ICS 23.040.40, 77.140.20 SLOVENSKÁ TECHNICKÁ NORMA Január 2026

STN	**Tvarovky na priváranie na tupo Časť 4: Tvárnené austenitické a austeniticko-feritické nehrdzavejúce (duplexné) ocele s osobitnými kontrolnými požiadavkami**	**STN EN 10253-4 13 2200**

Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/25

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EUROPEAN STANDARD
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EN 10253-4

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English Version

Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements

Raccords à souder bout à bout - Partie 4 : Aciers inoxydables austénitiques et austéno-ferritiques (duplex) avec contrôle spécifique

Formstücke zum Einschweißen - Teil 4: Austenitische und austenitisch-ferritische (Duplex) nichtrostende Stähle mit besonderen Prüfanforderungen

This European Standard was approved by CEN on 21 July 2024.

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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.

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

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European foreword

This document (EN 10253-4:2025) 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of an identical text or by endorsement, at the latest by January 2026 and conflicting national standards shall be withdrawn at the latest by January 2026.

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 10253-4:2008.

The main changes compared to the previous edition are listed below:

a) Concretization of the scope;

b) Restructuring of EN 10253-2 and EN 10253-4 and ensuring they align with each other;

c) Update of technical requirements and dimensions to reflect current market standards;

d) Correction of identical construction dimensions within the EN 10253 series;

e) Introduction of additional wall thickness and diameter values;

f) Introduction of test concept TC2 analogous to pipe standards;

g) Rewording of some options and new numbering;

h) Modification of test lot sizes;

i) Update of contents for ultrasonic testing;

j) Update to the contents of welding chapters;

k) Revision of figures;

l) Update of the terms and definitions;

m) Update of normative references;

n) Editorial revision to follow the latest design rules;

o) Revision of mechanical properties;

p) Update of metric elbows dimensions table.

[1] Through its sub-committee SC 10 “Steel tubes, and iron and steel fittings”, (secretariat: UNI).

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

EN 10253 comprises a series of European Standards about *Butt-welding pipe fittings*, namely:

— *Part 1: Wrought carbon steel for general use and without specific inspection requirements;*

— *Part 2: Non alloy and ferritic alloy steels with specific inspection requirements;*

— *Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements;*

— *Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements.*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

In writing this document, the competent committee recognized that there are two broad types of products which are commonly used, and it was decided to reflect these in the standard by differentiating between the two parts.

EN 10253-3 describes fittings without formal reference to the pressure resistance, which are not intended to be used in applications, covered by the Pressure Equipment Directive (2014/68/EU) in categories I to IV.

EN 10253-4 defines two types of fittings: Type A fittings have the same wall thickness at the welding ends and at the body of the fitting as a pipe having the same specified wall thickness. Their resistance to internal pressure is, in general, less than that of a straight pipe with the same dimensions. Type B fittings showing increased wall thickness at the body of the fitting are designed to resist the same internal pressure as a straight pipe with the same dimensions. These two types of fittings are intended to be used in applications covered by the EU Directive 2014/68/EU. According to this Directive and further interpretation guidelines (e.g. guideline G – 19), seamless fittings are considered as materials whereas welded fittings are considered as components. Therefore, in some areas of this document, provisions for seamless and welded fittings are different.

The selection of steel type and requirement level depend on many factors; the properties of the fluid to be conveyed, the service conditions, the design code and any statutory requirements should all be taken into consideration. Therefore, this document gives no detailed guidelines for the application of different parts. It is the ultimate responsibility of the user to select the appropriate part for the intended application.

1 Scope

This document specifies the technical delivery requirements for seamless and welded butt-welding fittings (elbows, concentric and eccentric reducers, equal and reducing tees, caps) made of austenitic and austenitic-ferritic (duplex) stainless steel in two test-categories which are intended for pressure purposes at room temperature, at low temperature or at elevated temperatures, and for the transmission and distribution of fluids and gases.

It specifies:

a) type of fittings;

   1) type A: butt-welding fittings with reduced pressure factor;

   2) type B: butt-welding fittings for use at full service pressure;

b) steel grades and their chemical compositions;

c) mechanical properties;

d) dimensions and tolerances;

e) requirements for inspection and testing;

f) inspection documents;

g) marking;

h) protection and packaging.

NOTE The selection of the appropriate fitting (material, thickness) is the ultimate responsibility of the manufacturer of the pressure equipment (see European Legislation for Pressure Equipment). In the case of a harmonized supporting standard for materials, presumption of conformity to the ESRs is limited to technical data of materials in the standard and does not presume adequacy of the material to a specific item of equipment. Consequently, it is essential that the technical data stated in the material standard be assessed against the design requirements of this specific item of equipment to verify that the ESRs of the PED are satisfied.

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 10020:2000, *Definition and classification of grades of steel*

EN 10021:2006, *General technical delivery conditions for steel products*

EN 10027-1:2016, *Designation systems for steels — Part 1: Steel names*

EN 10027-2:2015, *Designation systems for steels — Part 2: Numerical system*

EN 10028-7:2016, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*

EN 10088-1:2023, *Stainless steels — Part 1: List of stainless steels*

EN 10160:1999, *Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)*

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

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 10216-5:2021, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 5: Stainless steel tubes*

EN 10217-7:2021, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 7: Stainless steel tubes*

EN 10222-5:2017, *Steel forgings for pressure purposes — Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels*

EN 10228-4:2016, *Non-destructive testing of steel forgings — Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings*

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

EN 10272:2016, *Stainless steel bars for pressure purposes*

EN 13480-3:2024, *Metallic industrial piping — Part 3: Design and calculation*

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 2566-2:2021, *Steel — Conversion of elongation values — Part 2: Austenitic steels (ISO 2566-2:2021, Corrected version 2022-05)*

EN ISO 3166-1:2020, *Codes for the representation of names of countries and their subdivisions — Part 1: Country code (ISO 3166-1:2020)*

EN ISO 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels — Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid (ISO 3651-2:1998)*

EN ISO 4136:2022, *Destructive tests on welds in metallic materials — Transverse tensile test (ISO 4136:2022)*

EN ISO 4885:2018, *Ferrous materials — Heat treatments — Vocabulary (ISO 4885:2018)*

EN ISO 5173:2023, *Destructive tests on welds in metallic materials — Bend tests (ISO 5173:2023)*

EN ISO 5817:2023, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817:2023)*

EN ISO 6892-1:2019, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2019)*

EN ISO 6892-2:2018, *Metallic materials — Tensile testing — Part 2: Method of test at elevated temperature (ISO 6892-2:2018)*

EN ISO 8492:2013, *Metallic materials — Tube — Flattening test (ISO 8492:2013)*

EN ISO 8493:2004, *Metallic materials — Tube — Drift-expanding test (ISO 8493:1998)*

EN ISO 8495:2013, *Metallic materials — Tube — Ring-expanding test (ISO 8495:2013)*

EN ISO 8496:2013, *Metallic materials — Tube — Ring tensile test (ISO 8496:2013)*

EN ISO 9016:2022, *Destructive tests on welds in metallic materials — Impact tests — Test specimen location, notch orientation and examination (ISO 9016:2022)*

EN ISO 9606-1:2017, *Qualification testing of welders — Fusion welding — Part 1: Steels (ISO 9606-1:2012 including Cor 1:2012 and Cor 2:2013)*

EN ISO 9712:2022, *Non-destructive testing — Qualification and certification of NDT personnel (ISO 9712:2021)*

EN ISO 10893-2:2011,[2] *Non-destructive testing of steel tubes — Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections (ISO 10893-2:2011)*

EN ISO 10893-4:2011, *Non-destructive testing of steel tubes — Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections (ISO 10893-4:2011)*

EN ISO 10893-6:2019, *Non-destructive testing of steel tubes — Part 6: Radiographic testing of the weld seam of welded steel tubes for the detection of imperfections (ISO 10893-6:2019)*

EN ISO 10893-7:2019, *Non-destructive testing of steel tubes — Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections (ISO 10893-7:2019)*

EN ISO 10893-8:2011,[3] *Non-destructive testing of steel tubes — Part 8: Automated ultrasonic testing of seamless and welded steel tubes for the detection of laminar imperfections (ISO 10893-8:2011)*

EN ISO 10893-10:2011,[4] *Non-destructive testing of steel tubes — Part 10: Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections (ISO 10893-10:2011)*

EN ISO 14284:2022, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition (ISO 14284:2022)*

EN ISO 14732:2013, *Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials (ISO 14732:2013)*

EN ISO 15614-1:2017, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2017, Corrected version 2017-10-01)*

[2] As impacted by EN ISO 10893-2:2011/A1:2020.

[3] As impacted by EN ISO 10893-8:2011/A1:2020.

[4] As impacted by EN ISO 10893-10:2011/A1:2020.