



BSI Standards Publication

## Cold formed welded steel structural hollow sections

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Part 2: Tolerances, dimensions and sectional properties

## National foreword

This British Standard is the UK implementation of EN 10219-2:2019. It supersedes BS EN 10219-2:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/103, Structural Steels Other Than Reinforcements.

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

The UK committee draws users' attention to the fact that EN 10219-2:2006 is included in the normative references of BS EN 10219-1:2006. Furthermore, at the time of publication of this standard, EN 10219-1:2006 is cited in the Official Journal of the European Union (OJEU) under EU Directive 89/106/EEC (CPD) Construction products (CPD/CPR).

For CE marking purposes under the CPD/CPR, the UK committee advises users that when a standard is included in the normative references of a standard cited in the OJEU, it continues to be used for CE marking until the citation in the OJEU is revised. In the case of this standard, therefore, users should continue to refer to EN 10219-2:2006 for CE marking purposes under the CPD/CPR until the citation of EN 10219-1:2006 in the OJEU is revised.

For further information, see [www.ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products\\_en](http://www.ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products_en).

In addition to the main changes with respect to the previous edition listed in the European foreword, the UK committee also draws users' attention to the following changes:

- Clarification of the tolerances to be used for elliptical hollow sections (new column in Table 2)
- Clarification of the measurement of twist of elliptical hollow sections (new Figure 7)

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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### Amendments/corrigenda issued since publication

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EUROPEAN STANDARD

**EN 10219-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

## Cold formed welded steel structural hollow sections - Part 2: Tolerances, dimensions and sectional properties

Profils creux de construction soudés, formés à froid en  
aciers - Partie 2 : Tolérances, dimensions et  
caractéristiques du profil

Kaltgeformte geschweißte Hohlprofile für den Stahlbau  
- Teil 2: Grenzabmaße, Maße und statische Werte

This European Standard was approved by CEN on 20 March 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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 10219-2:2019) has been prepared by Technical Committee CEN/TC 459 “ECISS - European Committee for Iron and Steel Standardization”<sup>1</sup>, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

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

This document supersedes EN 10219-2:2006.

The main changes with respect to the previous edition are listed below:

- a) elliptical hollow sections were added;
- b) Annex A concerning the additional tolerances for piling tubes was removed;
- c) subclause 5.2 was added with one option;
- d) in Table 3 the length tolerances for exact length were changed;
- e) in 7.1 one paragraph was added;
- f) standard was editorially revised.

This standard consists of the following parts:

- EN 10368, *Steel structural hollow sections – General (Characteristics, evaluation of conformity and marking)* (in preparation)
- EN 10219-1, *Cold formed welded steel structural hollow sections - Part 1: Technical delivery conditions*
- EN 10219-2, *Cold formed welded steel structural hollow sections - Part 2: Tolerances, dimensions and sectional properties*
- EN 10219-3, *Cold formed welded steel structural hollow sections - Part 3: Technical delivery conditions for mechanical engineering purposes* (in preparation)

It forms part of a series of standards on hollow sections together with EN 10210-1 to EN 10210-3.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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<sup>1</sup> Through its subcommittee SC 3 “Structural steels other than reinforcements” (secretariat: DIN)

## 1 Scope

This document specifies tolerances for cold formed welded circular, square, rectangular and elliptical structural hollow sections, manufactured in wall thicknesses up to 40 mm, in the following size ranges:

- circular: Outside diameters up to 2 500 mm;
- square: Outside dimensions up to 500 mm × 500 mm;
- rectangular: Outside dimensions up to 500 mm × 300 mm;
- elliptical: Outside dimensions up to 480 mm × 240 mm.

The formulae for calculating sectional properties of sections manufactured to the dimensional tolerances of this standard, to be used for the purposes of structural design, are given in Annex A.

Dimensions and sectional properties for a limited range of more common sizes are given in Annex B.

NOTE The designation of the sections' major axis (yy) and minor axis (zz) aligns with the axis designation used for structural design in the structural Eurocodes.

## 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.

EN 10219-1, *Cold formed welded structural hollow sections of non-alloy and fine grain steels — Part 1: Technical delivery conditions*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10219-1 apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

## 4 Symbols

For the purposes of this document, the symbols defined in Table 1 apply.

**Table 1 — Symbols and definitions**

Symbol	Unit	Definition
$A$	cm <sup>2</sup>	Cross-sectional area
$A_m$	mm <sup>2</sup>	Area of the surface delimited by the perimeter at mid-thickness
$A_s$	m <sup>2</sup> /m	Superficial area per metre length
$B$	mm	Specified side dimension of a square hollow section. Specified dimension of the shorter side of a rectangular hollow section. Specified outside dimension of an elliptical section on its minor axis
$C_1/C_2$	mm	Length of corner region of a square or rectangular hollow section