm, 50 mm
  - Width:* 100 mm and more, random in lots
  - Length:* two categories:
    - ... below 180 mm
    - above 180 mm
- *In squares: in sections of 400 x 400, 500 x 500, 600 x 600, 700 x 700, 800 x 800*
  - Length: :* 300 mm and more, in 50 mm increments

## F-F A

(3 - 4 clear faces to dimension)



Green sawn timber free from all defects, deterioration, or sawing defect, on four faces

Bow tolerance 15 mm/m

For grade F-F AR, sound red heart permitted.

## F-F 1

(3 - 4 clear faces, freshly sawn)



Green sawn timber free from all defects, deterioration, or sawing defect, on three faces.

On one face or one edge, tolerance of two intergrown sound knots on 25% of the pieces of a batch. These knots must not exceed 1/4 of the width of the piece or 20 mm.

Bow tolerance 15 mm/m.

For grade F-F 2R, sound red heart permitted.



## F-F 2 (0 - 3 clear faces)



**S**awn green timber. On each face and edge, three intergrown sound knots are tolerated unless they are bigger than 1/3 of the width of the piece or 40 mm. Other defects are permitted except bark pockets, stain, rot, fungal attack, insect attack. Sound red heart is permitted. Bow tolerance 15 mm/m.

A CORRESPONDING CLASSIFICATION OF STRIPS AND PARTIALLY FINISHED SQUARE EDGED TIMBER IS ALSO AVAILABLE FOR A MOISTURE CONTENT OF 12 % + 2 %. THE GRADES ARE AS FOLLOWS: F-D A, F-D 1 AND F-D 2. THE QUALITY DEFINITION IS THE SAME; THE TOLERANCES OF THE THREE GRADES ARE AS FOLLOWS:

- BOW TOLERANCE OF 5 MM/M,
- A CUP OF 1 % OF THE WIDTH IN F-D A AND F-D 1 AND OF 2% IN F-D 2.
- A TWIST OF 2 % OF THE LENGTH IN F-D A AND F-D 1 AND OF 4% IN F-D 2.

## Considering red heart in Beechwood



◀ *Beech with white heart*



◀ *Not acceptable white heart in white wood*



◀ *Limit to which heart is accepted in white wood*



◀ *Not acceptable in white wood*

Red heart in beech is the result of a physiological reaction of the woods' living cells to the attack of a fungus, which takes the form of a reddish coloration, much darker than the normal wood.

When its presence is limited, red heart has no adverse effect on the wood's suitability for certain uses. Certain white wood grades tolerate the presence of a percentage of red heart, as long as it is regular and not too dark, as shown in the photograph.



# **G**ENERAL PRINCIPLES FOR THE DETERMINATION OF GRADES

## **1) Determination of the quality of a boule or of boards.**

Boules: All boules are judged by their quality.

Boards: Each board is judged by its quality.

The presence of characteristics which are not permitted in a grade leads to a reduction of volume in accordance with the definition of the grade.

## **2) Determination of the quality of a piece (strips or square-edged timber)**

The quality of every sawn piece is judged by the appearance of the faces and the edges with particular emphasis being placed on the presence, importance, position and distribution of structural characteristics, of logging characteristics and of deterioration.

If one single characteristic does not comply with the criteria laid down the piece will be downgraded.

Appearance grading does not take account of dimensional defects (irregular thickness and width).

## **3) Quality grading of a batch of square-edged timber:**

The pieces must comply with the quality characteristics of the grades they were assigned to.

## **G**ENERAL PRINCIPLES FOR THE MEASUREMENT OF QUALITY CHARACTERISTICS

- Knots are measured by their smallest diameter.

Knots with a diameter of  $< 5$  mm, which are excluded in grade A, are not taken into consideration at the time of measurement. A group of knots of the same kind can be taken as one knot whose dimension corresponds to the sum of the dimensions of the group of knots.

Cat's paws are considered as one knot whose size corresponds to the diameter of the cat's paw.

- Shakes are judged by their length.
- Ring shakes are measured with a cord if they are smaller than a semicircle. If they occur on the faces their diameter and length is measured.
- Surface checks are judged by measuring the cracked surface
- Bark pockets are taken into consideration and measured by their length and width.
- Colorations are taken into consideration.
- Fungal attack and insect attack are considered and / or measured in accordance with the dimension of the attacked surface.
- Sapwood is taken account of by its nature and dimension, on the face and on the edge.