INTERNATIONAL STANDARD

ISO 4960

Fourth edition
2019-07

Steel strip, cold-reduced with a mass fraction of carbon over 0,25 %

Feuillards en acier au carbone laminés à froid à teneur en carbone supérieure à 0,25 %

Reference number
ISO 4960:2019(E)

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Contents

Page

Foreword

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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 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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 12, *Continuous mill flat rolled products*.

This fourth edition cancels and replaces the third edition (ISO 4960:2007), which has been technically revised. The main changes compared to the previous edition are as follows:

— added definitions for surface finishes and "lot";

— revised scope;

— added Clause 4 for “Dimensions”;

— “Specified qualities appropriate to the particular grade” changed to “Ordering conditions”, renumbered as 5.3;

— 5.5.1 changed from HRB to HRBW;

— previous 5.5 changed to 5.8 using revised surface finish terminology, addition of surface roughness requirements;

— revised Table 5.

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.

Steel strip, cold-reduced with a mass fraction of carbon over 0,25 %

1 Scope

This document specifies the minimum requirements for steel strip of carbon over 0,25 %, in coils and cut lengths.

The product is applicable to highly stressed parts of many different types and is characterized by close dimensional tolerances and controlled surface finishes.

The steel strip is produced in a number of types and surface finishes to be compatible with differing applications requirements.

This document does not apply to alloy steels or stainless steels.

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 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

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

3 Terms and definitions

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

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

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

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

3.1
cold-reduced carbon steel strip
product produced from a hot-rolled pickled coil which has been given substantial cold reduction

Note 1 to entry: The product is characterized by an improved surface, greater uniformity in thickness and improved mechanical properties compared to hot-rolled strip. A cold-reduced strip is also characterized by tighter thickness tolerances than a cold-reduced sheet, as well as by specified edges.

3.2
skin pass
light cold rolling of the product

Note 1 to entry: The purpose of the skin passing is one or more of the following: to minimize the appearance of coil breaks, stretcher strains and fluting; to control the shape; and to obtain the required surface finish.

Note 2 to entry: Some increase in hardness and some loss in ductility will result from skin passing.

3.3
mill edge
normal side edge without any definite contour produced in hot rolling

Note 1 to entry: Mill edges may contain some irregularities, such as cracked or torn edges or thin (feathered) edges.

3.4
sheared edge
material with a burr developed where the material was cut

3.5
matte finish
dull finish
rougher finish obtained by temper passing cold-reduced strip using rolls roughened by mechanical or chemical means

Note 1 to entry: Surface roughness of the strip is typically *Ra* 0,5 µm to 2,0 µm, which is beneficial in obtaining better paint adhesion, and in aiding drawing by reducing surface friction due to better oil adhesion.

3.6
regular bright finish
moderately bright reflective lustre finish obtained by temper passing cold-reduced strip using rolls with a ground finish

Note 1 to entry: Surface roughness of the strip is typically *Ra* 0,5 µm, which is suitable for many applications but not necessarily for bright plating applications.

3.7
plating bright finish
smooth bright finish where a high lustre is not necessary obtained by temper passing cold-reduced strip using rolls with a fine ground finish

Note 1 to entry: Surface roughness of the strip is typically *Ra* 0,25 µm max.

3.8
best bright finish
mirror bright finish obtained by temper passing cold-reduced strip using rolls with a polished finish

Note 1 to entry: Surface roughness is of the strip is typically *Ra* 0,10 µm max., which is suitable for bright plating.

3.9
lot
up to a specified quantity of material of the same designation rolled to the same thickness and surface condition

4 Dimensions

Cold-reduced steel strip is commonly produced in thicknesses of 6 mm and under, and in widths up to 600 mm, in coils and cut lengths. Strip products may be available in widths greater than 600 mm by agreement between producer and purchaser; however, such products are typically classified as cold-rolled sheet.

5 Conditions of manufacture

5.1 Steelmaking

Unless otherwise agreed by the interested parties, the processes used in making the steel and in manufacturing steel strips are left to the discretion of the manufacturer. On request, the purchaser shall be informed of the steelmaking process being used.