



**SLOVENSKI STANDARD**  
**SIST EN 12510:2002**  
**01-julij-2002**

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Wood poles for overhead lines - Strength grading criteria

Holzmaße für Freileitungen - Kriterien zur Festigkeitssortierung

Poteaux en bois pour lignes aériennes - Critères de classement de la résistance

**Ta slovenski standard je istoveten z: EN 12510:2001**

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**ICS:**

29.240.20	Daljnovodi	Power transmission and distribution lines
79.080	Polizdelki iz lesa	Semi-manufactures of timber

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12510**

December 2001

ICS 29.240.20; 79.080

English version

## Wood poles for overhead lines - Strength grading criteria

Poteaux en bois pour lignes aériennes - Critères de classement de la résistance

Holzmaße für Freileitungen - Kriterien zur Festigkeitssortierung

This European Standard was approved by CEN on 18 October 2001.

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 Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 124 "Structural timber", the secretariat of which is held by DS.

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of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

This standard includes an informative annex A.

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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**EN 12510:2001 (E)****Introduction**

This standard is one of five standards covering requirements for visual or machine grading, test methods, determination of characteristic values, methods of specifying durability and sizes.

There are many different visual strength grading rules for timber in use in Europe. These have come into existence to allow for:

- different species or groups of species;
- geographic origin;
- different dimensional requirements;
- varying requirements for different uses;
- the quality of material available;
- historic influences or traditions.

**STANDARD PREVIEW**

Because of the diversity of existing standards for wood poles for overhead lines in use in different countries it is currently impossible to lay down a single set of acceptable visual grading rules for all member states.

This standard on visual grading rules therefore gives basic principles which shall be followed when drawing up regional, national, local or buyer requirements for some characteristics and sets limits for others.

In laying down visual grading rules two main factors should be borne in mind:

- they should clearly define and limit the strength affecting characteristics in poles so that buyers shall have a very high confidence that poles supplied meet the required characteristic strength value;
- the rules and the text should be easily understood and be capable of implementation by grading personnel.

Examples of standards currently in use and which meet these principles are listed in annex A (informative).

## 1 Scope

This European Standard specifies the requirements for the handling and storage and the characteristics for inclusion in regional/national/local/buyer standards of visual strength grading of softwood and hardwood poles. It also specifies the marking requirements.

This standard identifies the characteristics for which, as a minimum, limits shall be given in visual grading standards or specifications.

This standard applies to both softwood and hardwood poles.

This standard covers only single poles under cantilever and/or compression loading. For example, this standard does not cover poles used as beams.

The provision of poles for use in any overhead line or cable infrastructure shall take into account a range of factors not covered by this standard which will necessitate the specification by the end user of complementary and synonymous attributes to those defined in this standard. This refers to requirements for a number of factors including safety, overhead plant, handling, fittings, installation machinery and working practices including climbing.

## 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).

[SIST EN 12510:2002](#)

prEN 12509, *Wood poles for overhead lines - Test methods - Determination of modulus of elasticity, bending strength, density and moisture content* [858fbc/sist-en-12510-2002](#)

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions - Part 1: Country codes*.

## 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

### 3.1

#### **compression wood**

reaction wood formed typically on lower sides of branches and of leaning or crooked stems of softwood trees

### 3.2

#### **cracks**

separation of wood fibres across the grain. Such breaks may be due to internal strains resulting from unequal longitudinal shrinkage, fibres being crinkled by compression or other external forces

### 3.3

#### **decay**

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 12510:2001 (E)

- 3.4**  
**double sweep**  
sweep characterized by two or more bends in one or several planes
- 3.5**  
**grain detector**  
device for detecting the angle of grain in timber
- 3.6**  
**growth rate**  
rate of growth is the average number of growth rings per 25 mm
- 3.7**  
**heart shake**  
radial end shake originating at the pith
- 3.8**  
**bark pocket**  
bark that is partly or wholly enclosed in the wood
- 3.9**  
**included sapwood**  
presence in the heartwood of a complete or incomplete ring having the colour and the properties of sapwood
- 3.10**  
**knot**  
portion of a branch embedded in wood
- 3.11**  
**knot cluster**  
knots located so that no grain recovery is evident between adjacent knots
- 3.12**  
**knot diameter**  
diameter of a knot is the dimension of the knot measured on the surface of the pole and perpendicular to the axis of the pole. The diameter takes the entire knot into account, including the sapwood
- 3.13**  
**maximum diameter**  
maximum diameter of the pole at the section of measurement
- 3.14**  
**minimum diameter**  
minimum diameter of the pole at the section of measurement
- 3.15**  
**nominal diameter**  
a) theoretical diameter for poles with 5 % or less ovality;  
b) minimum diameter for poles with greater than 5 % ovality
- 3.16**  
**ovality**  
difference between the maximum and minimum diameters at a cross-section expressed as a percentage of the minimum diameter
- 3.17**  
**pole**  
long round timber for use in a free standing application

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**3.18****pole butt**

lowermost point of the thicker end of the pole

**3.19****pole tip**

uppermost point of the narrow end of the pole

**3.20****reaction wood**

wood with distinctive anatomical characteristic, formed typically in parts of leaning or crooked stems and in branches when the tree tends to restore the original position, if this has been disturbed

**3.21****rindgall**

surface wound that has been partially enclosed by the growth of a tree

**3.22****ring shake**

fissure following the line of a growth ring

**3.23****scribe**

cranked rod with a swivel handle and a needle at the tip, set to a slight trailing angle. Used as a grain detector by pressing the needle into the timber and drawing it across the surface in the apparent direction of the grain

**3.24****fissure**

longitudinal separation of fibres

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**3.25****short crook (local deflection)**

natural deviation of the axis of the pole occurring on a length less than 1,5 m

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**3.26****simple sweep**

sweep characterized by one bend only

**3.27****slope of grain**

divergence of the direction of the fibres from the longitudinal axis of the piece

**3.28****star shake**

two or more heart shakes

**3.29****sweep**

deviation of the longitudinal axis of round timber from a straight line

**3.30****taper**

gradual reduction in diameter of a stem along its height or round timber along its length

**3.31****tension wood**

reaction wood formed typically on upper sides of branches and of leaning or crooked stems of hardwood trees