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Izvedba jeklenih in aluminijastih konstrukcij - 2. del: Tehnične zahteve za izvedbo jeklenih konstrukcij

Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures

Ausführung von Stahltragwerken und Aluminiumtragwerken - Teil 2: Technische Regeln für die Ausführung von Stahltragwerken

Exécution des structures en acier et des structures en aluminium - Partie 2: Exigences techniques pour les structures en acier

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Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures

Exécution des structures en acier et des structures en
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structures en acier

Ausführung von Stahltragwerken und
Aluminiumtragwerken - Teil 2: Technische Regeln für
die Ausführung von Stahltragwerken

This European Standard was approved by CEN on 22 January 2018.

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 CEN-CENELEC Management Centre or to any CEN member.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword		9
Introduction		11
1	Scope.....	12
2	Normative references.....	12
2.1	Constituent products	12
2.1.1	Steels.....	12
2.1.2	Steel castings	15
2.1.3	Welding consumables	15
2.1.4	Mechanical fasteners	16
2.1.5	High strength cables	16
2.1.6	Structural bearings	17
2.2	Preparation.....	17
2.3	Welding.....	17
2.4	Testing	19
2.5	Erection	19
2.6	Corrosion protection.....	19
2.7	Miscellaneous.....	20
3	Terms and definitions.....	21
4	Specifications and documentation	23
4.1	Execution Specification.....	23
4.1.1	General.....	23
4.1.2	Execution classes	23
4.1.3	Requirements for surface preparation for corrosion protection	24
4.1.4	Geometrical tolerances.....	24
4.2	Constructor's documentation.....	24
4.2.1	Quality documentation	24
4.2.2	Quality plan.....	24
4.2.3	Safety of the erection works	25
4.2.4	Execution documentation.....	25
5	Constituent products	25
5.1	General.....	25
5.2	Identification, inspection documents and traceability	26
5.3	Structural steel products	28
5.3.1	General.....	28
5.3.2	Thickness tolerances.....	29
5.3.3	Surface conditions	30
5.3.4	Additional properties.....	30
5.4	Steel castings	31
5.5	Welding consumables	31
5.6	Mechanical fasteners.....	33
5.6.1	General.....	33
5.6.2	Terminology	33
5.6.3	Structural bolting assemblies for non-preloaded applications	33
5.6.4	Structural bolting assemblies for preloading.....	34

5.6.5	Direct tension indicators	34
5.6.6	Weather resistant assemblies.....	34
5.6.7	Foundation bolts.....	34
5.6.8	Locking devices	35
5.6.9	Washers.....	35
5.6.10	Solid rivets for hot riveting.....	35
5.6.11	Special fasteners	35
5.6.12	Delivery and identification	35
5.7	Studs and shear connectors.....	36
5.8	Reinforcing steel welded to structural steel.....	36
5.9	Grouting materials	36
5.10	Expansion joints for bridges.....	36
5.11	High strength cables, rods and terminations	36
5.12	Structural bearings	37
6	Preparation and assembly	37
6.1	General	37
6.2	Identification.....	37
6.3	Handling and storage	37
6.4	Cutting.....	39
6.4.1	General	39
6.4.2	Shearing and nibbling.....	39
6.4.3	Thermal cutting.....	39
6.4.4	Hardness of free edge surfaces.....	40
6.5	Shaping.....	40
6.5.1	General	40
6.5.2	Hot forming.....	40
6.5.3	Flame straightening.....	41
6.5.4	Cold forming.....	42
6.6	Holing.....	44
6.6.1	Dimensions of holes.....	44
6.6.2	Tolerances on hole diameter for bolts and pins.....	45
6.6.3	Execution of holing.....	45
6.7	Cut outs.....	46
6.8	Full contact bearing surfaces	46
6.9	Assembly.....	46
6.10	Assembly check.....	47
7	Welding	47
7.1	General	47
7.2	Welding plan	47
7.2.1	Requirements for a welding plan.....	47
7.2.2	Content of a welding plan	48
7.3	Welding processes.....	48
7.4	Qualification of welding procedures and welding personnel	49
7.4.1	Qualification of welding procedures	49
7.4.2	Welders and welding operators	51
7.4.3	Welding coordination	52
7.5	Preparation and execution of welding.....	54
7.5.1	Joint preparation	54
7.5.2	Storage and handling of welding consumables	55
7.5.3	Weather protection.....	55
7.5.4	Assembly for welding.....	55
7.5.5	Preheating.....	56

EN 1090-2:2018 (E)

7.5.6	Temporary attachments.....	56
7.5.7	Tack welds.....	56
7.5.8	Fillet welds.....	56
7.5.9	Butt welds.....	57
7.5.10	Welds on steels with improved atmospheric corrosion resistance.....	58
7.5.11	Branch connections.....	58
7.5.12	Stud welding.....	58
7.5.13	Slot and plug welds.....	58
7.5.14	Other weld types.....	59
7.5.15	Post-weld heat treatment.....	59
7.5.16	Execution of welding.....	59
7.5.17	Welding of orthotropic bridge decks.....	59
7.6	Acceptance criteria.....	59
7.6.1	Routine requirements.....	59
7.6.2	Fatigue requirements.....	60
7.6.3	Orthotropic bridge decks.....	60
7.7	Welding of stainless steels.....	60
8	Mechanical fastening.....	60
8.1	General.....	60
8.2	Use of bolting assemblies.....	61
8.2.1	General.....	61
8.2.2	Bolts.....	61
8.2.3	Nuts.....	62
8.2.4	Washers.....	62
8.3	Tightening of non-preloaded bolting assemblies.....	63
8.4	Preparation of contact surfaces in slip resistant connections.....	63
8.5	Tightening of preloaded bolting assemblies.....	65
8.5.1	General.....	65
8.5.2	Torque reference values.....	66
8.5.3	Torque method.....	67
8.5.4	Combined method.....	67
8.5.5	HRC method.....	68
8.5.6	Direct tension indicator method.....	69
8.6	Fit bolts.....	69
8.7	Hot riveting.....	69
8.7.1	Rivets.....	69
8.7.2	Installation of rivets.....	69
8.7.3	Acceptance criteria.....	70
8.8	Use of special fasteners and fastening methods.....	70
8.9	Galling and seizure of stainless steels.....	71
9	Erection.....	71
9.1	General.....	71
9.2	Site conditions.....	71
9.3	Erection method.....	72
9.3.1	Design basis for the erection method.....	72
9.3.2	Constructor's erection method.....	73
9.4	Survey.....	74
9.4.1	Reference system.....	74
9.4.2	Position points.....	74
9.5	Supports, anchors and bearings.....	74
9.5.1	Inspection of supports.....	74
9.5.2	Setting out and suitability of supports.....	74

9.5.3	Maintaining suitability of supports.....	75
9.5.4	Temporary supports	75
9.5.5	Grouting and sealing.....	75
9.5.6	Anchoring	76
9.6	Erection and work at site	76
9.6.1	Erection drawings	76
9.6.2	Marking	76
9.6.3	Handling and storage on site.....	76
9.6.4	Trial erection	77
9.6.5	Erection works.....	77
10	Surface treatment.....	79
10.1	General	79
10.2	Preparation of steel substrates for paints and related products.....	79
10.3	Weather resistant steels	80
10.4	Galvanic coupling.....	80
10.5	Hot dip galvanizing	80
10.6	Sealing of spaces	81
10.7	Surfaces in contact with concrete	81
10.8	Inaccessible surfaces.....	81
10.9	Repairs after cutting or welding	81
10.10	Cleaning of stainless steel components	82
11	Geometrical tolerances.....	82
11.1	Tolerance types.....	82
11.2	Essential tolerances.....	82
11.2.1	General	82
11.2.2	Manufacturing tolerances	82
11.2.3	Erection tolerances.....	83
11.3	Functional tolerances.....	84
11.3.1	General	84
11.3.2	Tabulated values.....	85
11.3.3	Alternative criteria	85
12	Inspection, testing and correction.....	85
12.1	General	85
12.2	Constituent products and components.....	85
12.2.1	Constituent products.....	85
12.2.2	Components.....	86
12.2.3	Non-conforming products	86
12.3	Manufacturing: geometrical dimensions of manufactured components	86
12.4	Welding	87
12.4.1	General	87
12.4.2	Inspection after welding	87
12.4.3	Inspection and testing of welded shear studs for composite steel and concrete structures	91
12.4.4	Production tests on welding.....	91
12.4.5	Inspection and testing of welding of reinforcing steel.....	92
12.5	Mechanical fastening.....	92
12.5.1	Inspection of non-preloaded bolted connections	92
12.5.2	Inspection and testing of preloaded bolted connections.....	92
12.5.3	Inspection and repairs of solid rivets for hot riveting.....	95
12.5.4	Special fasteners and fastening methods.....	96
12.6	Surface treatment and corrosion protection.....	96

EN 1090-2:2018 (E)

12.7	Erection	96
12.7.1	Inspection of trial erection	96
12.7.2	Inspection of the erected structure	96
12.7.3	Survey of geometrical position of connection nodes	97
12.7.4	Other acceptance tests	98
Annex A (normative) Additional information, options and requirements related to the execution classes		99
A.1	Additional information	99
A.2	Options	102
A.3	Requirements related to the execution classes	107
Annex B (normative) Geometrical tolerances		111
B.1	General	111
B.2	Manufacturing tolerances	111
B.3	Erection tolerances	136
Annex C (informative) Check-list for the content of a quality plan		153
C.1	General	153
C.2	Content	153
C.2.1	Management	153
C.2.2	Specification review	153
C.2.3	Documentation	153
C.2.3.1	General	153
C.2.3.2	Documentation prior to execution	154
C.2.3.3	Execution records	154
C.2.3.4	Documentary records	154
C.2.4	Inspection and testing procedures	155
Annex D (informative) Procedure for checking capability of automated thermal cutting processes		156
D.1	General	156
D.2	Description of the procedure	156
D.2.1	General	156
D.2.2	Average surface roughness R_{Z5}	157
D.2.3	Perpendicularity and angularity tolerance	158
D.2.4	Hardness test	158
D.3	Range of qualification	159
D.3.1	Material groups	159
D.3.2	Material thickness	160
D.3.3	Pressures of gases	160
D.3.4	Cutting speed and height	160

D.3.5	Preheat temperature.....	160
D.4	Test report	160
Annex E (informative) Welded joints in hollow sections		164
E.1	General	164
E.2	Guidance for start and stop positions	164
E.3	Preparation of joint faces	164
E.4	Assembly for welding.....	165
E.5	Fillet welded joints.....	172
Annex F (normative) Corrosion protection.....		173
F.1	General	173
F.1.1	Field of application	173
F.1.2	Performance specification	173
F.1.3	Prescriptive requirements.....	173
F.1.4	Work method	174
F.2	Surface preparation of carbon steels	174
F.2.1	Surface preparation of carbon steels prior to painting or metal spraying.....	174
F.2.2	Surface preparation of carbon steels prior to hot dip galvanizing.....	175
F.3	Welds and surfaces for welding	175
F.4	Surfaces in preloaded connections.....	175
F.5	Preparation of fasteners.....	175
F.6	Coating methods	176
F.6.1	Painting	176
F.6.2	Metal spraying	176
F.6.3	Hot dip galvanizing	176
F.7	Inspection and checking	176
F.7.1	General	176
F.7.2	Routine checking	176
F.7.3	Reference areas.....	177
F.7.4	Hot dip galvanized components.....	177
Annex G (normative) Determination of slip factor.....		178
G.1	General	178
G.2	Significant variables	178
G.3	Test specimens	178
G.4	Slip test procedure and evaluation of results.....	181
G.5	Extended creep test procedure and evaluation.....	183
G.6	Test results.....	183

Annex H (normative) Calibration test for preloaded bolting assemblies under site conditions	185
H.1 General.....	185
H.2 Symbols and units.....	185
H.3 Principle of the test.....	186
H.4 Test apparatus	186
H.5 Test assemblies.....	186
H.6 Test set up.....	186
H.7 Test procedure.....	187
H.8 Evaluation of test results.....	187
H.9 Test report.....	189
Annex I (informative) Determination of loss of preload for thick surface coatings.....	190
I.1 General.....	190
I.2 Test procedure.....	191
Annex J (informative) Resin injection bolts	193
J.1 General.....	193
J.2 Hole sizes	193
J.3 Bolts	193
J.4 Washers.....	194
J.5 Nuts	195
J.6 Resin	195
J.7 Tightening	195
J.8 Installation	195
Annex K (informative) Guide to flow diagram for development and use of a WPS.....	196
Annex L (informative) Guidance on the selection of weld inspection classes	197
L.1 General.....	197
L.2 Selection criteria.....	197
L.3 Extent of supplementary testing	198
Annex M (normative) Sequential method for fasteners inspection	200
M.1 General.....	200
M.2 Application	200
Bibliography	202

European foreword

This document (EN 1090-2:2018) has been prepared by Technical Committee CEN/TC 135 “Execution of steel structures and aluminium structures”, the secretariat of which is held by SN.

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 December 2018 and conflicting national standards shall be withdrawn at the latest by December 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1090-2:2008+A1:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document is part of the EN 1090 series, which comprises the following parts:

- EN 1090-1, *Execution of steel structures and aluminium structures - Part 1: Assessment and verification of constancy of performance for structural components*
- EN 1090-2, *Execution of steel structures and aluminium structures - Part 2: Technical requirements for steel structures*
- EN 1090-3, *Execution of steel structures and aluminium structures - Part 3: Technical requirements for aluminium structures*
- EN 1090-4, *Execution of steel structures and aluminium structures - Part 4: Technical requirements for cold-formed structural steel elements and cold-formed structures for roof, ceiling, floor and wall applications*
- EN 1090-5, *Execution of steel structures and aluminium structures - Part 5: Technical requirements for cold-formed structural aluminium elements and cold-formed structures for roof, ceiling, floor and wall applications*

Technical requirements for cold-formed structural steel elements, members and sheeting and cold-formed steel structures for roof, ceiling, floor, wall, and cladding applications have been removed from this Part of the EN 1090 series, as they are given in EN 1090-4.

Informative Annex B giving guidance for the determination of execution class has been removed as normative requirements for the selection of execution class are now included in of EN 1993-1-1:2005/A1:2014, Annex C.

A new informative Annex D has been included giving guidance on a procedure for checking the capability of thermal cutting processes.

A new informative Annex I has been included giving guidance on determination of the loss of preload from thick coatings on contact surfaces in preloaded connections.

Normative Annex J “Use of compressible washer-type direct tension indicators” has been removed.

A new informative Annex L has been included giving guidance on the selection of weld inspection classes.

EN 1090-2:2018 (E)

Other annexes have been renumbered accordingly:

- Annex D becomes Annex B;
- Annex K becomes Annex J;
- Annex L becomes Annex K.

Annexes A, C, E, F, G, H and M have not been renumbered.

There have been some amendments included in these annexes.

The main text contains some changes. It includes updated cross-references to supporting standards and some corrections.

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

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Introduction

This European Standard specifies requirements for execution of steel structures, in order to ensure adequate levels of mechanical resistance and stability, serviceability and durability.

This European Standard specifies requirements for execution of steel structures in particular those that are designed according to the EN 1993 series and the steel parts of composite steel and concrete structures designed according to the EN 1994 series.

This European Standard presupposes that the work is carried out with the necessary skill and adequate equipment and resources to perform the work in accordance with the execution specification and the requirements of this European Standard.

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EN 1090-2:2018 (E)**1 Scope**

This European Standard specifies requirements for execution of structural steelwork as structures or as manufactured components, produced from:

- hot rolled, structural steel products up to and including grade S700;
- cold formed components and sheeting up to and including grade S700 (unless coming within the scope of EN 1090-4);
- hot finished or cold formed austenitic, austenitic-ferritic and ferritic stainless steel products;
- hot finished or cold formed structural hollow sections, including standard range and custom-made rolled products and hollow sections manufactured by welding.

For components produced from cold formed components, and cold formed structural hollow sections that are within the scope of EN 1090-4, the requirements of EN 1090-4 take precedence over corresponding requirements in this European Standard.

This European Standard can also be used for structural steel grades up to and including S960, provided that conditions for execution are verified against reliability criteria and any necessary additional requirements are specified.

This European Standard specifies requirements, which are mostly independent of the type and shape of the steel structure (e.g. buildings, bridges, plated or latticed components) including structures subjected to fatigue or seismic actions. Certain requirements are differentiated in terms of execution classes.

This European Standard applies to structures designed according to the relevant part of the EN 1993 series. Sheet piling, displacement piles and micropiles designed to EN 1993-5 are intended to be executed in accordance with respectively EN 12063, EN 12699 and EN 14199. This European Standard only applies to the execution of walling, bracing, and connections.

This European Standard applies to steel components in composite steel and concrete structures designed according to the relevant part of the EN 1994 series.

This European Standard can be used for structures designed according to other design rules provided that conditions for execution comply with them and any necessary additional requirements are specified.

This European Standard includes the requirements for the welding of reinforcing steels to structural steels. This European Standard does not include requirements for the use of reinforcing steels for reinforced concrete applications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

2.1 Constituent products**2.1.1 Steels**

EN 10017, *Steel rod for drawing and/or cold rolling - Dimensions and tolerances*

EN 10021, *General technical delivery conditions for steel products*

EN 10024, *Hot rolled taper flange I sections - Tolerances on shape and dimensions*

- EN 10025-1, *Hot rolled products of structural steels - Part 1: General technical 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 10025-6, *Hot rolled products of structural steels — Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition*
- EN 10029, *Hot-rolled steel plates 3 mm thick or above - Tolerances on dimensions and shape*
- EN 10034, *Structural steel I and H sections - Tolerances on shape and dimensions*
- EN 10048, *Hot rolled narrow steel strip - Tolerances on dimensions and shape*
- EN 10051, *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels - Tolerances on dimensions and shape*
- EN 10055, *Hot rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions*
- EN 10056-1, *Structural steel equal and unequal leg angles - Part 1: Dimensions*
- EN 10056-2, *Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions*
- EN 10058, *Hot rolled flat steel bars for general purposes - Dimensions and tolerances on shape and dimensions*
- EN 10059, *Hot rolled square steel bars for general purposes - Dimensions and tolerances on shape and dimensions*
- EN 10060, *Hot rolled round steel bars for general purposes - Dimensions and tolerances on shape and dimensions*
- EN 10061, *Hot rolled hexagon steel bars for general purposes - Dimensions and tolerances on shape and dimensions*
- EN 10080, *Steel for the reinforcement of concrete - Weldable reinforcing steel - General*
- EN 10088-1, *Stainless steels - Part 1: List of stainless steels*
- EN 10088-4:2009, *Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes*
- EN 10088-5:2009, *Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes*