BRITISH STANDARD

BS EN 10305-5:2003

Incorporating corrigendum no. 1

Steel tubes for precision applications — Technical delivery conditions —

Part 5: Welded and cold sized square and rectangular tubes

The European Standard EN 10305-5:2003 has the status of a British Standard

ICS 77.140.75

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee ISE/8, Steel pipes.

A list of organizations represented on ISE/8 can be obtained on request to its secretary.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 2 May 2003

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

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Foreword

This document (EN 10305-5:2003) has been prepared by Technical Committee ECISS/TC 29, "Steel tubes and fittings for steel tubes", 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of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This European Standard consists of the following parts under the general title *Steel tubes for precision applications – Technical delivery conditions:*

¾ Part 1*: Seamless cold drawn tubes*

¾ Part 2*: Welded cold drawn tubes*

¾ Part 3*: Welded cold sized tubes*

¾ Part 4*: Seamless cold drawn tubes for hydraulic and pneumatic power systems*

¾ Part 5*: Welded and cold sized square and rectangular tubes*

¾ Part 6*: Welded cold drawn tubes for hydraulic and pneumatic power systems*

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

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

Tubes according to this part of this European Standard are characterised by having precisely defined tolerances on dimension and a specified surface roughness. Typical fields of application are in the vehicle, furniture and general engineering industries.

2 Normative references

This European Standard incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature.*

EN 10020, *Definition and classification of grades of steel.*

EN 10021, *General technical delivery requirements for steel and iron products.*

EN 10027-1, *Designation systems for steel — Part1: Steel names, principal symbols*.

EN 10027-2, *Designation systems for steel — Part2: Numerical system.*

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

prEN 10168[1)], *Steel products - Inspection documents - List of information and description.*

EN 10204, *Metallic products — Types of inspection documents.*

EN 10246-3, *Non-destructive testing of steel tubes — Part 3: Automatic eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections.*

EN 10246-8, *Non-destructive testing of steel tubes - Part 8: Automatic ultrasonic testing of the weld seam of electric welded steel tubes for the detection of longitudinal imperfections.*

EN 10256, *Non-destructive testing of steel tubes — Qualification and competence of level 1 and level 2 non-destructive testing personnel.*

CR 10260, *Designation system for steel — Additional symbols.*

prEN 10266[1)], *Steel tubes, fittings and structural hollow sections — Definitions and symbols for use in product standards.*

EN ISO 377, *Steel and steel products - Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997).*

EN ISO 2566-1, *Steel — Conversion of elongation values — Part 1: Carbon and low alloy steels (ISO 2566-1:1984).*

[1)] In preparation, until this document is published as a European Standard a corresponding national standard should be agreed at the time of enquiry and order.

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EN ISO 4287, *Geometrical product specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters (ISO 4287:1997).*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply in addition to the terms and definitions in EN 10020, EN 10021, EN 10052 and prEN 10266.

3.1
employer
organization for which a person works on a regular basis

NOTE The employer can be either the tube manufacturer or a third party organization providing non-destructive testing (NDT) services.

3.2
parent coil
coil originating from the hot rolling process prior to any further operation (pickling, slitting, cold rolling or coating)

4 Symbols

See prEN 10266.

5 Classification and designation

5.1 Classification

In accordance with the classification system in EN 10020 the steel grades given in Table 2 are non-alloy quality steels.

5.2 Designation

For the tubes covered by this part of EN 10305 the steel designation consists of:

¾ the number of this part of EN 10305;

plus either:

¾ the steel name in accordance with EN 10027-1 and CR 10260; or

¾ the steel number in accordance with EN 10027-2.

NOTE A list of corresponding former national designations (of similar steel grades) is given in Table A.1.

6 Information to be supplied by the purchaser

6.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order*:*

a) the quantity (mass or total length or number of pieces);

b) the term "tube“;

c) the dimensions (see 8.5);

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d) the designation of the steel grade in accordance with this part of this European Standard (see 5.2);

e) the delivery condition including the surface condition (see 7.2.1 and 7.2.2).

6.2 Options

A number of options are specified in this part of this European Standard and these are listed below. In the event that the purchaser does not indicate a wish to implement any of these options at the time of enquiry and order, the tubes shall be supplied in accordance with the basic specification (see 6.1).

1) suitability for hot dip galvanizing (see 7.2.1);

2) specification of a steel grade not specified in this part of this European Standard (see 8.2);

3) surface condition for further processing (see 8.4.1.1);

4) position of the weld line (see 8.4.1.5);

5) removal of internal weld bead (see 8.4.1.6);

6) measurement of surface roughness (see 8.4.1.7);

7) lower surface roughness (see 8.4.1.7);

8) non-destructive testing of the weld seam for the detection of longitudinal imperfections (see 8.4.2);

9) reduced wall thickness tolerance (see 8.5.3);

10) wall thickness tolerance unilateral (see 8.5.3);

11) exact length (see 8.5.5);

12) another specified length and/or tolerance (see 8.5.5);

13) special end finishing (see 8.5.10);

14) specific inspection (see 9.1);

15) test unit with tubes from one cast only (see 10.1.1);

16) alternative marking (see clause 12);

17) delivery without corrosion protection (see clause 13);

18) specified corrosion protection (see clause 13);

19) specified method of packaging (see clause 13).

6.3 Example of an order

12 000 m tube, size 50 mm 30 mm with a wall thickness of 3 mm in accordance with EN 10305-5, made of steel grade E235 in the normalized condition with strip surface condition S2 (pickled) with a 3.1.B inspection certificate in accordance with EN 10204:

12 000 m tube – 50 30 3 - EN 10305-5 - E235+N - S2 - Option 14.

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