

# SVENSK STANDARD

## SS-EN 13145+A1:2011



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**Järnvägar – Spår – Sliprar av trä för linje och spårväxlar**

**Railway applications – Track – Wood sleepers and bearers**

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Denna standard ersätter SS-EN 13145, utgåva 1.

The European Standard EN 13145:2001+A1:2011 has the status of a Swedish Standard. This document contains the official version of EN 13145:2001+A1:2011.

This standard supersedes the Swedish Standard SS-EN 13145, edition 1.

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EUROPEAN STANDARD

**EN 13145:2001+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2011

ICS 79.040; 93.100

Supersedes EN 13145:2001

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 and includes Amendment 1 approved by CEN on 6 September 2011.

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



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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

Foreword.....	3
<b>1 Scope .....</b>	<b>4</b>
<b>2 Normative references .....</b>	<b>4</b>
<b>3 Terms and definitions .....</b>	<b>4</b>
<b>4 Species .....</b>	<b>9</b>
<b>5 Forms, dimensions and tolerances .....</b>	<b>9</b>
5.1 Forms .....	9
5.1.1 Sleepers .....	9
5.1.2 Bearers.....	10
5.2 Dimensions.....	10
5.3 Tolerances .....	10
<b>6 Defects and quality features.....</b>	<b>11</b>
6.1 Raw materials.....	11
6.2 Untreated sleepers and bearers .....	11
<b>7 Durability and preservation .....</b>	<b>14</b>
7.1 Durability .....	14
7.2 Preservation .....	15
7.2.1 Sleepers and bearers .....	15
7.2.2 Wood preservative.....	15
7.2.3 Penetration .....	15
7.2.4 Retention .....	15
<b>8 Factory production control.....</b>	<b>16</b>
<b>9 Marking .....</b>	<b>16</b>
<b>Annex A (informative) Most commonly used dimensions for sleepers and bearers .....</b>	<b>17</b>
<b>Annex ZA (informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC  .....</b>	<b>19</b>

## Foreword

This document (EN 13145:2001+A1:2011) 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 April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

**A1** This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. **A1**

This document includes Amendment 1, approved by CEN on 2011-09-06.

This document supersedes EN 13145:2001.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

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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**

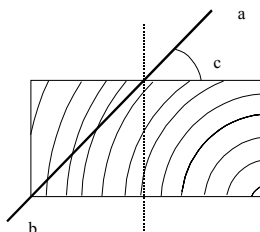
**grain**

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° 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]

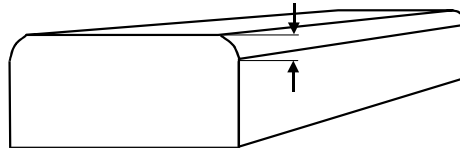


Figure 2 - Wane

**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]

**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**

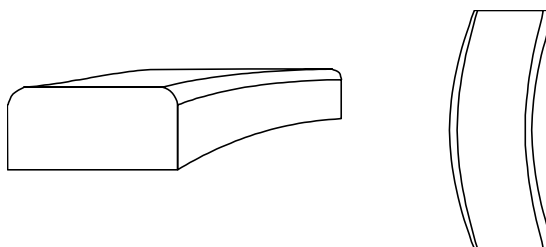
**ring shake**

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]



top view

Figure 3 - Spring