

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

BS EN 10305-5:2016



BSI Standards Publication

Steel tubes for precision applications — Technical delivery conditions

Part 5: Welded cold sized square and rectangular tubes

bsi.

...making excellence a habit.™

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of EN 10305-5:2016. It supersedes BS EN 10305-5:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/110, Steel Tubes, and Iron and Steel Fittings.

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

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

© The British Standards Institution 2016.
Published by BSI Standards Limited 2016

ISBN 978 0 580 90489 9

ICS 77.140.75

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2016.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

EUROPÄISCHE NORM

March 2016

ICS 77.140.75

Supersedes EN 10305-5:2010

English Version

Steel tubes for precision applications - Technical delivery conditions - Part 5: Welded cold sized square and rectangular tubes

Tubes de précision en acier - Conditions techniques de livraison - Partie 5 : Tubes soudés calibrés avec section carrée et rectangulaire

Präzisionsstahlrohre - Technische Lieferbedingungen - Teil 5: Geschweißte maßumgeformte Rohre mit quadratischem und rechteckigem Querschnitt

This European Standard was approved by CEN on 18 January 2016.

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.

CEN members are the national standards bodies of 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

Contents	Page
European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Symbols.....	6
5 Classification and designation.....	6
5.1 Classification.....	6
5.2 Designation.....	6
6 Information to be supplied by the purchaser	7
6.1 Mandatory information	7
6.2 Options.....	7
6.3 Example of an order	8
7 Manufacturing process.....	8
7.1 Steelmaking process	8
7.2 Tube manufacture and delivery conditions	8
8 Requirements	9
8.1 General.....	9
8.2 Chemical composition	9
8.3 Mechanical properties.....	11
8.4 Appearance and internal soundness.....	12
8.5 Dimensions and tolerances	13
8.5.1 Side length(s), wall thickness and mass per unit length.....	13
8.5.2 Side length(s) tolerances.....	14
8.5.3 Wall thickness tolerances	15
8.5.4 Corner profile	16
8.5.5 Length and length tolerances	16
8.5.6 Straightness.....	17
8.5.7 Squareness of sides	17
8.5.8 Concavity and convexity	18
8.5.9 Twist	18
8.5.10 Preparation of ends.....	18
9 Inspection	19
9.1 Types of inspection.....	19
9.2 Inspection documents	19
9.2.1 Types of inspection documents.....	19
9.2.2 Content of inspection documents.....	19
9.3 Summary of inspection and testing.....	20
10 Sampling.....	20
10.1 Frequency of tests	20
10.1.1 Test unit.....	20
10.1.2 Number of sample tubes.....	20
10.2 Preparation of samples and test pieces	20

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

10.2.1	General	20
10.2.2	Test pieces for the tensile test	21
10.2.3	Test pieces for outside roughness measurement	21
11	Test methods.....	21
11.1	Tensile test.....	21
11.2	Dimensional inspection.....	22
11.3	Roughness measurement	22
11.4	Visual examination	22
11.5	Non-destructive testing.....	22
11.6	Retests, sorting and reprocessing.....	22
12	Marking	22
13	Protection and packaging.....	23
	Bibliography	24

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN 10305-5:2016) has been prepared by Technical Committee ECISS/TC 110 "Steel tubes and iron and steel fittings", the secretariat of which is held by UNI.

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 September 2016 and conflicting national standards shall be withdrawn at the latest by September 2016.

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

This document supersedes EN 10305-5:2010.

In comparison with the previous edition, the following technical changes have been made:

- a) References were adapted;
- b) The options were renumbered in such a way that now throughout all parts the number of options are the same;
- c) Addition of steel grades E460, E500, E550, E600 and E700;
- d) Editorial updates.

EN 10305, *Steel tubes for precision applications - Technical delivery conditions* consists of the following parts:

- *Part 1: Seamless cold drawn tubes*
- *Part 2: Welded cold drawn tubes*
- *Part 3: Welded cold sized tubes*
- *Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems*
- *Part 5: Welded cold sized square and rectangular tubes*
- *Part 6: Welded cold drawn tubes for hydraulic and pneumatic power systems*

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

This is a preview of "BS EN 10305-5:2016". [Click here to purchase the full version from the ANSI store.](#)

1 Scope

This European Standard specifies the technical delivery conditions for welded cold sized steel tubes of square and rectangular cross section for precision applications.

Tubes according to this document are characterized by having precisely defined tolerances on dimension and a specified maximum surface roughness. Typical fields of application are in the automotive, furniture and general engineering industries.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10020:2000, *Definition and classification of grades of steel*

EN 10021:2006, *General technical delivery conditions for steel products*

EN 10027-1, *Designation systems for steels - Part 1: Steel names*

EN 10027-2, *Designation systems for steels - Part 2: Numerical system*

EN 10052:1993, *Vocabulary of heat treatment terms for ferrous products*

EN 10168, *Steel products - Inspection documents - List of information and description*

EN 10204, *Metallic products - Types of inspection documents*

EN 10266:2003, *Steel tubes, fittings and structural hollow sections - Symbols and definitions of terms for use in product standards*

EN ISO 377, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377)*

EN ISO 2566-1, *Steel - Conversion of elongation values - Part 1: Carbon and low alloy steels (ISO 2566-1)*

EN ISO 4287, *Geometrical product specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters (ISO 4287)*

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

EN ISO 10893-2, *Non-destructive testing of steel tubes - Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections (ISO 10893-2)*

EN ISO 10893-11, *Non-destructive testing of steel tubes - Part 11: Automated ultrasonic testing of the weld seam of welded steel tubes for the detection of longitudinal and/or transverse imperfections (ISO 10893-11)*

ISO 11484, *Steel products - Employer's qualification system for non-destructive testing (NDT) personnel*