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Structural steels — Part 6: Technical delivery conditions for seismic-proof improved structural steels for building

Aciers de construction — Partie 6: Conditions techniques de livraison pour aciers de construction améliorés sismiques pour bâtiment

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Contents

Foreword	6
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification and designation	2
4.1 Classification.....	2
4.2 Designation (grades and qualities).....	2
5 Information to be supplied by purchaser	2
5.1 Mandatory information.....	2
5.2 Options.....	2
6 Requirements	3
6.1 Steel-making process.....	3
6.2 Delivery condition.....	3
6.3 Chemical composition.....	3
6.3.1 Heat analysis.....	3
6.3.2 Product analysis.....	4
6.3.3 Carbon equivalent value (CEV) or parameter crack measurement (P_{CM}).....	4
6.3.4 Carbon equivalent value (CEV) or parameter crack measurement (P_{CM}) for steel products by thermomechanical controlled process.....	5
6.4 Mechanical properties.....	6
6.4.1 Tensile properties.....	6
6.4.2 Charpy V-notch impacts test.....	6
6.4.3 Through thickness characteristics.....	6
6.5 Surface conditions.....	7
6.6 Internal soundness.....	8
6.7 Dimensions, tolerances on dimensions and shape, mass.....	8
7 Inspection	9
8 Sampling — Frequency of testing.....	9
8.1 Verification.....	9
8.2 Test units.....	10
8.2.1 Tensile tests.....	10
8.2.2 Impact tests.....	10
8.2.3 Through thickness characteristics test.....	10
9 Test methods	10
10 Marking	10
Annex A (normative) Shapes and dimensions tolerances of H-sections	11
Annex B (normative) The formula of carbon equivalent and the maximum carbon equivalent value	17
Bibliography	19
Foreword	v
1 Scope	1

2	Normative references	1
3	Terms and definitions	1
4	Classification and designation	2
4.1	Classification	2
4.2	Designation (grades and qualities)	2
5	Information to be supplied by purchaser	2
5.1	Mandatory information	2
5.2	Options	2
6	Requirements	3
6.1	Steel-making process	3
6.2	Delivery condition	3
6.3	Chemical composition	3
6.3.1	Heat analysis	3
	Table 1 — Chemical composition % by mass (heat analysis)	3
6.3.2	Product analysis	4
	Table 2 — Permitted deviation for the product analysis relative to the specified heat analysis	4
6.3.3	Carbon equivalent value (CEV) or parameter crack measurement (P_{CM})	4
	Table 3 — CEV based on the heat analysis	4
	Table 4 — P_{CM} based on the heat analysis	5
6.3.4	Carbon equivalent value (CEV) or parameter crack measurement (P_{CM}) for steel products by thermomechanical controlled process	5
	Table 5 — Maximum CEV based on the heat analysis for steel products by thermomechanical controlled process	5
	Table 6 — Maximum P_{CM} based on the heat analysis for steel products by thermomechanical controlled process	6
6.4	Mechanical properties	6
6.4.1	Tensile properties	6
6.4.2	Charpy V-notch impacts test	6
6.4.3	Through thickness characteristics	6
	Table 7 — Mechanical properties at room temperature	7
	Table 8 — Charpy V-notch energy	7
6.5	Surface conditions	7
6.6	Internal soundness	8
6.7	Dimensions, tolerances on dimensions and shape, mass	8
	Table 9 — Tolerances on flange thickness of the H-section (Class A)	8
	Table 10 — Tolerances on flange thickness for the H-section (Class B)	8
	Figure 1 — Dimensions of the H-section	9
7	Inspection	9
8	Sampling — Frequency of testing	9
8.1	Verification	9
8.2	Test units	10
8.2.1	Tensile tests	10

8.2.2 Impact tests	10
8.2.3 Through-thickness characteristics test	10
9 Test methods	10
10 Marking	10
Annex A (normative) Shapes and dimensions tolerances of H-sections	11
Annex B (informative) The formula of carbon equivalent and the maximum carbon equivalent value	17
Bibliography	19

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO ~~documents~~document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

~~Attention is drawn~~ISO draws attention to the possibility that ~~some of the elements~~implementation of this document may ~~be involve~~ the ~~subject~~use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights. ~~Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).~~

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 17, *Steels*Steel, Subcommittee SC-3.4, *Steels* for structural purposes.

This second edition cancels and replaces the first edition (ISO 630-6:2014), which has been technically revised.

The main changes are as follows:

- steel grades and qualities have been updated in the scope with the addition of a new grade (SA390) and four qualities (D, D+, E and E+);
- the maximum nominal thickness for plate has been changed from 125 mm to 150 mm;
- the specification of delivery conditions has been added to the scope to align with other parts of the ISO 630 series;
- the list of normative references has been updated;
- some terms and definitions concerning heat treatments have been deleted because they are already included in 630-1;

- four qualities (D, D+, E and E+) have been added to 4.2;
- in the tables, the designations concerning thickness have been changed to “nominal thickness”;
- specified values for SA390 have been added to Tables 1, 3, 4, 5, 6, 7 and 8;
- four new qualities (D, D+, E and E+) have been added to Table 8
- the layout of Table 3, 4, 5, 6, B.1, and B.2 has been updated.

A list of all parts in the ISO 630 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Structural steels — Part 6: Technical delivery conditions for seismic-proof improved structural steels for building

1 Scope

This document specifies qualities for steels for seismic-proof improved structural use. It ~~applies~~ **applies** ~~is applicable~~ to steel plates rolled on a reversing mill, wide flats, hot-rolled sections, which are used in the as-rolled condition, with the exception of grade SA440, which is normally produced using quenched and tempered or thermomechanical controlled process and normally intended for welded or bolted structures.

This document covers 5 steel grades and 7 qualities. Grades SA235, SA325, SA345, SA390 and SA440 are covered. Not all grades are available in all qualities, and some qualities have Charpy V-notch requirements.

The steels specified in this document are applicable to hot-rolled plates, wide flats, and sections with a minimum nominal thickness of 6 mm and a maximum nominal thickness of 150 mm for steel plates, and a maximum nominal thickness of 140 mm for wide flats and hot-rolled sections.

This document does not include the following structural steels, some of which are covered by other International Standards:

- sheet and strip: ~~refer to ISO TC 17/SC 12 "Continuous mill flat rolled products", e.g. ISO 4995 or ISO 4996;~~
- tubular products: ~~refer to, e.g. ISO TC 5/SC 12633-1 "Steel tubes"~~

NOTE 1 Lists of standards covered by ISO/TC 17/SC 12 and ISO/TC 5/SC 1 are available on the ISO Web site.

NOTE 12633-2 In all parts of ISO 630, the

NOTE The term of "thickness" is considered as "nominal thickness", unless otherwise stated.

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.

ISO 630-1, *Structural steels — Part 1: General technical delivery conditions for hot-rolled products*

ISO 7452, *Hot-rolled steel plates — Tolerances on dimensions and shape*

ISO 9034, *Hot-rolled structural steel wide flats — Tolerances on dimensions and shape*

ISO 7778, *Through-thickness characteristics for steel products*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 630-1 apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>

ISO/FDIS 630-6:2023(E)

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

4 Classification and designation

4.1 Classification

The steel grades specified in this document shall be classified as unalloyed or alloy steels.

4.2 Designation (grades and qualities)

This document specifies 5 steel grades— Grades SA235, SA325, SA345, SA390 and SA440. Each grade is available in up to 7 qualities.

- Quality A: no impact testing.
- Quality C: impact testing at 0 °C.
- Quality C+: impact testing at 0 °C and through-thickness characteristics testing.
- Quality D: impact testing at -20 °C.
- Quality D+: impact testing at -20 °C and through-thickness characteristics testing.
- Quality E: impact testing at -40 °C.
- Quality E+: impact testing at -40 °C and through-thickness characteristics testing.

5 Information to be supplied by purchaser

5.1 Mandatory information

The information that shall be supplied by the purchaser at the time of the order is specified in ISO 630-1.

5.2 Options

The options of ISO 630-1 may apply. In addition, the following options may apply ~~to products according to this part. If the purchaser does not indicate a wish to implement any of these options at the time of the order, the products shall be supplied in accordance with the basic specification (see 5.1).~~

- a) Testing of impact properties in the transverse direction using Charpy V-notch test pieces in accordance with ISO 630-1.
- b) Testing of tensile and impact properties at a frequency per each plate as heat-treated.
- c) On special request of the purchaser, the manufacturer ~~shall~~may inform the purchaser at the time of the order which of the alloying elements appropriate to the steel grade required will be deliberately added to the material to be delivered and reported in the heat analysis.
- d) On special request of the purchaser, the manufacturer ~~shall~~may inform the purchaser at the time of the order which of the alloying elements appropriate to the steel grade required will be deliberately added to the material to be delivered and reported in the product analysis. The product analysis ~~shall~~may be carried out at an agreed frequency when specified at the time of the order.
- e) ~~Through thickness characteristics "Class Z25" in accordance with ISO 7778 (see 6.4.3).~~