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**Železniške naprave – Zgornji ustroj – Leseni pragi in kretniški leseni pragi**

Railway applications - Track - Wood sleepers and bearers

Bahnanwendungen - Oberbau - Gleis- und Weichenschwellen aus Holz

Applications ferroviaires - Voie - Traverses et supports en bois

**Ta slovenski standard je istoveten z: EN 13145:2001**[SIST EN 13145:2004](https://standards.iteh.ai/catalog/standards/sist/5c5a88f6-7495-47c3-a920-05790e5b2e40/sist-en-13145-2004)<https://standards.iteh.ai/catalog/standards/sist/5c5a88f6-7495-47c3-a920-05790e5b2e40/sist-en-13145-2004>**ICS:**

45.080	Tračnice in železniški deli	Rails and railway components
79.040	Les, hlodovina in žagan les	Wood, sawlogs and sawn timber

**SIST EN 13145:2004****en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 13145

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English version

## Railway applications - Track - Wood sleepers and bearers

Applications ferroviaires - Voie - Traverses et supports en bois

Bahnanwendungen - Oberbau - Gleis- und Weichenschwellen aus Holz

This European Standard was approved by CEN on 1 December 2000.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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

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**Foreword**

This European Standard has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European Standard defines wood species, quality requirements, origin, manufacturing conditions, forms, dimensions and tolerances as well as the durability and preservation of wood sleepers and bearers for use in railway tracks. It does not cover specific finishing processes that may be required by the customer. It does not apply to other track timbers.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 252	Field test method for determining the relative protective effectiveness of a wood preservative in ground contact
EN 335-1	Durability of wood and wood-based products - Definition of hazard classes of biological attack - Part 1: General
EN 350-2	Durability of wood and wood-based products - Natural durability of solid wood - Part 2: Guide to natural durability and treatability of selected wood species of importance in Europe
EN 351-1	Durability of wood and wood-based products - Preservative-treated solid wood - Part 1: Classification of preservative penetration and retention
EN 599-1	Durability of wood and wood-based products - Performance of wood preservatives as determined by biological tests - Part 1: Specification according to hazard class
EN 844-3:1995	Round and sawn timber - Terminology - Part 3: General terms relating to sawn timber
EN 844-7:1997	Round and sawn timber - Terminology - Part 7: Terms relating to the anatomical structure of timber
EN 844-9:1997	Round and sawn timber - Terminology - Part 9: Terms relating to features of sawn timber
EN 844-10:1998	Round and sawn timber - Terminology - Part 10: Terms relating to stain and fungal attack
EN 844-11:1998	Round and sawn timber - Terminology - Part 11: Terms relating to degrade by insects

## 3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

### 3.1

#### **wood sleeper**

wood beam which supports running rails, check rails and where appropriate conductor rails at right angles to its axis. Usually the beam supports two running rails to form one track

### 3.2

#### **wood bearer**

wood beam, similar to a sleeper but generally longer, used to support running rails, check rails and where appropriate conductor rails, crossings and operating mechanisms in switches and crossings

**3.3****heartwood**

inner zone of wood that, in the growing tree, has ceased to contain living cells or to conduct sap [EN 844-7:1997]

**3.4****sapwood**

outer zone of wood that, in the growing tree, contains living cells and conducts sap [EN 844-7:1997]

**3.5****included sapwood**

presence in the heartwood of a complete or incomplete ring having the colour and the properties of sapwood [EN 844-9:1997]

**3.6****red heart in beech**

red or brown stain affecting the central portion of beech wood, sharply defined [EN 844-10:1998]

**3.7****grey , purple heart**

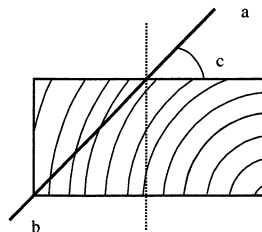
grey or purple discoloration of the heartwood due to fungal attack

**3.8****grain**

general direction or arrangement of fibres [EN 844-7:1997]

**3.9****edge grain**

timber converted so that the growth rings meet the upper face of the sleeper or bearer at an angle greater than  $45^\circ$  when measured at the centre of the upper face (see figure 1)



**Figure 1 - Edge grain**

The line a-b is a tangent to the growth ring where it meets the upper face of the sleeper or bearer. The angle is measured at c

**3.10****annual ring**

growth ring corresponding to an annual period of growth [EN 844-7:1997]

**3.11****wane**

original rounded surface of a log, with or without bark, on any face or edge of sawn timber (see figure 2) [EN 844-3:1995]

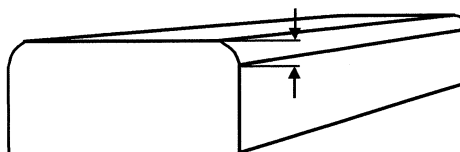


Figure 2 - Wane

**3.12****chairing area**

for sleepers, the chairing area is the area on the upper surface covering a length of 250 mm on both sides of the centre of each rail to be mounted

For bearers, the chairing area covers the whole length with the exception of 250 mm at each end.

**3.13****rot**

decomposition of wood by fungi or other micro-organisms resulting in softening, progressive loss of mass and strength, and often a change of texture and colour [EN 844-10:1998]

**3.14****knot**

portion of a branch embedded in the wood [EN 844-9:1997]

**3.15****sound knot**

knot showing no indication of rot [EN 844-9:1997]

**3.16****intergrown knot**

knot that, on the surface considered, is intergrown with the surrounding wood for more than 3/4 of its cross-sectional perimeter [EN 844-9:1997]

**3.17****dead knot**

knot that, on the surface considered, is intergrown with the surrounding wood for less than 1/4 of its cross sectional perimeter [EN 844-9:1997]

**3.18****loose knot**

dead knot that is not held firmly in place [EN 844-9:1997]

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**3.19****unsound knot**

knot affected by rot [EN 844-9:1997]

**3.20****indent**

recess caused by mechanical removal of an unsound knot down to the sound part of the timber

**3.21****bark pocket**

bark that is partly or wholly enclosed in the wood [EN 844-9:1997]

**3.22****fissure**

longitudinal separation of fibres [EN 844-9:1997]

**3.23****split**

fissure that extends from one surface to another [EN 844-9:1997]

**3.24****frost crack**

radial fissure caused by frost action on the standing tree that extends from the sapwood to the pith and for a certain distance longitudinally [EN 844-9:1997]

NOTE: Frost crack is accompanied by darkening of the adjacent wood and deviation of the annual rings.

**3.25****check**

short, narrow and shallow fissure [EN 844-9:1997]

NOTE: Caused by drying.

**3.26****end shake**

fissure showing on the end surface [EN 844-9:1997]

NOTE: For sawn timber, possibly extending to a face or edge.

**3.27****heart shake**

radial end shake originating at the pith [EN 844-9:1997]

**3.28****ring shake**

fissure following the line of a growth ring [EN 844-9:1997]

### 3.29

#### spring

lengthwise curvature of a piece of timber normal to the edge (see figure 3) [EN 844-3:1995]

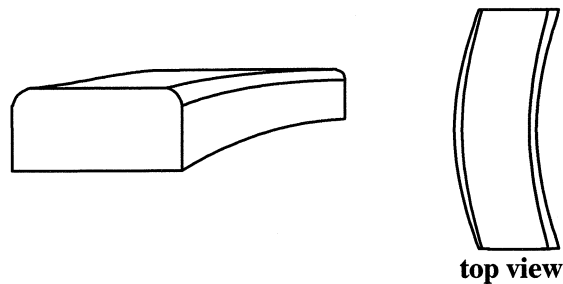


Figure 3 - Spring

### 3.30

#### bow

lengthwise curvature of a piece of timber normal to the face (see figure 4) [EN 844-3:1995]

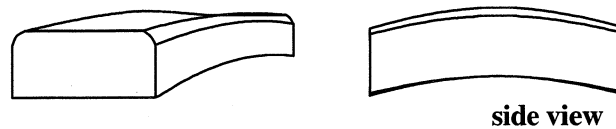


Figure 4 - Bow

### 3.31

#### cup

curvature of a piece of timber across the width of the face (see figure 5) [EN 844-3:1995]



Figure 5 - Cup

### 3.32

#### twist

lengthwise spiral distortion of a piece of timber (see figure 6) [EN 844-3:1995]

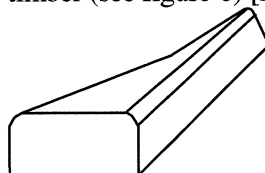


Figure 6 - Twist

### 3.33

#### resin pocket

lens-shaped cavity in timber containing, or that has contained, a resin [EN 844-9:1997]

**3.34****gum vein**

vein in timber containing, or that has contained, a resinous substance

**3.35****bore hole**

hole or tunnel in timber caused by insects [EN 844-11:1998]

**3.36****pith**

zone within the first growth ring that consists chiefly of soft tissue [EN 844-7:1997]

**3.37****creosote**

oil distilled from coal tar

**3.38****tropical hardwood**

hardwood grown in the tropics and all other southern hemisphere forests

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