
Structural steels —

Part 4:

Technical delivery conditions for high-yield-strength quenched and tempered structural steel plates

Aciers de construction —

Partie 4: Conditions techniques de livraison pour tôles en acier de construction trempé et revenu à haute limite d'élasticité



This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification and designation	2
4.1 Classification	2
4.2 Grades and qualities	2
4.3 Normative annexes	2
5 Information to be supplied by purchaser	2
5.1 Mandatory information	2
5.2 Options	2
6 Requirements	3
6.1 Steelmaking process	3
6.2 Deoxidation	3
6.3 Delivery condition	3
6.4 Chemical composition	3
6.5 Mechanical properties	3
6.6 Surface conditions	4
6.7 Internal soundness	4
6.8 Dimensions and tolerances on dimensions, shape and mass	4
7 Inspection	4
8 Sampling — Frequency of testing	4
8.1 Verification	4
8.2 Test units	4
9 Test methods	4
10 Marking	4
Annex A (normative) Steel grades S460Q, S500Q, S550Q, S620Q, S690Q, S890Q and S960Q: Chemical composition and mechanical properties	5
Annex B (normative) Steel grades SG460Q, SG500Q, and SG700Q: Chemical composition and mechanical properties	11
Bibliography	15

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 630-4 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 3, *Steels for structural purposes*.

This first edition cancels and replaces ISO 630:1995, which has been technically revised. It incorporates ISO 630:1995/Amd 1:2003.

ISO 630 consists of the following parts, under the general title *Structural steels*:

- *Part 1: General technical delivery conditions for hot-rolled products*
- *Part 2: Technical delivery conditions for structural steels for general purposes*
- *Part 3: Technical delivery conditions for fine-grain structural steels*
- *Part 4: Technical delivery conditions for high-yield-strength quenched and tempered structural steel plates*

The following parts are under preparation:

- *Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance*
- *Part 6: Technical delivery conditions for seismic improved structural steels for building*

Structural steels —

Part 4:

Technical delivery conditions for high-yield-strength quenched and tempered structural steel plates

1 Scope

This part of ISO 630 specifies qualities for high-yield-strength quenched and tempered structural steels. This part of ISO 630 applies to steel plates rolled on a reversing mill which are used in the quenched and tempered condition and normally intended for welded or bolted structures.

This part of ISO 630 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*;
- Tubular products — refer to ISO TC 5/SC 1, *Steel tubes*.

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

This part of ISO 630 covers 10 grades. Grades S460Q, S500Q, S550Q, S620Q, S690Q, S890Q and S960Q are covered in Annex A. Grades SG460Q, SG500Q, and SG700Q are covered in Annex B.

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.

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

ISO 643, *Steels — Micrographic determination of the apparent grain size*

3 Terms and definitions

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

3.1

quenching

operation which consists of cooling a ferrous product more rapidly than in still air from a high temperature above A_{c1}

NOTE A_{c1} is the temperature at which austenite begins to form during heating.

3.2

tempering

heat treatment applying to a ferrous product, generally after quench hardening, or another heat treatment to bring the properties to the required level, and consisting of heating to specific temperatures ($< A_{c1}$) and soaking for an appropriate duration, followed by cooling at an appropriate rate

NOTE Additionally, the following may apply: processes of direct quenching plus tempering.