SLOVENSKI STANDARD
oSIST prEN 10380:2026

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Končni izdelki iz nelegiranega in legiranega jekla za konstrukcijsko uporabo

Finished non-alloy and alloy steel products for structural use

Fertigerzeugnisse aus unlegierten und legierten Stählen für den Stahlbau

Produits finis en aciers non-alliés et alliés pour la construction

Ta slovenski standard je istoveten z: **prEN 10380**

ICS:

77.140.01	Železni in jekleni izdelki na splošno	Iron and steel products in general
91.080.13	Jeklene konstrukcije	Steel structures

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English Version

Finished non-alloy and alloy steel products for structural use

Produits finis en aciers non-alliés et alliés pour la construction

Fertigerzeugnisse aus unlegierten und legierten Stählen für den Stahlbau

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 459/SC 3.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 10380:2026) has been prepared by Technical Committee CEN/TC 459/SC 3 “Structural steels other than reinforcements”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 10025-1:2004, EN 10210-1:2006 (partially), EN 10219-1:2006 (partially), EN 10343:2009 (partially).

This document has been prepared under a standardization request given to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For relationship with EU Regulation 305/2011, see informative Annex ZA, which is an integral part of this document.

NOTE Related standards i.e. the technical delivery condition and dimensional standards are mentioned in informative Annex B.

1 Scope

This document covers finished products made of carbon steel, steel alloy and cast steel intended to be used as structural elements in construction works, including its use in installations.

Products are coated, or uncoated.

Products are weldable, or non-weldable.

Products made of stainless steel are excluded from this product definition.

This document covers: Product group on sections and profiles, product group on plates, sheets, strip and wide flats, product group on bars, rods and wire, product group on hollows and product group on piles and sheet piles.

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.

EN 10020:2000, *Definition and classification of grades of steel*

EN 10027-1:2016, *Designation systems for steels — Part 1: Steel names*

EN 10027-2:2015, *Designation systems for steels — Part 2: Numerical system*

EN 10079:2007, *Definition of steel products*

EN 10379:2025, *Steel sheet piles — Test methods*

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 15804:2012+A2:2019+AC:2021, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

EN 17662:2026, *Execution of steel structures and aluminium structures — Environmental Product Declarations — Product category rules complementary to EN 15804 for Steel, Iron and Aluminium structural products for use in construction works*

EN ISO 148-1:2016, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1:2016)*

EN ISO 377:2017, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing (ISO 377:2017)*

EN ISO 6892-1:2019, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2019)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020:2000, EN 10079:2007, and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
CEV (carbon equivalent value)
result of a formula given by IIW (International Institute of Welding) to express the weldability of steel

Note 1 to entry: For determining the carbon equivalent value, the following IIW formula shall be used:

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Ni + Cu}{15}$$

where C, Mn, Cr, Mo, V, Ni, Cu are the mass fraction in % of these elements in the heat analysis.

4 Characteristics

4.1 Elongation after fracture

The elongation after fracture of steel products for structural use provides a value for the ductility of the material and is the ratio of total deformation to the initial dimension of the material. The performance of the product in relation to elongation after fracture shall be determined in accordance with 5.1. The elongation after fracture shall be expressed in %.

4.2 Tensile yield strength/ 0,2 % proof stress

The tensile yield strength/ 0,2% proof stress of steel products for structural use is a material property defined as the stress at which the material begins to deform plastically after elastic and non-permanent deformation. The performance of the product in relation to tensile yield strength/ 0,2% proof stress shall be determined in accordance with 5.2. The tensile yield strength/ 0,2% proof stress shall be expressed in MPa.

4.3 Ultimate tensile strength

The ultimate tensile strength of steel products for structural use is the maximum stress that the material can withstand while being stretched or pulled before breaking after elastic and plastic deformation. The performance of the product in relation to ultimate tensile strength shall be determined in accordance with 5.3. The ultimate tensile strength shall be expressed in MPa.

4.4 Stress ratio

Stress ratio is the ratio between the ultimate tensile strength and the tensile yield strength/ 0,2% proof stress. It indicates how much tensile stress margin is available in a design/construction until the failure of the material clearly sets in.

4.5 Impact strength

The impact strength of steel products for structural use is the amount of energy absorbed by the material during fracture. This absorbed energy is a measure of a given material's notch toughness and acts as a tool to study temperature-dependent ductile-brittle transition. The performance of the product in relation to impact strength shall be determined in accordance with 5.5. The impact strength shall be expressed in J at a given test temperature (e.g. 0 °C, −20 °C or −50 °C).

4.6 Reduction of cross-sectional area

Reduction of cross-sectional area is the difference between an original given cross-sectional area of a test piece before being subjected to tension and the given area of its smallest cross-section after rupture, expressed as a percentage of the original cross-sectional area.

4.7 Interlock resistance

The interlock resistance only applicable to straight web sheet piles shall be related to a specific nominal interlock geometry and, if required, to a specific steel grade. The performance of the product in relation to interlock resistance shall be determined in accordance with 5.7. The interlock resistance for straight web sheet piles shall be expressed in kN/m.

4.8 Resistance of crimped points

The resistance of crimped points only applicable to U-shaped sheet piles shall be related to a specific nominal interlock geometry or sheet pile section and, if required, to a specific steel grade. The performance of the product in relation to resistance of crimped points shall be determined in accordance with 5.8. The resistance of crimped points of U-shaped sheet piles shall be expressed in kN/crimped point.

4.9 Reaction to fire

4.9.1 General

The reaction to fire indicates the response of the finished non-alloy and alloy steel products for structural use in contributing by its own decomposition to a fire to which it is exposed, under specified conditions. When tested in accordance with the test method given in 5.9, relevant for the claimed class, the test results is expressed as a class according to the classification published in the Official Journal of the European Union on this specific matter.

NOTE The applicable document at the time this standard was drafted is Commission Delegated Regulation (EU) 2016/364 of 1 July 2015. https://eur-lex.europa.eu/eli/reg_del/2016/364 .

4.9.2 Classification without testing (WT)

Whether products covered by this document are made from one or more of the materials that have been considered, under established conditions, as belonging to the category “No contribution to fire” because of their low level of combustibility, the reaction to fire class A applies to these products without the need of carrying out reaction to fire tests.

NOTE The rules to apply this classification are published as Commission Decisions or Commission Delegated Regulations.

4.10 Environmental sustainability

4.10.1 Reference service life

The reference service life is the service life to be expected under a set of reference in-use conditions with which the characteristics of the products are consistent. When assessed in accordance with the method given in 5.10.1, the results are expressed as a value in years.

4.10.2 Life cycle assessment environmental characteristics

Characteristics in Table 1 are related to the life cycle assessment of the product. When assessed in accordance with the method given in 5.10.2, the results are expressed as a value in the units included in Table 1 for modules A1 to A3 and for each module and European harmonized scenario described in 5.10.2.

Table 1 — Life cycle assessment environmental characteristics

Characteristic	Unit	Dimensions
climate change – total	kg CO_2 eq.	M
climate change – fossil	kg CO_2 eq.	M
climate change – biogenic	kg CO_2 eq.	M
climate change - land use and land use change	kg CO_2 eq.	M
ozone depletion	kg CFC 11 eq.	M
acidification	mol H^+ eq.	N
eutrophication aquatic freshwater	kg PO_4 eq.	M
eutrophication aquatic marine	kg N eq.	M
eutrophication terrestrial	mol N eq.	M
photochemical ozone formation	kg NMVOC eq.	M
depletion of abiotic resources - minerals and metals	kg Sb eq.	M
depletion of abiotic resources - fossil fuels	MJ, net calorific value	ML2T-2
water use	m^3 world eq. deprived	L3
particulate matter emissions	Disease incidence	-
ionising radiation, human health	kBq U235 eq.	S-1
ecotoxicity (freshwater)	CTUe	M-1
human toxicity, cancer effects	CTUh	M-1
human toxicity, non- cancer effects	CTUh	M-1
land use related impacts / soil quality	Unitless	-

4.10.3 Resource use environmental characteristics

Characteristics in Table 2 are related to the resource use over the life cycle of the product. When assessed in accordance with the method given in 5.10.3, the results are expressed as a value in the units included in Table 2 for modules A1 to A3 and for each module and European harmonised scenario described in 5.10.3.

Table 2 — Resource use environmental characteristics

Characteristic	Unit	Dimensions
use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	ML2T-2
use of renewable primary energy resources used as raw materials	MJ	ML2T-2
total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	ML2T-2
use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	ML2T-2
use of non-renewable primary energy resources used as raw materials	MJ	ML2T-2
total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	ML2T-2
use of secondary material	kg	M
use of renewable secondary fuels	MJ	ML2T-2
use of non-renewable secondary fuels	MJ	ML2T-2
net use of fresh water	m^3	L3

4.10.4 Waste environmental characteristics

Characteristics in Table 3 are related to the waste produced over the life cycle of the product. When assessed in accordance with the method given in 5.10.4, the results are expressed as a value in the units included in Table 3 for modules A1 to A3 and for each module and European harmonized scenario described in 5.10.4.

Table 3 — Waste environmental characteristics

Characteristic	Unit	Dimensions
hazardous waste disposed	kg	M
non-hazardous waste disposed	kg	M
radioactive waste disposed	kg	M