

**Eurocode 3: Design of steel structures**  
**Part 1-3: General rules**  
**Supplementary rules for cold-formed members and**  
**sheeting**

**Eurokoodeks 3: Teraskonstruktsioonide projekteerimine**  
**Osa 1-3: Üldreeglid**  
**ja lisareeglid külmvormitud profiilidele ja profiilplekile**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 1993-1-3:2006+NA:2008 sisaldab Euroopa standardi EN 1993-1-3:2006 identset ingliskeelset teksti ning rahvuslikku lisa NA:2008.</p> <p>Standard on jõustunud sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 25.10.2006.</p> <p>Standard on kättesaadav Eesti Standardikeskusest.</p>	<p>This Estonian Standard EVS-EN 1993-1-3:2006+NA:2008 consists of the identical English text of the European Standard EN 1993-1-3:2006 and the Estonian National Annex NA:2008.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.</p> <p>Date of Availability of the European Standard is 25.10.2006.</p> <p>This standard is available from the Estonian Centre for Standardisation.</p>
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English Version

**Eurocode 3 - Design of steel structures - Part 1-3: General rules  
- Supplementary rules for cold-formed members and sheeting**

Eurocode 3 - Calcul des structures en acier - Partie 1-3:  
Règles générales - Règles supplémentaires pour les  
profilés et plaques à parois minces formés à froid

Eurocode 3 - Bemessung und Konstruktion von  
Stahlbauten - Teil 1-3: Allgemeine Regeln - Ergänzende  
Regeln für kaltgeformte dünnwandige Bauteile und Bleche

This European Standard was approved by CEN on 16 January 2006.

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## Foreword

This European Standard EN 1993-1-3, Eurocode 3: Design of steel structures: Part 1-3 General rules – Supplementary rules for cold formed members and sheeting, has been prepared by Technical Committee CEN/TC250 « Structural Eurocodes », the Secretariat of which is held by BSI. CEN/TC250 is responsible for all Structural Eurocodes.

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of an identical text or by endorsement, at the latest by April 2007, and conflicting National Standards shall be withdrawn at latest by March 2010.

This Eurocode supersedes ENV 1993-1-3.

According to the CEN-CENELEC Internal Regulations, the National Standard Organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## National annex for EN 1993-1-3

This standard gives alternative procedures, values and recommendations for classes with notes indicating where national choices may have to be made. Therefore the National Standard implementing EN 1993-1-3 should have a National Annex containing all Nationally Determined Parameters to be used for the design of steel structures to be constructed in the relevant country.

National choice is allowed in EN 1993-1-3 through clauses:

- 2(3)P
- 2(5)
- 3.1(3) Note 1 and Note 2
- 3.2.4(1)
- 5.3(4)
- 8.3(5)
- 8.3(13), Table 8.1
- 8.3(13), Table 8.2
- 8.3(13), Table 8.3
- 8.3(13), Table 8.4
- 8.4(5)
- 8.5.1(4)
- 9(2)
- 10.1.1(1)
- 10.1.4.2(1)
- A.1(1), NOTE 2
- A.1(1), NOTE 3
- A.6.4(4)
- E(1)

# 1 Introduction

## 1.1 Scope

(1) EN 1993-1-3 gives design requirements for cold-formed thin gauge members and sheeting. It applies to cold-formed steel products made from coated or uncoated thin gauge hot or cold rolled sheet or strip, that have been cold-formed by such processes as cold-rolled forming or press-braking. It may also be used for the design of profiled steel sheeting for composite steel and concrete slabs at the construction stage, see EN 1994. The execution of steel structures made of cold-formed thin gauge members and sheeting is covered in EN 1090.

**NOTE:** The rules in this part complement the rules in other parts of EN 1993-1.

- (2) Methods are also given for stressed-skin design using steel sheeting as a structural diaphragm.
- (3) This part does not apply to cold-formed circular and rectangular structural hollow sections supplied to EN 10219, for which reference should be made to EN 1993-1-1 and EN 1993-1-8.
- (4) EN 1993-1-3 gives methods for design by calculation and for design assisted by testing. The methods for design by calculation apply only within stated ranges of material properties and geometrical proportions for which sufficient experience and test evidence is available. These limitations do not apply to design assisted by testing.
- (5) EN 1993-1-3 does not cover load arrangement for testing for loads during execution and maintenance.
- (6) The calculation rules given in this standard are only valid if the tolerances of the cold formed members comply with EN 1090-2

## 1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this European Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

However, parties to agreements based on this European Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

- EN 1993      *Eurocode 3 – Design of steel structures*  
                 Part 1-1 to part 1-12
- EN 10002      *Metallic materials - Tensile testing:*  
                 Part 1:      *Method of test (at ambient temperature);*
- EN 10025-1    *Hot-rolled products of structural steels - Part 1: General delivery conditions;*
- EN 10025-2    *Hot-rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels;*
- EN 10025-3    *Hot-rolled products of structural steels - Part 3: Technical delivery conditions for normalized / normalized rolled weldable fine grain structural steels;*
- EN 10025-4    *Hot-rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels;*
- EN 10025-5    *Hot-rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance;*
- EN 10143      *Continuously hot-dip metal coated steel sheet and strip - Tolerances on dimensions and shape;*
- EN 10149      *Hot rolled flat products made of high yield strength steels for cold-forming:*  
                 Part 2:      *Delivery conditions for normalized/normalized rolled steels;*  
                 Part 3:      *Delivery conditions for thermomechanical rolled steels;*
- EN 10204      *Metallic products. Types of inspection documents (includes amendment A 1:1995);*
- EN 10268      *Cold-rolled flat products made of high yield strength micro-alloyed steels for cold forming - General delivery conditions;*

## EN 1993-1-3: 2006 (E)

- EN 10292 *Continuously hot-dip coated strip and sheet of steels with higher yield strength for cold forming - Technical delivery conditions;*
- EN 10326 *Continuously hot-dip coated strip and sheet of structural steels - Technical delivery conditions;*
- EN 10327 *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming - Technical delivery conditions;*
- EN-ISO 12944-2 *Paints and varishes. Corrosion protection of steel structures by protective paint systems. Part 2: Classification of environments (ISO 12944-2:1998);*
- EN 1090-2 *Execution of steel structures and aluminium structures Part 2: Technical requirements for steel structures;*
- EN 1994 *Eurocode 4: Design of composite steel and concrete structures;*
- EN ISO 1478 *Tapping screws thread;*
- EN ISO 1479 *Hexagon head tapping screws;*
- EN ISO 2702 *Heat-treated steel tapping screws - Mechanical properties;*
- EN ISO 7049 *Cross recessed pan head tapping screws;*
- EN ISO 10684 *Fasteners – hot deep galvanized coatings*
- ISO 4997 *Cold reduced steel sheet of structural quality;*
- EN 508-1 *Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 1: Steel;*
- FEM 10.2.02 *Federation Europeenne de la manutention, Secion X, Equipment et procedes de stockage, FEM 10.2.02, The design of static steel pallet racking, Racking design code, April 2001 Version 1.02.*

### 1.3 Terms and definitions

Supplementary to EN 1993-1-1, for the purposes of this Part 1-3 of EN 1993, the following terms and definitions apply:

#### 1.3.1

##### **basic material**

The flat sheet steel material out of which cold-formed sections and profiled sheets are made by cold-forming.

#### 1.3.2

##### **basic yield strength**

The tensile yield strength of the basic material.

#### 1.3.3

##### **diaphragm action**

Structural behaviour involving in-plane shear in the sheeting.

#### 1.3.4

##### **liner tray**

Profiled sheet with large lipped edge stiffeners, suitable for interlocking with adjacent liner trays to form a plane of ribbed sheeting that is capable of supporting a parallel plane of profiled sheeting spanning perpendicular to the span of the liner trays.

#### 1.3.5

##### **partial restraint**

Restriction of the lateral or rotational movement, or the torsional or warping deformation, of a member or element, that increases its buckling resistance in a similar way to a spring support, but to a lesser extent than a rigid support.