



**SLOVENSKI STANDARD**  
**SIST EN 1059:2000**  
**01-april-2000**

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Číslo štandardu: SIST EN 1059:2000  
Název štandardu: Lesné konštrukcie

Timber structures - Product requirements for prefabricated trusses using punched metal plate fasteners

Holzbauwerke - Produktanforderungen an vorgefertigte Fachwerkträger mit Nagelplatten

Structures en bois - Exigences de produits pour fermes industrialisées utilisant des connecteurs à plaque métallique emboutie

Ta slovenski standard je istoveten z: **EN 1059:1999**

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**ICS:**

91.080.20      Lesene konstrukcije      Timber structures

**SIST EN 1059:2000**      en

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 1059

July 1999

ICS 91.080.20

English version

## Timber structures - Product requirements for prefabricated trusses using punched metal plate fasteners

Structures en bois - Exigences de produits pour fermes industrialisées utilisant des connecteurs à plaque métallique emboutie

Holzbauwerke - Produktanforderungen an vorgefertigte Fachwerkträger mit Nagelplatten

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

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ALTERNATIVE ANTI-INCENDIO  
COPERTURE PER TRUSSIA IN LEGNAME  
PRODOTTE IN ITALIA  
ANALISI

LA COLLEZIONE DI TRUSSIA IN LEGNAME

## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 124 "Timber structures", 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of an identical text or by endorsement, at the latest by January 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

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.

## Introduction

This standard covers product requirements for prefabricated trusses made using punched metal plate fasteners.

The main objective of this standard is to ensure that these trusses will perform in accordance with the design requirements.

References made in this standard to prefabricated trusses also includes beams and girders

### 1. Scope

This European Standard specifies product requirements for trusses assembled using punched metal plate fasteners.

### 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.

EN 336	Structural timber - Coniferous and poplar - Sizes, permissible deviations.
EN 385	Finger jointed structural timber - Performance requirements and minimum production requirements.
EN 518	Structural timber - Grading - Requirements for visual strength grading standards.
EN 519	Structural timber - Grading - Requirements for machine strength graded timber and grading machines.
EN 844-3	Round and sawn timber - Terminology - Part 3: General terms relating to sawn timber.
EN 844-9	Round and sawn timber - Terminology - Part 9: Terms relating to features of sawn timber.
prEN 1075	Timber structures - Test methods - Joints made of punched metal plate fasteners.
EN 1310	Round and sawn timber - Method of measurement of features.
EN 10088-2	Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip for general purposes
EN 10147	Continuously hot-dip zinc coated structural steel sheet and strip - Technical delivery conditions.

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### 3. Definitions

For the purposes of this standard, the following definitions apply. [SIST EN 1059:2000  
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- 3.1 anchorage area:** The surface area of timber occupied by the plate projections in any particular member.
- 3.2 common production end:** One (consistent) end, with respect to the production jig, of a batch of like trusses.
- 3.3 dead knot:** On the surface being considered, a knot that is intergrown with the surrounding wood for less than one quarter of the cross-sectional perimeter, as defined in EN 844-9.
- 3.4 effective thickness:** The target thickness as defined in EN 336 minus any wane present on the edge being considered.
- 3.5 internal bracing:** Restraint to prevent lateral buckling of a compression member.
- 3.6 live knot:** On the surface being considered, a knot that is intergrown with the surrounding wood for at least one quarter of the cross-sectional perimeter as defined in EN 844-9.
- 3.7 plate projection:** Plate tooth, plate nail or burst used for the purpose of transferring forces between members.
- 3.8 punched metal plate fastener:** Metal plate having integral projections punched out in one direction perpendicular to the base of the plate, being used to join two or more pieces of timber of the same thickness in the same plane.

## 4. Symbols

None

## 5. Material Requirements

### 5.1 Timber

#### 5.1.1 Strength.

Timber shall be strength graded using grading standards and methods complying with EN 518 or EN 519.

#### 5.1.2 Permissible geometric defects.

In addition to the specified grade requirements, timber shall meet the following criteria for spring, bow, twist and cup as defined in EN 844-3 and measured in accordance with EN 1310 :

Spring:	4 mm maximum per 2 m length
Bow:	10 mm maximum per 2 m length
Twist:	1 mm maximum per 25 mm width per 2 m length
Cup:	2 mm maximum per 100 mm of face

#### 5.1.3 Finger jointed timber.

Finger joints shall meet the requirements of EN 385 for the appropriate service class.

#### 5.1.4 Protection.

If required, timber shall be treated with a preservative in accordance with the requirements of the product specification. The preservative treatment shall be compatible with the fastener's treatment.

### 5.2 Punched metal plate fasteners

#### 5.2.1 Strength.

Characteristic strength properties for punched metal plate fasteners shall be determined from tests undertaken in accordance with the requirements of prEN 1075.

#### 5.2.2 Marking.

Punched metal plate fasteners shall bear a mark which readily identifies the producer or supplier and type of plate.

#### 5.2.3 Protection.

Punched metal plate fasteners shall possess a minimum corrosion protection specification equivalent to a hot-dip zinc coating of Z275 to EN 10147, or shall be manufactured from stainless steel to EN 10088-2. No further coating of the fasteners is required after punching.

## 6. Product requirements

### 6.1 Truss Members

#### 6.1.1 Timber Sizes.

Member size tolerances shall be in accordance with tolerance class 2 given in EN 336.

Target sizes shall be not less than:-

- Thickness (width), all members: 35 mm
- Depth, external (chord) members: 70 mm
- Depth, internal (web or diagonal) members: 58 mm

The effective thickness (width), as defined in 3.4, of the outer face of any chord member shall not be less than 35 mm.

#### 6.1.2 Wane.

Wane shall not occur within the area of any jointing device or within support areas.

#### 6.1.3 Joint gaps.

The maximum gap between members at the time of fabrication shall not exceed 3 mm and shall average no more than 1,5 mm.

#### 6.1.4 Moisture Content.

The maximum moisture content of the timber at the time of fabrication shall not exceed 22%.

#### 6.1.5 Dimensional Accuracy.

The overall horizontal and vertical dimensions of the truss shall not deviate from the specified dimensions by more than the following tolerances:

- Up to 10 m: 10 mm
- More than 10 m: 1 mm for each metre

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The dimensional variation between trusses within the same batch shall not differ by more than 10 mm.

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#### 6.1.6 Camber.

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At the time of fabrication camber shall be within a tolerance of 25% of the camber specified in the design.

### 6.2 Truss Connections

#### 6.2.1 Live knots.

Live knots are permitted within the anchorage area, provided that the plate projections are satisfactorily embedded without visible distortion of the fasteners or splitting of the timber outside the knot.

#### 6.2.2 Dead knots.

Where a dead knot, knot hole, or fissure occurs within the anchorage area, the number of effective plate projections, disregarding those in the dead knot, knot hole, or on the line of the fissure shall be in accordance with that specified in the design. Fissures which do not extend more than 50 mm from the tooth, burst, or plate nail which apparently caused them, shall be disregarded.

#### 6.2.3 Fastener positioning.

Fasteners shall not be misplaced by more than 5 mm in any direction.

#### 6.2.4 Fastener installation.

The plate projections shall be inserted perpendicular to the embedment surface of the timber and the plate surface shall be free of distortion. Any gap between the timber surface and the underside of a punched metal plate fastener shall not exceed 1 mm and shall not occur over more than 25% of the anchorage area in any member.