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Non-alloy steel tubes suitable for welding and threading

Technical delivery conditions

English version of DIN EN 10255

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

A comma is used as the decimal marker.

National foreword

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EN 10255

September 2004

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English version

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Tubes en acier non allié soudables et filetables – Conditions techniques de livraison	Rohre aus unlegiertem Stahl mit Eignung zum Schweißen und Gewindeschneiden – Technische Lieferbedingungen

This European Standard was approved by CEN on 2004-05-27.

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Contents

Page

Foreword ... 3

1 Scope ... 4

2 Normative references ... 4

3 Terms and definitions ... 5

4 Classification and designation ... 5

5 Information to be supplied by the purchaser ... 5
5.1 Mandatory information ... 5
5.2 Options ... 5
5.3 Examples of ordering ... 6
5.3.1 By outside diameter and thickness ... 6
5.3.2 By thread size and series ... 6

6 Manufacturing process ... 6
6.1 Steelmaking process ... 6
6.2 Tube manufacturing process ... 6

7 Delivery conditions ... 6
7.1 General ... 6
7.2 Alternative finishes and protection of the tube ends ... 6
7.3 Suitability for hot dip galvanizing ... 7
7.4 Hot dip galvanized condition ... 7

8 Requirements ... 7
8.1 General ... 7
8.2 Chemical composition and mechanical properties ... 7
8.3 Appearance ... 8
8.4 Dimensions, masses and tolerances ... 8

9 Inspection ... 10
9.1 Type of inspection ... 10
9.2 Inspection documents ... 10
9.3 Tensile test ... 11
9.4 Bend test ... 11
9.5 Flattening test ... 11
9.6 Leak tightness test ... 11
9.7 Dimensional inspection ... 12
9.8 Visual examination ... 12

10 Marking ... 12

11 Temporary protective coating ... 12

Annex A (informative) Correlation between specified outside diameter, thread size, and nominal diameter ... 13

Annex B (normative) Types of tubes with wall thickness different from medium and heavy series ... 14
B.1 General ... 14
B.2 Requirements ... 14
B.3 Marking ... 14

Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EC Construction Products Directive for applications covered by Mandate M 131 ... 16
ZA.1 Scope and relevant characteristics ... 16
ZA.2 Procedure of attestation of conformity of pipes ... 17
ZA.3 Evaluation of conformity ... 17
ZA.4 Declaration of conformity ... 18
ZA.5 CE marking and labelling ... 18

Bibliography ... 19

Foreword

This document (EN 10255:2004) 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 February 2005, and conflicting national standards shall be withdrawn at the latest by May 2006.

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(s).

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, 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 requirements for steel and iron products*

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

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

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

EN 10232, *Metallic materials - Tube (in full section) - Bend test*

EN 10233, *Metallic materials - Tube - Flattening test*

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*

prEN 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)*

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

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.

5 Information to be supplied by the purchaser

5.1 Mandatory information

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

a) Quantity (mass or total length or number of tubes);

b) Seamless or Welded tube manufacturing process (S or W);

c) The term "tube";

d) The number of this European Standard (EN 10255);

e) Specified outside diameter (D) in millimetres or thread size (R) (see Table 2 or Annex B);

f) 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).

1) Threaded ends (see 7.2);

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.

Table 2 — Dimensions, diameter tolerance and mass per unit length

Specified outside diameter[a]	Thread Size[a]	Outside diameter		H			M		
				Heavy series			Medium series		
				Wall thickness	Mass per unit length of bare tube		Wall thickness	Mass per unit length of bare tube	
D	R	max.	min.	T	Plain end	Socketed	T	Plain end	Threaded and socketed
(mm)		(mm)	(mm)	(mm)	(kg/m)	(kg/m)	(mm)	(kg/m)	(kg/m)
10,2	1/8	10,6	9,8	2,6	0,487	0,490	2,0	0,404	0,407
13,5	1/4	14,0	13,2	2,9	0,765	0,769	2,3	0,641	0,645
17,2	3/8	17,5	16,7	2,9	1,02	1,03	2,3	0,839	0,845
21,3	1/2	21,8	21,0	3,2	1,44	1,45	2,6	1,21	1,22
26,9	3/4	27,3	26,5	3,2	1,87	1,88	2,6	1,56	1,57
33,7	1	34,2	33,3	4,0	2,93	2,95	3,2	2,41	2,43
42,4	1 1/4	42,9	42,0	4,0	3,79	3,82	3,2	3,10	3,13
48,3	1 1/2	48,8	47,9	4,0	4,37	4,41	3,2	3,56	3,60
60,3	2	60,8	59,7	4,5	6,19	6,26	3,6	5,03	5,10
76,1	2 1/2	76,6	75,3	4,5	7,93	8,05	3,6	6,42	6,54
88,9	3	89,5	88,0	5,0	10,3	10,5	4,0	8,36	8,53
114,3	4	115,0	113,1	5,4	14,5	14,8	4,5	12,2	12,5
139,7	5	140,8	138,5	5,4	17,9	18,4	5,0	16,6	17,1
165,1	6	166,5	163,9	5,4	21,3	21,9	5,0	19,8	20,4

[a] For relationship between specified outside diameter (D), thread size (R) and nominal diameter (DN), see Annex A.

T = specified wall thickness.

8.4.2 Specified outside diameters (D), wall thicknesses (T) and masses per unit length for tube Types L, L1 and L2 are listed in Table B.1, B.2 and B.3 respectively.

8.4.3 The tolerance on out of roundness is included in the diameter tolerance.

8.4.4 For welded tubes the tolerance on wall thickness is:

— ± 10 % .for M and H series and Type L ;

— – 8 % with the plus tolerance limited by the mass tolerance, for Types L1 and L2.

8.4.5 The mass tolerance on welded tubes is:

— ± 7,5 % on bundles of 10 tons or more, for M and H series and Type L ;

— +10% -8% on individual tubes for Types L1 and L2.

8.4.6 For seamless tubes the tolerance on wall thickness is ± 12,5 %. The maximum tolerance does not apply if the actual weight of a bundle does not exceed the theoretical weight, calculated from the nominal mass per unit length (see Tables 2, B1, B2, or B3, as appropriate), by more than + 7,5 %.

8.4.7 The external weld bead of electric welded tubes shall be trimmed to an essentially flush condition.

8.4.8 The height of the internal weld seam of welded tubes shall not exceed 60 % of the specified wall thickness (T).

8.4.9 When welded tubes are specified as suitable for galvanizing to EN 10240 quality A.1 (Option 7) or galvanized to EN 10240 quality A.1 (Option 9), the internal weld bead shall have no sharp edges or porosity. The height of the internal weld seam shall not exceed 0,3 mm + 0,05 T and the internal weld seam profile shall blend smoothly into the contour of the tube.

8.4.10 Unless Option 10 is specified, tubes shall be delivered in one standard length per order item, either 6 m or 6,4 m at the discretion of the manufacturer.

Option 10: *The tubes shall be supplied in the standard length, either 6 m or 6,4 m, or an alternative type of length given in Table 3 as specified by the purchaser at the time of enquiry and order.*

Table 3 — Type of length and tolerance

Type of length	Length (L) (m)	Tolerance	
		Welded	Seamless
Standard	6 or 6,4	$^{+150}_{-50}$ mm	± 500 mm
Random	$4 \leq L \leq 16$ with a range of 2 m per order item	Up to 10 % of tubes supplied may be below the minimum length ordered, but not shorter than 75 % of the minimum range length	
Exact	$L \leq 6$	$^{+10}_{0}$ mm	
	$6 < L \leq 12$	$^{+15}_{0}$ mm	
	$L > 12$	$^{+by\ agreement}_{0}$	

8.4.11 For tubes with a specified outside diameter equal to or greater than 33,7 mm, the deviation from straightness over any tube length L, where L is the manufacturer's delivered length, shall not exceed 0,002 L.

NOTE It is not possible to specify a straightness requirement for this product with D less than 33,7 mm due to bending during processing and subsequent handling, however they should be reasonably straight.

9 Inspection

9.1 Type of inspection

Conformity to the requirements of the order shall be checked by non specific inspection and testing in accordance with EN 10021.

9.2 Inspection documents

Unless Option 11 is specified, tubes shall be supplied with an inspection document type 2.1, in accordance with EN 10204.

Option 11: *The tubes shall be supplied with an inspection document type 2.2, in accordance with EN 10204.*

9.3 Tensile test

The tensile test shall be performed on bare tube in accordance with EN 10002-1 and the following shall be determined;

— the tensile strength (R_m),

— the upper yield strength (R_{eH}) or,

  — if a yield phenomenon is not present, either the 0,2 % proof strength ($R_{p\ 0,2}$) or the 0,5 % total elongation ($R_{t\ 0,5}$),

— the percentage elongation after fracture (A) with a gauge length $L_0 = 5{,}65\sqrt{S_0}$,

  — if a non-proportional test piece is used, the percentage elongation value obtained shall be converted to the value for a gauge length $L_0 = 5{,}65\sqrt{S_0}$ using the conversion tables given in EN ISO 2566-1.

In cases of dispute, $R_{t\ 0,5}$ for the yield strength and a gauge length $L_0 = 5{,}65\sqrt{S_0}$ for elongation shall be used.

9.4 Bend test

The bend test shall be applied to bare tubes with specified outside diameters (D) of 17,2 mm up to and including 60,3 mm and shall be carried out in accordance with EN 10232 to an angle of 90°.

The groove in the forming tool shall have a width that fits the tube diameter accurately and a depth not less than 0,5 D. The radius at the bottom of the groove of the former shall be as given in Table 4.

Welded tubes shall be bent with the weld at the outside of the bend.

The tubes shall show no cracks visible without magnifying aids.

Table 4 — Specified outside diameter (D) and corresponding bending radius

Dimensions in millimetres

D	17,2	21,3	26,9	33,7	42,4	48,3	60,3
Bending radius	50	65	85	100	150	170	220

9.5 Flattening test

The flattening test shall be applied to bare tubes with specified outside diameters (D) greater than 60,3 mm and shall be carried out in accordance with EN 10233.

Welded tubes shall be flattened with the weld placed alternately at 0 or 90° (12 or 3 o'clock) to the direction of the flattening.

The tube section shall be flattened in a press until the distance between platens, measured under load, reaches 75 % of the original outside diameter of the tube. The tube shall show no cracks or flaws visible without magnifying aids.

No cracks or flaws visible without magnifying aids shall occur in the metal other than in the weld until the distance between platens, measured under load, reaches 60 % of the original outside diameter.

Slight premature failure at the edges shall not be considered as a cause for rejection.

9.6 Leak tightness test

Each tube (before threading, if applicable) shall be tested for leak-tightness.

At the discretion of the manufacturer, the test can be either a hydrostatic test at a minimum of 50 bar for at least s, or an electro-magnetic test in accordance with EN 10246-1.

9.7 Dimensional inspection

Specified dimensions shall be verified.

9.8 Visual examination

Tubes shall be visually examined to ensure compliance with 8.3.

10 Marking

10.1 The tubes shall be marked by suitable and durable methods with at least:

— the manufacturer's mark;

— the symbol to indicate the series (H or M) (see Table 2) or the type (L, L1 or L2) (see Annex B);

— the symbol S (seamless) or W (welded), to indicate the tube manufacturing process;

Marking shall appear at least once within 1 m of one end of each tube.

At the discretion of the manufacturer, the series or type marking may be replaced by color coding as follows:

— Heavy: red;

— Medium: blue;

— Types: see Annex B.

Color coding bands shall be approximately 50 mm wide.

10.2 Each bundle shall have a label attached which contains the following minimum information:

— the manufacturer's name or mark;

— the number of this European Standard EN 10255;

— the symbol S (seamless) or W (welded), to indicate the tube manufacturing process;

— the D (specified outside diameter) or R (thread size);

— the series or type or specified wall thickness.

11 Temporary protective coating

Unless Option 12 is specified, the tubes are supplied bare.

Option 12: *The tube shall be supplied with a temporary protective coating.*

Annex A
(informative)

Correlation between specified outside diameter, thread size, and nominal diameter

Table A.1 provides information on the relationship between specified outside diameter (D) or thread size(R) and the nominal diameter (DN).

Table A.1 — Specified outside diameter, thread size and corresponding nominal diameter

Specified outside diameter D mm	Thread Size R	*Nominal Diameter* *DN*
10,2	1/8	6
13,5	¼	8
17,2	3/8	10
21,3	½	15
26,9	¾	20
33,7	1	25
42,4	1 ¼	32
48,3	1 ½	40
60,3	2	50
76,1	2 ½	65
88,9	3	80
114,3	4	100
139,7	5	125
165,1	6	150

Annex B
(normative)

Types of tubes with wall thickness different from medium and heavy series

B.1 General

This annex give the dimensions of Types of tubes which have wall thickness different from those included in Table 2.

B.2 Requirements

The tubes shall conform to the technical requirements specified in Clauses 5, 6, 7, 8, 9, 10 and 11, except for dimensions, masses and tolerances on diameter, which shall be in accordance with Tables B.1, B.2 or B.3, as applicable.

Cold formed tubes of Type L included in Table B.1 shall be heat treated.

B.3 Marking

Tubes of Type L shall be marked L and when colour coding replaces the marking, the colour shall be green.

Tubes of Type L1 shall be marked L 1 and when colour coding replaces the marking, the colour shall be white.

Tubes of Type L2 shall be marked L 2 and when colour coding replaces the marking, the colour shall be brown.

Table B.1 — Dimensions, diameter tolerance and mass per unit length of tubes: Type L

Specified outside diameter [a] D	Designation of thread [a] R	Outside diameter		Wall Thickness T	Mass per unit length of bare tube	
		max.	min.		Plain end.	Threaded and socketed
(mm)	--	(mm)	(mm)	(mm)	(kg/m)	(kg/m)
13,5	1/4	13,9	13,2	2,0	0,567	0,571
17,2	3/8	17,4	16,7	2,0	0,750	0,756
21,3	1/2	21,7	21,0	2,3	1,08	1,09
26,9	3/4	27,1	26,4	2,3	1,40	1,41
33,7	1	34,0	33,2	2,9	2,20	2,22
42,4	1 1/4	42,7	41,9	2,9	2,82	2,85
48,3	1 1/2	48,6	47,8	2,9	3,25	3,29
60,3	2	60,7	59,6	3,2	4,51	4,58
76,1	2 1/2	76,0	75,2	3,2	5,75	5,87
88,9	3	88,7	87,9	3,2	6,76	6,93
101,6	3 1/2	101,2	100,3	3,6	8,70	8,88
114,3	4	113,9	113,0	3,6	9,83	10,1
139,7	5	140,8	138,5	4,5	15,0	15,5
165,1	6	166,5	163,9	4,5	17,8	18,4

[a] For relationship between specified outside diameter (D), thread size (R) and nominal diameter (DN), see Annex A.

T = specified wall thickness.

Table B.2 — Dimensions, diameter tolerance and mass per unit length of tubes Type L1

Specified outside diameter [a] D	Designation of thread [a] R	Outside diameter		Wall Thickness T	Mass per unit length of bare tube	
		max.	min.		Plain end	Threaded and socketed
(mm)	--	(mm)	(mm)	(mm)	(kg/m)	(kg/mm)
13,5	1/4	13,9	13,2	2,0	0,570	0,574
17,2	3/8	17,4	16,7	2,0	0,742	0,748
21,3	1/2	21,7	21,0	2,3	1,08	1,09
26,9	3/4	27,1	26,4	2,3	1,39	1,40
33,7	1	34,0	33,2	2,9	2,20	2,22
42,4	1 1/4	42,7	41,9	2,9	2,82	2,85
48,3	1 1/2	48,6	47,8	2,9	3,24	3,28
60,3	2	60,7	59,6	3,2	4,49	4,56
76,1	2 1/2	76,3	75,2	3,2	5,73	5,85
88,9	3	89,4	87,9	3,6	7,55	7,72
114,3	4	114,9	113,0	4,0	10,8	11,1

[a] For relationship between specified outside diameter (D), thread size (R) and nominal diameter (DN), see Annex A.

T = specified wall thickness.

Table B.3 — Dimensions, diameter tolerance and mass per unit length of tubes Type L2

Specified outside diameter [a] D	Designation of thread [a] R	Outside diameter		Wall Thickness T	Mass per unit length of bare tube	
		max.	min.		Plain end	Threaded and socketed
(mm)	--	(mm)	(mm)	(mm)	(kg/m)	(kg/m)
13,5	1/4	13,6	13,2	1,8	0,515	0,519
17,2	3/8	17,1	16,7	1,8	0,670	0,676
21,3	1/2	21,4	21,0	2,0	0,947	0,956
26,9	3/4	26,9	26,4	2,3	1,38	1,39
33,7	1	33,8	33,2	2,6	1,98	2,00
42,4	1 1/4	42,5	41,9	2,6	2,54	2,57
48,3	1 1/2	48,4	47,8	2,9	3,23	3,27
60,3	2	60,2	59,6	2,9	4,08	4,15
76,1	2 1/2	76,0	75,2	3,2	5,71	5,83
88,9	3	88,7	87,9	3,2	6,72	6,89
114,3	4	113,9	113,0	3,6	9,75	10,0

[a] For relationship between specified outside diameter (D), thread size (R) and nominal diameter (DN), see Annex A.

T = specified wall thickness.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EC Construction Products Directive for applications covered by Mandate M 131

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 "PIPES, TANKS and ANCILLARIES not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the Mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the construction products covered by this annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended use may be applicable to a construction product falling within the scope of this standard.

NOTE In addition to any specific clauses relating to dangerous substances contained in this Standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply. Note: an informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (CREATE, accessed through http://europa.eu.int).

This Annex has the same scope as Clause 1 of this standard with regard to the product covered. It establishes the conditions for the CE marking of steel pipes intended for use indicated below and shows the relevant clauses applicable (see Table ZA.1).

Construction product: Steel tubes

Intended uses: Distribution of aqueous liquids, gas and fuel.

The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended use of the product. In this case manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option "No performance determined" (NPD) in the information accompanying the CE marking (see Clause ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold level.

Table ZA.1 — Relevant Clauses

Requirement/characteristic from the mandate	Requirement clauses in this standard	Mandated Levels and/or classes	Notes
Reaction to fire		Class A1	
Yield strength	8.2 and Table 1		MPa
Dimensional tolerances	8.4.3 to 8.4.6		a
Tightness: Gas and Liquid	9.6		a
Durability [b]	7.4		µm

[a] The procedure used to test this Characteristic is a pass/fail test.

[b] Durability is dependent on the method of protection and/or the type and thickness of the coating.

ZA.2 Procedure of attestation of conformity of pipes

ZA.2.1 System of attestation of conformity

The system of attestation of conformity of tubes with the requirements/characteristics indicated in clause ZA.1, as give in the Annex III of the Mandate, is shown in Table ZA.2, which is in accordance with the Decision of the Commission (1999/472/EC) of 1 July 1999, for the intended uses.

Table ZA 2 — System of attestation of conformity

Product	Intended use	Level(s) or class(es)	Attestation of conformity system(s)
Pipes	In installations for the transport/distribution/storage of gas/fuel intended for the Supply of building heating/cooling systems, from the external storage reservoir or the last pressure reduction unit of the boiler/heater/cooler system(s) of the building(s)	-	3
System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), second possibility			

The attestation of conformity of pipes in Table ZA.2 shall requires initial type testing by the manufacturer (see ZA.3.1) and compliance with the requirements for a factory production control system (see ZA 3.4).

ZA.3 Evaluation of conformity

ZA.3.1 Initial type testing

An approved laboratory shall declare the conformity of the initial type testing of all characteristics given in Table ZA.1, according to the following principles.

1) Initial type testing shall be performed on first application of this standard in accordance with ZA.3.2;

2) Where products have previously been tested in accordance with the relevant requirements of this European Standard (same product, same characteristic, same test method and same sampling regime), such tests may be taken into account for initial type testing purposes;

3) In addition, initial type testing shall be performed at the beginning of the production of a product type or at the beginning of a new method of production (where these may affect the stated properties).

ZA.3.2 Programme of tests

Testing shall be carried out on the largest and thickest and the smallest and thinnest product manufactured by each process route/mill. The tests shall be carried out in accordance respectively with 9.3, 9.6 and 9.7 of this European Standard.

ZA.3.3 Documentation.

The results of the initial type-testing programme shall be recorded and such records shall be maintained and be made available for inspection for a period of at least 10 years after the date when the last product to which the test programme refers to were delivered.

ZA.3.4 Factory production control

The manufacturer shall establish document and maintain a factory production control system to ensure that the products placed on the market conform to the technical specification.

A factory production control system which conforms with EN ISO 9001 and which covers steel tubes is deemed to comply with the above and with the requirements for factory production control according to System 3 as stated in Table ZA.2

ZA.4 Declaration of conformity

When compliance with the conditions of this Annex is achieved, the manufacturer or his authorised representative established within the EEA, shall prepare and retain a declaration of conformity (EC declaration of Conformity), which entitles the manufacturer or his authorised representative to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established within the EEA, and the place of production;

— description of the product (type, identification, use, etc.) and a copy of the information accompanying the CE marking;

— provision to which the product conforms (e.g. Annex ZA of this European Standard);

— particular conditions applicable to use of the product (e.g. provisions for use under certain conditions, etc.);

— name and the address of the approved laboratory;

— name, and position held by, of the person empowered to sign the declaration of conformity on behalf of the manufacturer or his authorised representative;

The above mentioned declaration shall be presented in the official language or languages of the Member States in which the product is to be used.

ZA.5 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the accompanying commercial documents. The following information shall accompany the CE marking symbol:

— the name or identifying mark and registered address of the producer;

— the last two last digits of the year in which the marking is affixed;

— reference to this European Standard EN 10255;

— description of the product: tubes for use in general building and civil engineering structures and the conveyance of fluids, dimensions, and intended use;

— information on those relevant essential characteristic listed in Table ZA.1, which are to be declared;

  — specified yield strength;

  — reaction to fire - Euro class A 1;

  — durability (where relevant) - coating type and thickness;

  — leak tightness – Tight;

— "No Performance Determined" for Characteristic where this is relevant.

The "No Performance Determined" (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise the NPD option may be used when and where that characteristic for a given intended use is not subject to regulatory requirements in the Member State of destination.

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogation's need not be mentioned.

Figure ZA.1 gives an example of the information to be given on commercial documents

CE	CE conformity marking, consisting of the CE symbol given in the Directive 93/68/EEC
Any Co Ltd, PO. Box 21, B -1050	Name or identifying mark and registered address of the manufacturer
03	Last two digits of the year in which the marking was affixed
EN 10255	Number of the European Standard
Steel tubes for use in installations for the distribution of aqueous liquids, gas and Fuel.	Description of the product
Reaction to fire : Euroclass A 1	Information on regulated characteristics
Minimum specified yield strength : 195 MPa	
Durability : Uncoated (not relevant)	
Dimensions : 26,9 x 2,6 mm	
Leak tightness : Tight	

Figure ZA.1 — Example of CE marking information

Bibliography

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