



# SLOVENSKI STANDARD

## SIST EN 1309-3:2018

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Nadomešča:

SIST EN 1310:2001

SIST EN 1311:2001

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### Okrogli in žagani les - Metode merjenja - 3. del: Značilnosti in biološka razgradnja

Round and sawn timber - Methods of measurements - Part 3: Features and biological degradations

Rund- und Schnittholz - Verfahren zur Messung - Teil 3: Merkmale und Schädlingsbefall

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Bois ronds et bois sciés - Méthode de mesure - Partie 3: Singularités et altérations biologiques

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79.040	Les, hlodovina in žagani les	Wood, sawlogs and sawn timber
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EUROPEAN STANDARD

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## Round and sawn timber - Methods of measurements - Part 3: Features and biological degradations

Bois ronds et bois sciés - Méthode de mesure - Partie 3  
: Singularités et altérations biologiques

Rund- und Schnittholz - Messmethoden - Teil 3:  
Merkmale und biologische Schädigungen

This European Standard was approved by CEN on 29 October 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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**EN 1309-3:2018 (E)****European foreword**

This document (EN 1309-3:2018) has been prepared by Technical Committee CEN/TC 175 “Round and sawn timber”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2018, and conflicting national standards shall be withdrawn at the latest by July 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1310:1997 and EN 1311:1997.

This standard is one of a series, and covers methods of measurement for round timber and sawn timber.

Other standards in this series are:

- EN 1309-1 Round and sawn timber - Method of measurement of dimensions – Part 1: Sawn timber
- EN 1309-2 Round and sawn timber - Method of measurement of dimensions – Part 2: Round timber

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## 1 Scope

This European Standard specifies the methodology for measurement of features – in relation to wood structure, biological agencies and other damage – taken into account in the visual grading:

- a) for appearance – of sawn, processed and round timber;
- b) for serviceability – of sawn and processed timber (identified in EN 1611-1 as the integrity of the timber).

When the standard is applied the methodology of measurement used shall be stated.

It is not applicable to structural timber for which strength grading in accordance with EN 14081-1 is required.

This standard applies to hardwood and softwood sawn timber, both square edged and un-edged, to processed timber and to round timber.

It does not apply to tropical timber.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 844 (all parts), *Round and sawn timber - Terminology*

EN 1611-1, *Sawn timber - Appearance grading of softwoods - Part 1: European spruces, firs, pines and Douglas firs*

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EN 14081-1, *Timber structures - Strength graded structural timber with rectangular cross section - Part 1: General requirements*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 844 apply.

## 4 Symbols

$d$	size, in millimetres;
$a$	width on the minor axis, in millimetres;
$b$	width on the major axis, in millimetres;
$n_{max}$	maximum permitted number of knots;
$d_1, d_2, \dots, d_n$	sizes of the individual knots, in millimetres;
$d_{max}$	maximum permitted size of a knot, in millimetres.

## EN 1309-3:2018 (E)

## 5 Sawn and processed timber

## 5.1 Knots

## 5.1.1 General

For the purposes of this standard, knots in sawn timber are classified according to their shape, size and position. Size is derived from the formulae given below and expressed in millimetres or as a percentage of a dimension of the surface where the knot occurs. The following symbols are used in the formulae, with suffixes as required:

$d$  is the size, in millimetres;

$a$  is the width on the minor axis, in millimetres;

$b$  is the width on the major axis, in millimetres.

Methodology for measurement of knots for the assessment of appearance is set out in 5.1.2. For assessment of serviceability, an alternative methodology for measurement of knots is given in Annex A.

NOTE For strength grading of structural timber, refer to EN 14081-1.

## 5.1.2 Appearance assessment methodology

## 5.1.2.1 General

Consider each knot individually, except for 'cat's paw'.

Measure knots on a part or all the surface of the face(s) or the edge(s) as specified by the grading rule used. In the case of a knot with bark on its perimeter, the measurement of the knot shall include the bark.

Figures 1 to 6 show the categories of knots that shall be measured. Each figure is accompanied by the corresponding formula that is generally the arithmetic average of the minor axis ( $a$ ) and major axis ( $b$ ) of the knot ( $d = (a + b)/2$ ). Measure the width on each axis and derive the size from the formula.

For each grade, the maximum size and number of knots per piece or per unit measure is stated in the grading standards / grading rules.

A larger number of smaller knots may be permitted provided their cumulative measure does not exceed the maximum knot size multiplied by the number permitted within a grade, which can be expressed as:

$$\sum_{1}^{n} d \leq n_{max} \times d_{max} \quad (1)$$

where

$n_{max}$  is the maximum permitted number of knots;

$d_1, d_2, \dots, d_n$  are the sizes of the individual knots, in millimetres;

$d_{max}$  is the maximum permitted size of a knot, in millimetres.

Where a grading standard permits the use of such cumulative measurement it will be stated in the grading standard.



### 5.1.2.2 Round knot

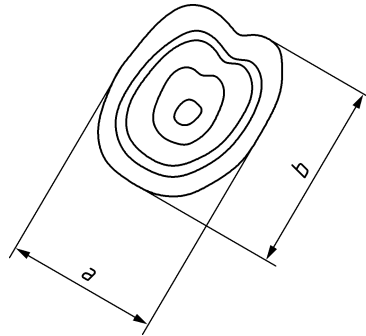


Figure 1 — Round knot

Formula:

$$d = \frac{a + b}{2}$$

(2)

### 5.1.2.3 Oval knot

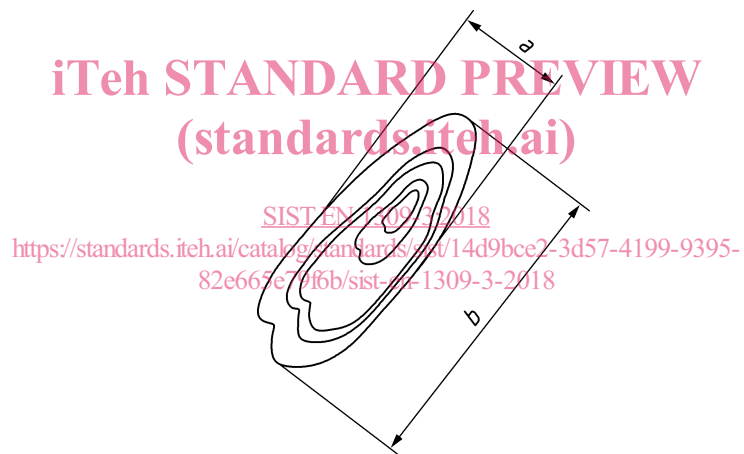


Figure 2 — Oval knot

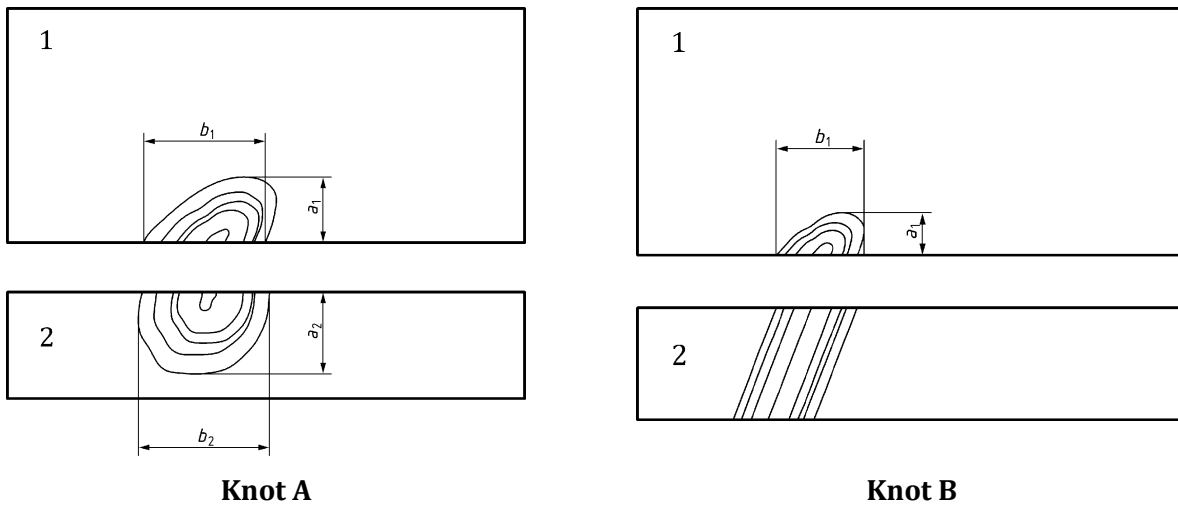
Formula:

$$d = \frac{a + b}{2}$$

(3)

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## 5.1.2.4 Arris knot

**Key**

- 1 On faces  
 2 On edges (Knot B: not measured, record its presence)

**Figure 3 — Arris knot**

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Formula:

on face (Knot A and Knot B):

$$d = a_1 \quad \text{SIST EN 1309-3:2018} \quad (4)$$

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on edge (Knot A):

$$d = a_2 \quad (5)$$

**5.1.2.5 Spike knot (Oval knot with maximum to minimum ratio exceeding 4)**

Depending on the grading rule used,

- a) measure as oval knot, or  
 b) not measured, record its presence.

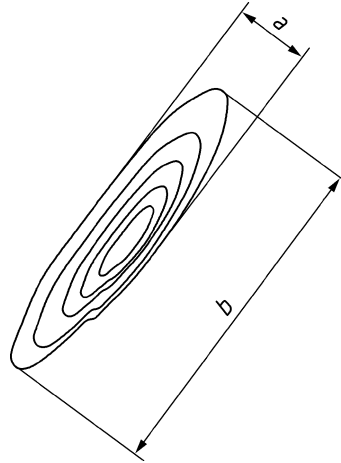


Figure 4 — Spike knot

### 5.1.2.6 Splay knot

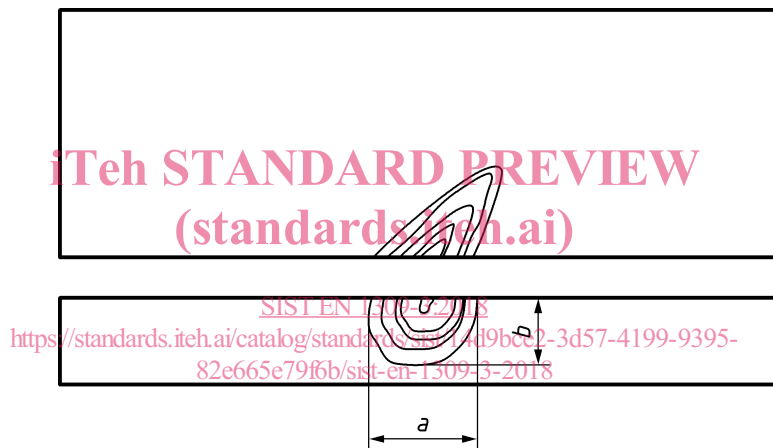


Figure 5 — Splay knot

Depending on the grading rule used,

- a) measure on the edge only and use the formula:

$$d = \frac{a + b}{2} \quad (6)$$

or

- b) not measured, record its presence.

### 5.1.2.7 Branched knot

Depending on the grading rule used,

- a) not measured, record its presence, or  
 b) record the number of knots in a unit of length.

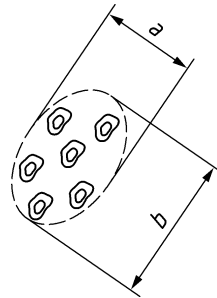
Where a branched knot opens on the edge, measure according to 5.1.2.6.

**EN 1309-3:2018 (E)****5.1.2.8 Knot cluster**

Measure the individual knots.

**5.1.2.9 Cat's paw**

Measure the total size of the knot cluster.



**Figure 6 — Cat's paw**

Formula:

$$d = \frac{a + b}{2} \quad (7)$$

**5.2 Resin pocket**

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Depending on the grading rule used,

- measure the major axis of the resin pocket, expressed in millimetres. If more than one, also record their number per metre length of the piece or for the full length of the piece; or
- not measured, record its presence.

**5.3 Reaction wood**

Depending on the grading rule used,

- measure the length and/or the width of a rectangle that encloses it, expressed in centimetres or as a percentage of the length and/or the width of the surface (face or edge) being considered. Where there are two or more areas of reaction wood, each shall be measured as before, and the respective dimensions totalled; or
- not measured, record its presence.

**5.4 Grain****5.4.1 Slope of grain**

Use a scribe to determine slope of grain (see Figure 7.a).

A scribe is shown in Figure 7.b. It consists of a cranked rod with a swivel handle at one end, a needle set to a slight trailing angle at the other.

If the scribe is drawn along the piece of timber in the apparent direction of the grain, applying sufficient but not excessive pressure, it will scribe a line that shows accurately the direction of grain.