Prefabricated timber formwork beams - Requirements, classification and assessment

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

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Käsitlusala: This European Standard specifies classification, requirements and assessment procedures for prefabricated timber formwork beams as defined in 3.2 for temporary use in construction works	**Scope:** This European Standard specifies classification, requirements and assessment procedures for prefabricated timber formwork beams as defined in 3.2 for temporary use in construction works

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Võtmesõnad: classifications, sample surveys, site equipment, specifications, strength of materia, structural timber, structures, supports, surveillance (approval), tensile strength, timber structures, weather boards, verification, wood, woodbased sheet materials, wooden boards

EUROPEAN STANDARD

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Prefabricated timber formwork beams - Requirements, classification and assessment

Poutrelles de coffrage préfabriquées en bois - Exigences, classification et évaluation

Industriell gefertigte Schalungsträger aus Holz - Anforderungen, Klassifizierung und Nachweis

This European Standard was approved by CEN on 29 May 2002.

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

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Contents

Foreword

This document EN 13377:2002 has been prepared by Technical Committee CEN/TC 53 "Temporary works equipment", 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of an identical text or by endorsement, at the latest by February 2003, and conflicting national standards shall be withdrawn at the latest by February 2003.

The annexes A, B, C and D are normative, the annexes E and F are informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard is a product standard primarily for use in the field of falsework and formwork.

Formwork beams should be made so that the properties specified in clause 5 are retained under site conditions such as exposure to water, water vapour and cement.

Whilst this European Standard deals with the two most common types of prefabricated timber formwork beams in use it is not intended to prevent development of other types of formwork beams made of timber and wood based materials.

Research and development in the field of panel materials is continuous. Even if formwork beams are made with materials which do not conform with this European Standard, the principles of this European Standard should be considered in the design and assessment of such beams.

To obtain test results and their statistical evaluation annexes A and B respectively can be used. The values for strength and stiffness given in Tables 1 and 2 have been established from experience. To use these values, the partial safety factor for actions, γ_F, should be taken into account as well as the partial safety factor for the material, γ_M, and modification factor, k_{mod}, for timber, (see ENV 1995-1-1). Annex E gives some guidance. For more information on timber see the Bibliography in annex F.

1 Scope

This European Standard specifies classification, requirements and assessment procedures for prefabricated timber formwork beams. It also gives information on production control requirements.

Prefabricated timber formwork beams are intended for use in falsework and formwork and to be loaded in the direction of the beam depth.

They are of glued I-shaped construction consisting of two identical flange members of solid timber connected by a single web of wood based material with beam depths of 160 mm, 200 mm and 240 mm, or connected by or a lattice of solid timber members with a beam depth of 240 mm beam depth.

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 301, *Adhesives, phenolic and aminoplastic for load bearing timber structures — Classification and performance requirements.*

EN 310, *Wood-based panels – Determination of modulus of elasticity in bending and of bending strength.*

EN 317, *Particleboards and fibreboards — Determination of swelling in thickness after immersion in water.*

EN 319, *Particleboards and fibreboards — Determination of tensile strength perpendicular to the plane of the board.*

EN 323, *Wood based panels — Determination of density.*

EN 338, *Structural timber — Strength classes.*

EN 385:1995, *Finger jointed structural timber — Performance requirements and minimum production requirements.*

EN 408, *Timber structures —Solid timber and glued laminated timber — Determinations of some physical and mechanical properties.*

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 636-3, *Plywood — Specifications — Part 3: Requirements for plywood for use in exterior conditions.*

ENV 1995-1-1:1993, *EUROCODE 5: Design of timber structures — Part 1-1: General rules and rules for buildings.*

EN 13183-2, *Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method.*

prEN 13353, *Solid-wood-panels — Requirements.*

prEN 13354, *Solid-wood-panels — Bonding quality — Test method.*

3 Terms, definitions and symbols

3.1 Terms and definitions

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

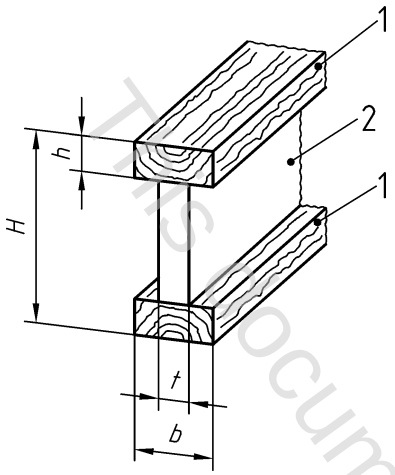
3.1.1
formwork beam
beam in formwork construction and loaded in the direction of the beam depth

3.1.2
timber formwork beam
glued prefabricated I-shaped beam consisting of two identical flange members of solid timber connected by a web of wood based panel material or a lattice of solid timber members

3.1.3
panel web beam
timber formwork beam in which the web is made of a wood based panel material (see Figure 1a))

3.1.4
lattice web beam
timber formwork beam made with lattice struts (see Figure 1b)).

3.1.5
lattice strut
member, positioned diagonally or at right angles to the flange, which connects two parallel flange members (see Figure 1b))



Key

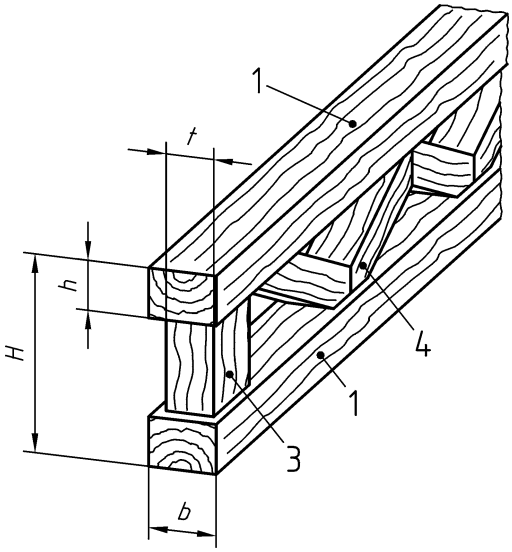
H Depth of beam

b Flange width

h Depth (thickness) of flange

t Thickness of web

a) Panel web beam (type P)



Key

1 Flange

2 Panel web

3 Vertical strut

4 Diagonal strut

b) Lattice web beam (type L)

Figure 1 — Timber formwork beams
General construction and symbols used for the dimensions

3.2 Symbols

The principal symbols used in this standard are listed below: