



**NSAI**  
Standards

Irish Standard  
I.S. EN 10216-1:2013

Seamless steel tubes for pressure purposes -  
Technical delivery conditions - Part 1: Non-  
alloy steel tubes with specified room  
temperature properties

**I.S. EN 10216-1:2013**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN 10216-1:2013

*Published:*

2013-12-11

*This document was published under the authority of the NSAI and comes into effect on:*

2013-12-21

ICS number:

23.040.10

77.140.75

NOTE: If blank see CEN/CENELEC cover page

NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 10216-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2013

ICS 23.040.10; 77.140.75

Supersedes EN 10216-1:2002

English Version

## Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties

Tubes sans soudure en acier pour service sous pression -  
Conditions techniques de livraison - Partie 1 : Tubes en  
acier non allié avec caractéristiques spécifiées à  
température ambiante

Nahtlose Stahlrohre für Druckbeanspruchungen -  
Technische Lieferbedingungen - Teil 1: Rohre aus  
unlegierten Stählen mit festgelegten Eigenschaften bei  
Raumtemperatur

This European Standard was approved by CEN on 17 August 2013.

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**

## Contents

Page

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
8.2.1 Cast analysis .....	9
8.2.2 Product analysis .....	11
8.3 Mechanical properties.....	12
8.3.1 Mechanical properties for quality TR2.....	12
8.3.2 Mechanical properties for quality TR1.....	12
8.4 Appearance and internal soundness.....	13
8.4.1 Appearance .....	13
8.4.2 Internal soundness .....	13
8.5 Straightness .....	14
8.6 Preparation of ends .....	14
8.7 Dimensions, masses and tolerances.....	14
8.7.1 Diameter and wall thickness.....	14
8.7.2 Mass.....	14
8.7.3 Lengths.....	14
8.7.4 Tolerances .....	17
9 Inspection .....	17
9.1 Types of inspection .....	17
9.2 Inspection documents.....	18
9.2.1 Types of inspection documents.....	18
9.2.2 Content of inspection documents.....	18
9.3 Summary of inspection and verification testing .....	19
10 Sampling .....	20
10.1 Frequency of tests .....	20
10.1.1 Test unit.....	20
10.1.2 Number of sample tubes per test unit.....	20
10.2 Preparation of samples and test pieces.....	20
10.2.1 Selection and preparation of samples for product analysis.....	20
10.2.2 Location, orientation and preparation of samples and test pieces for mechanical tests.....	20
11 Verification test methods.....	21

11.1	Chemical analysis .....	21
11.2	Tensile test .....	22
11.3	Impact test .....	22
11.4	Leak tightness test .....	23
11.4.1	Hydrostatic test .....	23
11.4.2	Electromagnetic test .....	23
11.5	Dimensional inspection .....	23
11.6	Visual examination .....	23
11.7	Non-Destructive Testing .....	23
11.8	Retest, sorting and reprocessing .....	24
12	Marking .....	24
12.1	Marking to be applied .....	24
12.2	Additional marking .....	24
13	Protection .....	24
Annex A	(informative) Technical changes from the previous edition .....	25
A.1	Introduction .....	25
A.2	Technical changes .....	25
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 97/23/EC .....	26
Bibliography	.....	27

**EN 10216-1:2013 (E)****Foreword**

This document (EN 10216-1:2013) has been prepared by Technical Committee ECISS/TC 110 "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 June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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 10216-1:2002.

For the list of the most significant technical changes that have been made in this new edition, see Annex A.

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 consists of the following parts, under the general title "*Seamless steel tubes for pressure purposes — Technical delivery conditions*":

- *Part 1: Non-alloy steel tubes with specified room temperature properties;*
- *Part 2: Non-alloy and alloy steels tubes with specified elevated temperature properties;*
- *Part 3: Alloy fine grain steel tubes;*
- *Part 4: Non-alloy and alloy steel tubes with specified low temperature properties;*
- *Part 5: Stainless steel tubes.*

Another European Standard series covering tubes for pressure purposes is:

- EN 10217, *Welded steel tubes for pressure purposes — Technical delivery conditions.*

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.

## 1 Scope

This European Standard specifies the technical delivery conditions for two qualities TR1 and TR2 of seamless tubes of circular cross section with specified room temperature properties made of non-alloy quality steel.

NOTE Once this standard is published in the Official Journal of the European Union (OJEU) under Directive 97/23/EC, presumption of conformity to the Essential Safety Requirements (ESR) of Directive 97/23/EC is limited to technical data of materials in this standard and does not presume adequacy of the material to a specific item of equipment. Consequently, the assessment of the technical data stated in this material standard against the design requirements of this specific item of equipment to verify that the ESRs of the Pressure Equipment Directive are satisfied, needs to be done by the designer or manufacturer of the pressure equipment, taking also into account the subsequent manufacturing processes which may affect properties of the base materials.

## 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, *Definition and classification of grades of steel*

EN 10021, *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, *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 10220, *Seamless and welded steel tubes — Dimensions and masses per unit length*

CEN/TR 10261, *Iron and steel — European standards for the determination of chemical composition*

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

EN ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1)*

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

EN ISO 10893-1, *Non-destructive testing of steel tubes — Part 1: Automated electromagnetic testing of seamless and welded (except submerged arc-welded) steel tubes for the verification of hydraulic leaktightness (ISO 10893-1)*

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-