

English Version

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

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

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

This draft amendment is submitted to CEN members for formal vote. It has been drawn up by the Technical Committee CEN/TC 135.

This draft amendment A1, if approved, will modify the European Standard EN 1090-2:2018. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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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

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European foreword

This document (EN 1090-2:2018/FprA1:2023) 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 document is currently submitted to the Formal Vote.

1 Modification to Clause 2, “Normative references”

Under sub-heading “2.1 Constituent products”, after reference “EN 10210-2”, add:

“EN 10210-3, Hot finished steel structural hollow sections of non-alloy and fine grain steels – Part 3 : Technical delivery conditions for high strength and weather resistant steels”.

After reference “EN 10219-2”, add:

“EN 10219-3, Cold formed welded steel structural hollow sections of non-alloy and fine grain steels – Part 3 : Technical delivery conditions for high strength and weather resistant steels”.

2 Modification to Clause 3, “Terms and definitions”

Replace:

“3.4

constructor

person or organization executing the works”

with:

“3.4

constructor

person or organization responsible for the execution of the works”.

Add after 3.15.4:

“3.16

high-strength steels

HSS

structural steels (hollow sections, flat and long steel products) with minimum yield strength greater than 460 MPa in the thermomechanically rolled or quenched and tempered condition

Note 1 to entry: High-strength steels in this standard are divided into four categories, which are used to differentiate quality requirements:

- Category A1 for steel grades > S460 and ≤ S700, thermomechanically rolled;
- Category A2 for steel grades > S460 and ≤ S700, quenched and tempered;
- Category B1 for steel grades > S700 and ≤ S960, thermomechanically rolled;
- Category B2 for steel grades > S700 and ≤ S960, quenched and tempered.

Note 2 to entry: This definition does not apply to reinforcing steels.”.

3 Modification to 4.2.1, “Quality documentation”

Under list item f), replace “specified” with “if specified,” to read:

“f) if specified, hold-points or requirement to witness inspections or tests, and any consequent access requirements.”.

4 Modification to 5.2, "Identification, inspection documents and traceability"

In Table 1, 1st column, 2nd line: add a new footnote "g" to read:

"Structural steels (Tables 2 and 3) ^g"

In the table footer, add the footnote "g" as follows:

"^g For HSS, the chemical composition (heat analysis) for the following 14 elements shall be required and certified: C, Si, Mn, P, S, Al, N, Cr, Cu, Mo, Ni, Nb, Ti, V and the designation in accordance with EN 10027."

5 Modification to 5.3, "Structural steel products"

Add a new row before the table NOTE which contains the following text:

"The national product standards or national recommendations or steel producer's guidelines should be considered."

9th line, 2nd column: replace "EN 10210-1" with

"EN 10210-1

EN 10210-3

as relevant"

10th line, 2nd column: replace "EN 10219-1" with

"EN 10219-1

EN 10219-3

as relevant".

6 Modification to 6.4.4, "Hardness of free edge surfaces"

Add at the end of 6.4.4:

"NOTE 3 For HSS, the steel producer can recommend the need for preheating of the material for thermal cutting. As an alternative, the cut edges can be machined to remove the hardened layer such that the 450[HV10] limit is not exceeded."

7 Modification to 6.5.1, "General"

1st paragraph, replace:

"Steel may be bent, pressed or forged to the required shape by either a hot or cold forming process, provided the properties are not reduced below those specified."

with:

"Steel may be bent, pressed or forged to the required shape, by either a hot or cold forming process, provided the properties conform to those specified in the execution specification."

8 Modification to 6.5.2, "Hot forming"

1st paragraph, replace:

"Shaping by hot forming shall conform to the requirements relating to hot forming in the relevant product standard and to the recommendations of the steel manufacturer."

with:

"Shaping by hot forming may conform to the requirements relating to hot forming in the relevant product standard and to the recommendations of the steel producer."

9 Modification to 6.5.4, "Cold forming"

Delete list items "b)", "e)" and "f)".

Renumber the retained list items as "a)" to "g)".

10 Modification to 6.6.3, "Execution of holing"

Add the following note after the 2nd paragraph:

"NOTE 1 The steel producer can give additional recommendations for punching holes in HSS."

Renumber the existing NOTE (after the 3rd paragraph) to NOTE 2.

11 Modification to 7.1, "General"

In 7.1 (2nd paragraph) replace "EN ISO 17660 series" with "EN ISO 17660-1 and EN ISO 17660-2".

Add at the end of 7.1:

"For HSS, the weld quality management system shall be in accordance with EN ISO 3834-2."

12 Modification to 7.4.1, "Qualification of welding procedures"

In 7.4.1.1 (1st paragraph), replace "the EN ISO 17660 series" with "EN ISO 17660-1".

Add at the end of 7.4.1.1:

"For HSS, to avoid a deterioration of the mechanical properties, $t_{8/5}$ cooling times may be determined in accordance with EN 1011-2.

NOTE The steel producers can advise on $t_{8/5}$ cooling times."

In 7.4.1.2 Table 12, delete "EN ISO 17660-2" (two times).

In 7.4.1.4, delete "EN ISO 17660-2".

13 Modification to 7.4.2, "Welders and welding operators"

In 7.4.2.1, 3rd paragraph, delete "EN ISO 17660-2".