BS EN 10217-4:2019

BSI Standards Publication

Welded steel tubes for pressure purposes - Technical delivery conditions

Part 4: Electric welded non-alloy steel tubes with specified low temperature properties

bsi.

National foreword

This British Standard is the UK implementation of EN 10217-4:2019. It supersedes BS EN 10217-4:2002, which is withdrawn.

BSI, as a member of CEN, is obliged to publish EN 10217-4:2019 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval.

The UK committee draws users' attention to the fact that BS EN 10217 Parts 1 to 7 are product standards and are therefore intended to assist specifiers, designers and other users of the documents by setting out a series of tube and pipe grades intended for use in pressure applications. The non-alloy and low-alloy grades in Parts 1 to 6 are comparable (interchangeable) with seamless grades of the same designations in BS EN 10216 Parts 1 to 4. Similarly the stainless grades in Part 7 are comparable to seamless grades of the same designations in BS EN 10216 Part 5.

It should be noted that guidance on material suitability for specific applications is not provided in product standards. It is therefore important that specifiers, designers and other users of the documents understand the differences between the types and characteristics of the welded pressure pipes covered in the standards so that the appropriate type and grade can be specified or selected for the application concerned.

In particular, it should be noted that, although BS EN 13480 supports essential requirements of EU Directive 2014/68/EU (the Pressure Equipment Directive or PED), the TR1 grades in BS EN 10217-1 are not suitable for use under the PED (as indicated in Table 4 of the Standard). This is because, in particular, they do not meet the essential requirements of the Directive in respect of ageing (determined by the chemical composition) or ductility (specified as minimum Charpy impact requirements). In addition, most HFW TR1 grades imported into the UK are cold-formed and hence the weld seam will not have been heat-treated which means that the weld area is likely to be highly stressed, which can lead to cracking if the tube is subjected to additional processing. The UK committee therefore recommends that users do not use any HFW products certified or sold as being of BS EN 10217-1 TR1 grade. Instead, to ensure PED compliance, the UK committee recommends that hot-finished HFW tubes in accordance with BS EN 10217-2 should be used for most pressure applications, although BS EN 10217-1 TR2 grades may be considered in some cases.

As BS EN 10217 steel tubes and pipes can be used for a whole range of applications from building services to critical requirements involving gas or chemicals, it is important that the specifier, designer or user selects the most suitable tube or pipe type and grade from the seven parts of the standard provided.

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

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Amendments/corrigenda issued since publication

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English Version

Welded steel tubes for pressure purposes - Technical delivery conditions - Part 4: Electric welded non-alloy steel tubes with specified low temperature properties

Tubes soudés en acier pour service sous pression - Conditions techniques de livraison - Partie 4: Tubes soudés électriquement en acier non allié avec caractéristiques spécifiées à basse température

Geschweißte Stahlrohre für Druckbeanspruchungen - Technische Lieferbedingungen - Teil 4: Elektrisch geschweißte Rohre aus unlegierten Stählen mit festgelegten Eigenschaften bei tiefen Temperaturen

This European Standard was approved by CEN on 25 February 2019.

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword

This document (EN 10217-4:2019) has been prepared by Technical Committee CEN/TC 459 "ECISS - European Committee for Iron and Steel Standardization"[1], the secretariat of which is held by AFNOR.

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 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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

This document supersedes EN 10217-4:2002.

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 2014/68/EU.

For relationship with EU Directive 2014/68/EU (formerly 97/23/EC), see informative Annex ZA, which is an integral part of this document.

This European Standard consists of the following parts, under the general title *Welded steel tubes for pressure purposes – Technical delivery conditions*:

Part 1: Electric welded and submerged arc welded non-alloy steel tubes with specified room temperature properties

Part 2: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties

Part 3: Electric welded and submerged arc welded alloy fine grain steel tubes with specified room, elevated and low temperature properties

Part 4: Electric welded non-alloy steel tubes with specified low temperature properties

Part 5: Submerged arc welded non-alloy and alloy steel tubes with specified elevated temperature properties

Part 6: Submerged arc welded non-alloy steel tubes with specified low temperature properties

Part 7: Stainless steel tubes

Another European Standard series covering tubes for pressure purposes is:

EN 10216, *Seamless steel tubes for pressure purposes.*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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,

[1] Through its subcommittee SC 10 "Steel tubes, and iron and steel fittings" (secretariat: UNI)

Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the technical delivery conditions for two test categories of electric welded tubes of circular cross section, with specified low temperature properties, made from non-alloy quality steel.

NOTE 1 These tube grades are intended to support the essential requirements of EU Directive 2014/68/EU in respect of pressure equipment with specified low temperature properties covered under all relevant Categories as set out in Article 13 of that Directive.

NOTE 2 Once this standard is published in the Official Journal of the European Union (OJEU), presumption of conformity to the Essential Safety Requirements (ESR) of Directive 2014/68/EU is limited to the technical data for the materials in this standard and does not presume adequacy of the material for a specific item of pressure 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 are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 10020, *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 10168:2004, *Steel products — Inspection documents — List of information and description*

EN 10204:2004, *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 148-1:2016, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1:2016)*

EN ISO 377:2017, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing (ISO 377:2017)*

EN ISO 2566-1:1999, *Steel — Conversion of elongation values — Part 1: Carbon and low alloy steels (ISO 2566-1:1984)*

EN ISO 4885, *Ferrous materials — Heat treatments — Vocabulary (ISO 4885)*

EN ISO 6892-1:2016, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2016)*