
Izdelava in montaža jeklenih konstrukcij – 6. del: Dopolnilna pravila za nerjavna jekla (prevzet ENV 1090-6:2000 z metodo platnice)

Execution of steel structures - Part 6: Supplementary rules for stainless steel

Exécution des structures en acier - Partie 6: Règles supplémentaires pour les aciers inoxydables

Ausführung von Tragwerken aus Stahl - Teil 6: Ergänzende Regeln für rostfreien Stahl

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Deskriptorji: jeklene konstrukcije, nerjavna jekla, materiali, izdelava, varjenje, stikovanje, geometrijska odstopanja, zaščita, pregledi, preskusi

ICS 77.140.20; 91.080.10

Referenčna številka
SIST ENV 1090-6:2001 ((sl),en)

Nadaljevanje na straneh od II do IV in od 1 do 39

NACIONALNI UVOD

Predstandard SIST ENV 1090-6 ((sl),en), Izdelava in montaža jeklenih konstrukcij - 6. del: Dopolnilna pravila za nerjavna jekla, prva izdaja, 2001, ima status slovenskega predstandarda in je z metodo platnice prevzet evropski predstandard ENV 1090-6 (en), Execution of steel structures - Part 6: Supplementary rules for stainless steel, January 2000.

NACIONALNI PREDGOVOR

Evropski predstandard ENV 1090-6:2000 je pripravil tehnični odbor Evropskega komiteja za standardizacijo CEN/TC 135 Izdelava in montaža jeklenih konstrukcij.

Odločitev za prevzem tega predstandarda po metodi platnice je sprejela delovna skupina USM/TC KON/WG 3 Jeklene konstrukcije, ki je pripravila tudi nacionalni dokument za uporabo v Sloveniji, potrdil pa tehnični odbor USM/TC KON Konstrukcije.

Ta slovenski predstandard se lahko uporablja samo v skladu z nacionalnim dokumentom, ki je sestavni del SIST ENV 1090-6:2001.

Ta slovenski predstandard je dne 2000-12-04 odobril direktor USM.

Rok veljavnosti tega predstandarda je do izdaje evropskega standarda EN 1090-6.

ZVEZE S STANDARDI

S prevzemom tega evropskega predstandarda veljajo za naslednje zveze:

SIST ENV 1090-1:1999 ((sl),en) Izdelava in montaža jeklenih konstrukcij – 1. del: Splošna pravila in pravila za stavbe

SIST ENV 1992-1-1:1999 ((sl),en) Eurocode 2: Projektiranje betonskih konstrukcij – Del 1-1: Splošna pravila in pravila za stavbe

SIST ENV 1993-1-1:1996 ((sl),en) Eurocode 3: Projektiranje jeklenih konstrukcij - Del 1-1: Splošna pravila in pravila za stavbe

SIST ENV 1993-1-4:2001 ((sl),en) Eurocode 3: Projektiranje jeklenih konstrukcij – Del 1-4: Splošna pravila – Dopolnilna pravila za nerjavna jekla

SIST ENV 1994-1-1:1998 ((sl),en) Eurocode 4: Projektiranje sovprežnih konstrukcij – Del 1-1: Splošna pravila in pravila za stavbe

OPOMBI

- Povsod, kjer se v besedilu predstandarda uporablja izraz "evropski predstandard", v SIST ENV 1090-6:2001 to pomeni "slovenski predstandard".
- Nacionalni uvod in nacionalni predgovor nista sestavni del predstandarda.

VSEBINA

Stran

Nacionalni dokument za uporabo v Sloveniji IV
ENV 1090-6:2000 1

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Nacionalni dokument za uporabo v Sloveniji

Pri referenčnih standardih za vijake je potrebno upoštevati določila Nacionalnega dokumenta za uporabo v Sloveniji za SIST ENV 1090-1:1999.

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English version

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This European Prestandard (ENV) was approved by CEN on 11 April 1999 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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FOREWORD

This European Prestandard has been prepared by Technical Committee CEN/TC 135 "Execution of steel structures and aluminium structures", the secretariat of which is held by NSF.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

INTRODUCTION

Addition:

(104) This European Prestandard ENV 1090-6 is a supplement to ENV 1090-1: Execution of Steel Structures - General rules and rules for buildings and specifies particular requirements for the execution of stainless steel structures designed to ENV 1993-1-4.

(105) This European Prestandard presupposes that the work is performed in accordance with the requirements of ENV 1090-1, as varied by this supplement.

(106) In this European Prestandard, the following terms are used:

Addition: means that the text applies in addition to the corresponding clause or subclause of ENV 1090-1 without any amendments to the existing text of ENV 1090-1;

Modification: means that the text shall modify the corresponding text of ENV 1090-1 as appropriate.

(107) An addition is identified by the subsequent number to the last subclause respective paragraph number of ENV 1090-1 added to 100.

(108) If a sub-clause of ENV 1090-1 is not mentioned in this ENV 1090-6 that sub-clause shall apply.

(109) The supplementary rules of ENV 1090-3 do not apply to stainless steels.

(110) The supplementary rules of ENV 1090-4 apply to hollow section lattice structures executed using stainless steel.

1 SCOPE

Modification:

(1) This Part 6 of European Prestandard ENV 1090 specifies requirements for execution of structural steelwork produced from stainless steel products.

(2) This Part of ENV 1090 gives detailed requirements for structures that are not significantly susceptible to fatigue. The definition of structures which are not significantly susceptible to fatigue is given in ENV 1993-1-1.

Addition:

(106) This Part of ENV 1090 applies to austenitic and austenitic-ferritic stainless steels. In addition, non-welded threaded bars of precipitation hardened stainless steel are covered. It does not apply to ferritic type stainless steels.

NOTE: It is expected that a later version of this Part of ENV 1090 will contain appropriate provisions for other stainless steels.

(107) This standard gives details of surface finish specification requirements.

2 NORMATIVE REFERENCES

This clause of ENV 1090-1 is applicable except as follows

Addition:

prEN 508-3	Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet – Part 3: Stainless steel
EN 571-1	Non-destructive testing - Penetrant testing – Part 1: General principles
EN 970:1997	Non-destructive examination of fusion welding - Visual examination
EN 1011-1:1998	Requirements for fusion welding of metallic materials Part 1: General
prEN 1011-3	Requirements for fusion welding of metallic materials Part 3: Stainless steels
ENV 1090-1:1996	Execution of steel structures - Part 1: General rules and rules for buildings
ENV 1090-2:1998	Execution of steel structures - Part 2: Supplementary rules for cold formed thin gauge components and sheeting
ENV 1090-3:1997	Execution of steel structures – Part 3: Supplementary rules for high yield strength steels
ENV 1090-4:1997	Execution of steel structures - Part 4: Supplementary rules for hollow section lattice structures
EN 1435:1997	Non-destructive examination of welds - Radiographic examination of welded joints
prEN 1711:	Non-destructive examination of welds – Eddy current examination by phase discrimination method
ENV 1993-1-3:1992	Eurocode 3: Design of steel structures - Part 1-3: General rules - Supplementary rules for cold formed thin gauge members and sheeting
ENV 1993-1-4:1996	Eurocode 3: Design of steel structures - Part 1-4: General rules - Supplementary rules for stainless steels
EN-ISO 3506-1:1997	Mechanical properties of corrosion-resistant stainless-steel fasteners – Part 1: Bolts, screws and studs
EN-ISO 3506-2:1997	Mechanical properties of corrosion-resistant stainless-steel fasteners – Part 2: Nuts
EN-ISO 3506-3:1997	Mechanical properties of corrosion-resistant stainless-steel fasteners – Part 3: Set screws and similar fasteners not under tensile stress
prEN 10028-7	Flat products made of steels for pressure purposes - Stainless steels

EN 10048:1997	Tolerances on dimensions and shape for hot rolled narrow steel strip
EN 10088-2:1995	Stainless steel - Part 2: Technical delivery conditions for steel/plate and strip for general purposes
EN 10088-3:1995	Stainless steel - Part 3: Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes
prEN 10162	Cold rolled sections - Technical delivery conditions, dimensional and cross-sectional tolerances
prEN 10216-5	Seamless steel tubes for pressure purposes - technical delivery conditions Part 5: Stainless steels
prEN 10217-7	Welded steel tubes for pressure purposes - technical delivery conditions Part 7: Stainless steels
EN 10258:1997	Cold rolled stainless steel and narrow strip and cut lengths - Tolerances on dimension and shape
EN 10259:1997	Cold rolled stainless and heat-resisting steel wide strip and plate/sheet – tolerances on dimension and shape
prEN 10272	Hot rolled stainless steel bar for pressure purposes
EN 12062:1997	Non-destructive examination of welds – General rules for metallic materials
EN-ISO 14555:1999	Welding – Arc stud welding of metallic materials
prEN-ISO 15620	Welding – Friction welding of metallic materials
EURONORM 17 (1970)	Wire rod in general purpose non-alloy steel for cold drawing or forming; tolerances, dimensions
EURONORM 58 (1978)	Hot rolled flats for general purposes
EURONORM 59 (1978)	Hot rolled square bars for general purposes
EURONORM 60 (1977)	Hot rolled round bars for general purposes
EURONORM 61 (1982)	Hot rolled hexagons
EURONORM 65 (1980)	Hot rolled round bars for screws and rivets
ISO 1127:1997	Stainless steel tubes - Dimensions, tolerances and conventional masses per unit length
ISO 3269:1988	Fasteners - Acceptance inspection

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3 DEFINITIONS

This clause of ENV 1090-1 is applicable except as follows:

- 3.118: cold forming: The process of forming steel sheet or strip into a component with open or closed cross section, or into a profiled sheet, by either roll forming, pressing or folding.
- 3.119: construction classes: See ENV 1993-1-3
- 3.120: fabrication: All activities performed to produce finished steel components including cold formed thin gauge components and sheeting ready for assembly on site.
- 3.121: fabrication tolerance: Permitted variation in the size of a dimension of a component resulting from component manufacture
- 3.122: structural sheeting: Profiled steel sheets produced by cold-forming and used in such a manner as to form either:
- a) a stressed skin shear diaphragm;
 - b) a bracing system offering structural restraint to other components or assemblies of components;
 - c) part of a cladding system intended to offer access to roofs for the purpose of maintenance and repair.
- 3.123: thin gauge components: Open or closed section structural components with a cross section bounded by either free edges or by bends produced by cold forming sheet or strip steel.

NOTE: Hollow section components may be made either:

- a) by joining two previously formed open sections by continuous welding, or
- b) from a single flat strip by forming the corners to make a box and continuously welding the longitudinal seam. The flat strip may also be work hardened before forming as stated in the project specification.

NOTE: The definitions 3.118, 3.119, 3.120, 3.122 and 3.123 are identical to the definitions in ENV 1090-2.

4 DOCUMENTATION

This clause of ENV 1090-1 is applicable.

5 MATERIALS

This clause of ENV 1090-1 is applicable except as follows:

5.1 General

Addition:

- (106) The project specification shall specify stainless steel material to be used in the works in terms of the relevant product standard from Table 1. If products not covered by standards are used they shall be specified in the project specification.

NOTE: Table 1 gives information on the product standards for stainless steel. Grades and finishes should be stated in the project specification together with any options allowed by the product standard.

(107) The project specification shall specify the requirements for corrosion resistance and mechanical properties of connectors and fasteners. Unless otherwise specified, the connectors or fasteners shall be at least as corrosion resistant as the connected parts.

(108) The surface finish requirements of the stainless steel shall be specified in the project specification. The surface finish of:

- Sheet, plate and strip shall be in accordance with the requirements of EN 10088-2
- Bars, rods and sections shall be in accordance with the requirements of EN 10088-3
- Other product forms shall be specified in terms of appropriate national and international specifications.

If the relevant specification does not adequately define decorative or specialist surface finishes, the finish shall be detailed in the project specification.

Modification of Table 1 of ENV 1090-1: Product standards for stainless steel materials

Products	Technical delivery requirements		Tolerances
	General engineering	Pressure retaining	
Sheet, plate and strip	EN 10088-2	prEN 10028-7	EN 10029 EN 10048 EN 10051 EN 10258 EN 10259
Tubes (welded)	prEN 100xx	prEN 10217-7	ISO 1127
Tubes (seamless)	prEN 100yy	prEN 10216-5	
Hollow sections	prEN 100zz	-	ISO 1127
Bars, rods and sections	EN 10088-3	prEN 10272	Eu 17, Eu 58, Eu 59, Eu 60, Eu 61, Eu 65

5.2 Use of materials

5.2.1 Identification

Addition to Note:

Where studding other than property class 50 (EN ISO 3506-1) is being used care should be taken to ensure that it is identifiable at all stages from receipt to handover after incorporation in the works.

5.2.2 Handling and storage

Addition:

(104) Stainless steel shall not be contaminated by fixtures or manipulators etc.

5.2.3 Steel for welded components

This clause is not applicable.

NOTE: Guidance for welded components of stainless steels are given in prEN 1011-3.

5.2.4 Special properties

Modification:

(1) The project specification shall specify any special restrictions on either surface discontinuities or the repair of surface defects by grinding in accordance with EN 10088-2 or EN 10088-3.

(2) and (3) are not applicable

Addition:

(104) Any special requirements, for example Pitting Resistance Equivalent (Nitrogen) (PRE(N)) or accelerated corrosion testing, shall be specified in the project specification. The PRE(N) shall be given by $(Cr + 3.3 Mo + 16N)$, in which the elements are in weight percent, unless otherwise specified.

(105) Welded connections shall not be used in service at temperatures over 375°C unless permitted by the project specification.

5.3 Welding consumables

(3) is not applicable.

Addition:

(104) Consumables shall be used which give weld deposits of at least equivalent corrosion resistance to the parent metal. All consumables shall be kept free from contaminants, and stored according to the manufacturer's instructions.

5.4 Mechanical fasteners

5.4.1 Hexagon bolts, screws, hexagon nuts, studs and plain washers

5.4.1.2 Mechanical properties

Addition:

(105) The mechanical properties of austenitic stainless steel bolts, screws, nuts and studs up to M39 for property class 50 and up to M24 for property classes 70 and 80 shall be in accordance with EN-ISO 3506-1 and EN-ISO 3506-2.

(106) The mechanical properties of larger diameter austenitic bolts and austenitic-ferritic bolts at any diameter shall be specified in the project specification.

(107) The mechanical properties of austenitic stainless steel washers up to M39 shall be as listed in Table 2.

(108) The mechanical properties of larger diameter austenitic washers and austenitic-ferritic washers at any diameter shall be specified in the project specification.