

# SVENSK STANDARD

## SS-EN 1090-1:2009

Fastställt/Approved: 2009-07-03  
Publicerad/Published: 2009-08-26  
Utgåva/Edition: 1  
Språk/Language: engelska/English  
ICS: 91.080.10

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### **Utförande av stål- och aluminiumkonstruktioner – Del 1: Bedömning av bärverksdelars överensstämmelse med ställda krav**

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

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1090-1**

July 2009

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ICS 91.080.10

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 composants structuraux

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

This European Standard was approved by CEN on 15 June 2008.

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 Management Centre or to any CEN member.

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## Foreword

This document (EN 1090-1:2009) has been prepared by Technical Committee CEN/TC 135 "Execution of steel 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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by August 2011.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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, 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 the United Kingdom.



## Introduction

This harmonised European Standard is a part of a group of European standards dealing with design and manufacturing of load bearing components and structures made of steel or aluminium.

This harmonised European Standard deals with provisions for conformity assessment of components which imply conformity to performance characteristics declared by the manufacturer of the components.

The components have structural characteristics which make them fit for their particular use and function.

The structural characteristics are governed by the design and the manufacture of the components.

This harmonised European Standard does not contain rules for structural design and manufacture. Such rules are called up from the relevant parts of Eurocode for design requirements and from EN 1090-2 (steel) and EN 1090-3 (aluminium) for execution requirements.

To use this harmonised European Standard for assessment and declaration of conformity of structural steel or aluminium components all relevant design and execution standards within the group need to be available.

This harmonised European Standard has been prepared to satisfy Mandate M 120 – Structural metallic products and ancillaries (2/4) – issued by the European Commission.

## 1 Scope

This European Standard specifies requirements for conformity assessment of performance characteristics for structural steel and aluminium components as well as for kits placed on the market as construction products. The conformity assessment covers the manufacturing characteristics, and where appropriate the structural design characteristics.

This European Standard covers also the conformity assessment of steel components used in composite steel and concrete structures.

The components can be used directly or in construction works or as structural components in the form of kits.

This European Standard applies to series and non-series structural components including kits.

The components can be made of hot rolled or cold formed constituent products or constituent products produced with other technologies. They may be produced of sections/profiles with various shapes, flat products (plates, sheet, strip), bars, castings, forgings made of steel and aluminium materials, unprotected or protected against corrosion by coating or other surface treatment, e.g. anodising of aluminium.

This European Standard covers structural cold formed members and sheeting as defined in EN 1993-1-3 and EN 1999-1-4.

This European Standard does not cover conformity assessment of components for suspended ceilings, rails or sleepers for use in railway systems.

**NOTE** For certain steel and aluminium components, particular specifications for performance and other requirements have been developed. The particular specifications may be issued as an EN or as Clauses within an EN. An example is given in EN 13084-7 for single wall steel chimneys and steel liners. Such particular specifications will take precedence in case of non-compliance with the requirements of this European Standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

EN 1090-2	<i>Execution of steel structures and aluminium structures — Part 2: Technical requirements for steel structures</i>
EN 1090-3	<i>Execution of steel structures and aluminium structures — Part 3: Technical requirements for aluminium structures</i>
EN 1990:2002	<i>Eurocode: Basis of structural design</i>
EN 1991 (all parts)	<i>Eurocode 1: Actions on structures</i>
EN 1993 (all parts)	<i>Eurocode 3: Design of steel structures</i>
EN 1994 (all parts)	<i>Eurocode 4: Design of composite steel and concrete structures</i>
EN 1998 (all parts)	<i>Eurocode 8: Design of structures for earthquake resistance</i>
EN 1999 (all parts)	<i>Eurocode 9: Design of aluminium structures</i>
EN 10045-1	<i>Metallic materials — Charpy impact test — Part 1: Test method</i>

EN 10164	<i>Steel products with improved deformation properties perpendicular to the surface of the product — Technical delivery conditions</i>
EN 13501-1	<i>Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests</i>
EN 13501-2	<i>Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services</i>
EN ISO 9001	<i>Quality management systems — Requirements (ISO 9001:2000)</i>
EN ISO 14731	<i>Welding coordination — Tasks and responsibilities (ISO 14731:2006)</i>
ISO 7976-1	<i>Tolerances for building — Methods of measurement of buildings and building products — Part 1: Methods and instruments</i>
ISO 7976-2	<i>Tolerances for building — Methods of measurement of buildings and building products — Part 2: Position of measuring points</i>
ISO 17123-1	<i>Optics and optical instruments — Field procedures for testing geodetic and surveying instruments — Part 1: Theory</i>

### **3 Terms, definitions and abbreviations**

#### **3.1 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

##### **3.1.1**

##### **component specification**

document or documents giving all necessary information and technical requirements for manufacturing the structural component

##### **3.1.2**

##### **constituent products**

materials or products used in manufacturing with properties which enter into structural calculations or otherwise relate to the mechanical resistance and stability of works and parts thereof, and/or their fire resistance, including aspects of durability and serviceability

##### **3.1.3**

##### **design brief**

documents containing all information necessary to perform a structural design of the component, considering its intended use

##### **3.1.4**

##### **European technical specifications**

European Standards and European Technical Approvals for construction products

##### **3.1.5**

##### **evaluation method**

means to check that the performance characteristics of the component comply with the values to be declared and any other required values which are used for evaluation of conformity for characteristics such as material properties, geometry and structural characteristics

NOTE 1 Where physical tests are carried out as the basis for the evaluation, the term test method is used.

NOTE 2 Where structural calculations are used to evaluate the load bearing capacity and/or the fatigue strength, the term initial type calculation (ITC) is used.