

BS ISO 15211:2012



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Continuous hot-dip zinc-coated twin-roll cast steel sheet of structural quality and high strength steel

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National foreword

This British Standard is the UK implementation of ISO 15211:2012.

The UK participation in its preparation was entrusted to Technical Committee ISE/109, Coated and Uncoated Flat Products to be Used for Cold Forming.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Continuous hot-dip zinc-coated twin-roll cast steel sheet of structural quality and high strength steel

*Tôles coulées entre cylindres et galvanisées en continu par immersion à
chaud, de qualité destinée à la construction et en acier à haute résistance*





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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.

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 15211 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 12, *Continuous mill flat rolled products*.

Continuous hot-dip zinc-coated twin-roll cast steel sheet of structural quality and high strength steel

1 Scope

This International Standard specifies the characteristics of continuous hot-dip zinc-coated twin-roll cast steel sheet products of structural quality and high strength steel.

The product is intended for applications where resistance to corrosion is of prime importance.

The steel sheet is produced in a number of grades, coating mass, ordering conditions and surface treatments.

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 1460, *Metallic coatings — Hot dip galvanized coatings on ferrous materials — Gravimetric determination of the mass per unit area*

ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method*

ISO 3497, *Metallic coatings — Measurement of coating thickness — X-ray spectrometric methods*

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

ISO 7438, *Metallic materials — Bend test*

ISO 16160, *Hot-rolled steel sheet products — Dimensional and shape tolerances*

ISO 16162, *Cold-rolled steel sheet products — Dimensional and shape tolerances*

ISO 16163, *Continuously hot-dipped coated steel sheet products — Dimensional and shape tolerances*

3 Terms and definitions

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

3.1

continuous hot-dip zinc-coated steel sheet

product obtained by hot-dip coating of cold-reduced sheet coils or hot-rolled descaled sheet coils on a continuous zinc-coating line

3.2

normal coating

layer formed as a result of unrestricted growth of zinc or zinc alloy crystals during normal solidification

NOTE Normal coating has a metallic lustre and is the type normally furnished for a wide variety of applications. It may be furnished as coating conditions S or N (see 11.4); however, it can be variable in appearance and is not suitable for decorative painting.

3.3

minimized spangle coating

finish obtained by restricting normal spangle formation during the solidification of the zinc or zinc alloy

NOTE This product may have some lack of uniformity in surface appearance within a coil or from coil to coil

3.4

smooth finish

surface produced by skin-passing the coated material in order to achieve an improved smooth surface condition as compared with the normal as-coated product

3.5

differential coating

layer having a specified coating-mass designation on one surface and a different coating-mass designation on the other surface

3.6

skin pass

light cold rolling of the zinc-coated steel sheet

NOTE The purpose of the skin pass is to produce a higher degree of surface smoothness and, thereby, improve the surface appearance. The skin pass also temporarily minimizes the occurrence of a surface condition known as stretcher strain (Luder's Lines) or fluting during the fabrication of finished parts. The skin pass also controls and improves flatness. Some increase in hardness and loss of ductility can result from skin passing.

3.7

twin-roll cast steel sheet

steel sheet produced by casting to near final thickness directly from the liquid metal with minimal hot-rolling to achieve the final thickness

4 Thickness

4.1 Zinc-coated structural quality and high strength twin-roll cast steel sheet is produced in thicknesses of up to 2,0 mm after zinc coating, and in widths of up to 2 000 mm in coils and cut lengths.

4.2 Zinc-coated sheets less than 600 mm wide may be slit from wide sheets and may be considered sheets.

4.3 The thickness of zinc-coated twin-roll cast sheet steel may be specified as a combination of the base metal and metallic coating, or base metal alone. The purchaser shall indicate on the order which method of specifying thickness is required. In the event that the purchaser does not indicate any preference, the thickness as a combination of the base metal and coating will be provided. Annex A describes the requirements for specifying the thickness as base metal alone.

5 Conditions of manufacture

5.1 Chemical composition

The chemical composition (heat analysis) shall not exceed the values given in Tables 1, 2 and 3. Upon request, a report of the heat analysis shall be made to the purchaser.

A verification analysis (product analysis) may be carried out by the purchaser to verify the specified analysis of the semi-finished or finished steel. The product analysis tolerances are shown in Table 4.

The processes used in making the steel and in manufacturing the zinc-coated sheet of structural quality are left to the discretion of the manufacturer. If requested, the purchaser shall be informed of the steel-making process being used.