



SLOVENSKI STANDARD
SIST EN 10255:2004+A1:2007

01-junij-2007

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Non-Alloy steel tubes suitable for welding and threading - Technical delivery conditions

Rohre aus unlegiertem Stahl mit Eignung zum Schweißen und Gewindeschneiden -
Technische Lieferbedingungen

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Tubes en acier non-allié filetables et soudables - Conditions techniques de livraison

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Ta slovenski standard je istoveten z: EN 10255:2004+A1:2007

ICS:

23.040.10 Železne in jeklene cevi Iron and steel pipes

SIST EN 10255:2004+A1:2007 en;fr;de

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EUROPEAN STANDARD

EN 10255:2004+A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2007

ICS 23.040.10

Supersedes EN 10255:2004

English Version

Non-Alloy steel tubes suitable for welding and threading - Technical delivery conditions

Tubes en acier non-allié filetables et soudables -
Conditions techniques de livraison

Rohre aus unlegiertem Stahl mit Eignung zum Schweißen
und Gewindeschneiden - Technische Lieferbedingungen

This European Standard was approved by CEN on 27 May 2004 and includes Amendment 1 approved by CEN on on 5 March 2007.

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

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Foreword

This document (EN 10255:2004+A1:2007) 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 document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2007 and conflicting national standards shall be withdrawn at the latest by October 2007.

This document includes Amendment 1, approved by CEN on 2007-03-05.

This document supersedes EN 10255:2004.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A_1}$ and $\boxed{A_1}$.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 89/106/EEC.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard has been derived, with modifications, from ISO 65 “Carbon steel tube suitable for screwing in accordance with ISO 7/1”.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies the requirements for circular non-alloy steel tubes suitable for welding and threading and provides a number of options for the finish of tube ends and coatings. This document covers tubes of specified outside diameter 10,2 mm to 165,1 mm (thread size 1/8 to 6) in two series, medium and heavy, and three types of designated thicknesses.

NOTE Tubes manufactured according to this document can be used for the conveyance of fluids as well as for other applications.

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.

The requirements of this European Standard rule when they differ from those in the standards and documents referred to below:

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 for steel products*

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

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

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

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

EN 10240, *Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants*

EN 10241, *Steel threaded pipe fittings*

EN 10242, *Threaded pipe fittings in malleable cast iron*

EN 10246-1, *Non destructive testing of steel tubes - Part 1: Automatic electromagnetic testing of seamless and welded (except submerged arc welded) ferromagnetic steel tubes for verification of hydraulic leak-tightness*

EN 10226-1 *Pipe threads where pressure-tight joints are made on the threads - Part 1: Taper external threads and parallel internal threads - Dimensions, tolerances and designation*

EN 10226-2, *Pipe threads where pressure-tight joints are made on the threads - Part 2: Taper external threads and taper internal threads - Dimensions, tolerances and designation*

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

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:1999)*

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

EN ISO 8491, *Metallic materials - Tube (in full section) - Bend test (ISO 8491:1998)*

EN ISO 8492, *Metallic materials - Tube - Flattening test (ISO 8492:1998)*

EN ISO 9001, *Quality management systems - Requirements (ISO 9001:2000)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 10020:2000, EN 10021:1993, EN 10266:2003 and the following apply.

3.1

Series and Types

designation used in conjunction with the diameter to define the thickness and the mass per unit length of the tube

3.2

Bare tube

tube whose surface is as manufactured without subsequent coating

4 Classification and designation

The steel specified in this document is classified as a non-alloy quality steel in accordance with EN 10020.

The steel name S195 T has been established in accordance with EN 10027-1.

The steel number 1.0026... has been established in accordance with EN 10027-2.

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5 Information to be obtained from the purchaser

5.1 Mandatory information

The following information shall be obtained from the purchaser at the time of enquiry and order:

- Quantity (mass or total length or number of tubes);
- Seamless or Welded tube manufacturing process (S or W);
- The term "tube";
- The number of this European Standard (EN 10255);
- Specified outside diameter (D) in millimetres or thread size (R) (see Table 2 or Annex B);
- Wall thickness (T) in millimetres or series (M or H) (see Table 2) or type (L or L1 or L2) (see Annex B).

5.2 Options

A number of options are specified in this document 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 5.1).

- Threaded ends (see 7.2);
- Tube with socket (see 7.2);

- 3) Socket type to be specified (see 7.2);
- 4) Closed ends to prevent ingress of foreign matter (see 7.2);
- 5) Thread varnish or thread protection (see 7.2);
- 6) Suitable for galvanizing to EN ISO 1461, or to EN 10240 coating quality other than A.1 (see 7.3);
- 7) Suitable for galvanizing to EN 10240 coating quality A.1 (see 7.3);
- 8) Hot dip galvanized to EN ISO 1461 (see 7.4);
- 9) Hot dip galvanized to EN 10240, coating quality to be specified (see 7.4);
- 10) Delivery length (see 8.4.10);
- 11) Inspection document type 2.2 (see 9.2);
- 12) Temporary protective coating (see Clause 11).

5.3 Examples of ordering

5.3.1 By outside diameter and thickness

To order 6000 metres of seamless tubes in accordance with EN 10255, with 26.9 mm outside diameter, 2.6 mm wall thickness, galvanized according to EN 10240 - coating quality A.1, threaded.

EXAMPLE 6000 m - S tubes - 26,9 x 2,6 - EN 10255 - Options 1 and 9: A.1.

5.3.2 By thread size and series

To order 80 tonnes of welded tubes in accordance with EN 10255, with thread size 2, series medium, in standard length of 6,4 m with caps or plugs fitted to the ends.

EXAMPLE 80 t - W tubes - 2 - M - EN 10255 - Options 4 and 10: 6.4 m.

6 Manufacturing process

6.1 Steelmaking process

The steelmaking process is at the discretion of the manufacturer. The steel shall be fully killed.

6.2 Tube manufacturing process

The tubes shall be manufactured by a seamless (S) or longitudinally welded (W) process, as specified (see 5.1 b).

Cold formed tubes of Type L shall be heat treated (see B.2). The other series and types of tubes may be heat treated at the discretion of the manufacturer

Tubes shall not include welds used to join lengths of strip prior to forming the tube.

7 Delivery conditions

7.1 General

Unless otherwise specified (see 7.2 to 7.4) the tubes shall be supplied bare with plain ends. The tube ends shall be cut nominally square to the axis of the tube and shall be free from excessive burrs.

7.2 Alternative finishes and protection of the tube ends

Alternative types of end finish may be obtained by selecting from the following options:

Option 1: *Tube ends shall be supplied with external taper threads in accordance with EN 10226-1 / EN 10226-2.*

Option 2: *Tube shall be supplied with one socket per tube. The socket shall be in accordance with EN 10241 or EN 10242 and unless Option 3 is requested the choice of standard and the socket type shall be at the discretion of the manufacturer. The purchaser shall be informed to which standard and of which type of socket is to be supplied.*

Option 3: *The purchaser shall specify the standard, and which type of socket is to be supplied in accordance with Option 2.*

NOTE Purchasers who require tubes to be threaded and supplied with a socket should specify either Options 1 and 2 or Options 1 and 3.

Protection, to prevent ingress of foreign matter or physical damage or rusting of the threads, may be obtained by selecting from the following options:

Option 4: *One cap or plug fitted to each tube end to prevent ingress of foreign matter; the type is at the discretion of the manufacturer.*

Option 5: *The tube shall be supplied with the thread varnished or with thread protection. The type of protection is at the discretion of the manufacturer.*

7.3 Suitability for hot dip galvanizing

Option 6: *The tubes shall be suitable for galvanizing to EN ISO 1461 or to EN 10240 coating quality A.2, A.3, B.1, B.2 or B.3.*

Option 7: *The tubes shall be suitable for galvanizing to EN 10240 coating quality A.1 (see 8.4.9).*

7.4 Hot dip galvanized condition

Option 8: *The tubes shall be supplied galvanized according to EN ISO 1461.*

Option 9: *The tubes shall be supplied galvanized according to EN 10240; the coating quality shall be specified by the purchaser at the time of enquiry and order.*

8 Requirements

8.1 General

The tubes when inspected in accordance with Clause 9 shall conform to the requirements of this document.

In addition to the requirements of this document, the general technical delivery requirements specified in EN 10021 shall apply.

8.2 Chemical composition and mechanical properties

8.2.1 The chemical composition and the mechanical properties shall conform to the requirements of Table 1.

Table 1 — Chemical composition (cast analysis) and mechanical properties

Steel Grade		Chemical composition %				Mechanical Properties		
						Upper Yield strength	Tensile strength	Elongation
Steel Name	Steel Number	C max	Mn max	P max	S max	R _{eH} min. (MPa)	R _m (MPa)	A min. %
S 195T	1.0026	0,20	1,40	0,035	0,030	195	320 to 520	20

NOTE The steel specified in this document is weldable, however when subsequently welding tubes produced according to this document account should be taken of the fact that the behaviour of the steel during and after welding is dependent not only on the steel but also on the conditions of preparing for and carrying out the welding.

8.2.2 Tubes shall be suitable for cold bending and threading.

NOTE When bending tubes produced in accordance with this document, appropriate tooling should be correctly used.

8.3 Appearance

8.3.1 The tubes shall be free from such external and internal surface defects that can be detected by visual examination.

8.3.2 The internal and external surface finish of the tubes shall be typical of the manufacturing process and, where applicable, the heat treatment employed. The finish and surface condition shall be such that any surface imperfections or marks requiring dressing can be identified.

8.3.3 It shall be permissible to dress, only by grinding or machining, surface imperfections provided that, after doing so, the tube thickness in the dressed area is not less than the specified minimum wall thickness. All dressed areas shall blend smoothly into the contour of the tube.

8.3.4 Surface imperfections which encroach on the specified minimum wall thickness shall be considered defects and tubes containing these shall be deemed not to conform to this document.

8.4 Dimensions, masses and tolerances

8.4.1 Specified outside diameters (D), wall thicknesses (T) and masses per unit length Medium and Heavy series tubes are listed in Table 2.