

DIN EN 1090-1



ICS 91.080.10

Supersedes
DIN EN 1090-1:2010-07

**Execution of steel structures and aluminium structures –
Part 1: Requirements for conformity assessment of structural
components (includes Amendment A1:2011)
English translation of DIN EN 1090-1:2012-02**

Ausführung von Stahltragwerken und Aluminiumtragwerken –
Teil 1: Konformitätsnachweisverfahren für tragende Bauteile (enthält Änderung A1:2011)
Englische Übersetzung von DIN EN 1090-1:2012-02

Exécution des structures en acier et des structures en aluminium –
Partie 1: Exigences pour l'évaluation de la conformité des éléments structuraux
(Amendement A1:2011 inclus)
Traduction anglaise de DIN EN 1090-1:2012-02

Document comprises 45 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.



A comma is used as the decimal marker.

Start of application

The start of application of this standard is due to be 1 February 2012.

It should be noted that, in Germany, CE conformity marking of construction products will be permitted once this standard has been listed in the *Bundesanzeiger* (German Federal Gazette) and from the date given therein.

National foreword

This standard has been prepared by Technical Committee CEN/TC 135 “Execution of steel structures and aluminium structures” (Secretariat: SN, Norway).

The responsible German body involved in its preparation was the *Normenausschuss Bauwesen* (Building and Civil Engineering Standards Committee), Working Committee NA 005-08-14 AA *Stahlbauten; Herstellung* (Sp CEN/TC 135).

Fire resistance classes of construction products and the relevant assessment criteria are given in the decision of the European Commission of 3 May 2000 and implemented in Directive 89/106/EEC.

Amendments

This standard differs from DIN EN 1090-1:2010-07 as follows:

- a) Subclause 4.5.5 “Deformation at serviceability limit state” has been included;
- b) Annex ZA, ZA.1 “Scope and relevant characteristics” has been editorially revised;
- c) in the German version, the abbreviation “KLF” has been replaced by “NPD” (no performance determined).

Previous editions

DIN EN 1090-1: 2009-10, 2010-07

English Version

**Execution of steel structures and aluminium structures - Part 1:
Requirements for conformity assessment of structural
components**

Exécution des structures en acier et des structures en
aluminium - Partie 1: Exigences pour l'évaluation de la
conformité des éléments structuraux

Ausführung von Stahltragwerken und Aluminiumtragwerken
- Teil 1: Konformitätsnachweisverfahren für tragende
Bauteile

This European Standard was approved by CEN on 15 June 2008 and includes Corrigendum 1 issued by CEN on 17 November 2010 and Amendment 1 approved by CEN on 3 October 2011.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms, definitions and abbreviations	7
3.1 Terms and definitions	7
3.2 Abbreviations	8
4 Requirements	9
4.1 Constituent products	9
4.1.1 General.....	9
4.1.2 Constituent products for steel components	9
4.1.3 Constituent products for aluminium components	9
4.2 Tolerances on dimensions and shape	9
4.3 Weldability	9
4.4 Fracture toughness	10
4.5 Structural characteristics	10
4.5.1 General.....	10
4.5.2 Load bearing capacity	10
4.5.3 Fatigue strength.....	10
4.5.4 Resistance to fire	10
4.5.5 Deformation at serviceability limit state.....	11
4.6 Reaction to fire.....	11
4.7 Dangerous substances	11
4.8 Impact resistance.....	11
4.9 Durability	11
5 Evaluation methods.....	12
5.1 General.....	12
5.2 Constituent products	12
5.3 Tolerances on dimensions and shape	12
5.4 Weldability	12
5.5 Fracture toughness	12
5.6 Structural characteristics	13
5.6.1 General.....	13
5.6.2 Structural design	13
5.6.3 Manufacturing characteristics.....	14
5.7 Resistance to fire	14
5.8 Reaction to fire.....	14
5.9 Dangerous substances	14
5.10 Impact resistance.....	14
5.11 Durability	14
6 Evaluation of conformity.....	15
6.1 General.....	15
6.2 Initial type testing	15
6.2.1 General.....	15
6.2.2 Characteristics	16
6.2.3 Use of historical data	16
6.2.4 Use of structural calculations for conformity assessment	16
6.2.5 Initial type calculation	16
6.2.6 Sampling, evaluation and conformity criteria.....	16
6.2.7 Declaration of performance characteristics	16

6.2.8	Recording of results from evaluations.....	17
6.2.9	Corrective actions	17
6.3	Factory production control.....	19
6.3.1	General	19
6.3.2	Personnel	19
6.3.3	Equipment	19
6.3.4	Structural design process	19
6.3.5	Constituent products used in manufacture	20
6.3.6	Component specification.....	20
6.3.7	Product evaluation	20
6.3.8	Non-conforming products	20
7	Classification and designation	21
8	Marking.....	22
Annex A	(informative) Guidelines for preparation of the component specification	23
A.1	General	23
A.2	Purchaser provided component specification (PPCS).....	23
A.3	Manufacturer provided component specification (MPCS)	23
Annex B	(normative) Assessment of factory production control.....	25
B.1	General	25
B.2	Initial inspection	25
B.3	Continuous surveillance.....	26
B.4	Frequency of inspection	27
B.4.1	General	27
B.4.2	Surveillance intervals.....	27
B.4.3	Declaration by manufacturer.....	28
B.4.4	Action in case of non-compliance	28
B.5	Reports	28
Annex ZA	(informative) Clauses of this European Standard Addressing the provisions of EU Construction Products Directive (CPD)	29
ZA.1	Scope and relevant characteristics	29
ZA.2	Procedures for the attestation of conformity of structural steel and aluminium components	31
ZA.2.1	System of attestation of conformity	31
ZA.2.2	Assignment of tasks	31
ZA.2.3	Declaration of conformity	32
ZA.3	CE marking and labelling.....	33
ZA.3.1	General	33
ZA.3.2	Declaration of product properties by material properties and geometrical data	33
ZA.3.3	Declaration of the strength value(s) of the component.....	37
ZA.3.4	Declaration of compliance with a given component specification	39
ZA.3.5	Declaration of the strength value(s) of the component from purchaser's order.....	41
	Bibliography.....	43