PÕKK-KEEVITUSEGA TORULIITMIKUD. OSA 4: ERIJÄRELEVALVENÕUETEGA SEPISTATUD ROOSTEVABAD AUSTENIIT- JA AUSTENIIT-FERRIITTERASED (DUPLEX)

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

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 10253-4:2025 sisaldab Euroopa standardi EN 10253-4:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 10253-4:2025 consists of the English text of the European standard EN 10253-4:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.07.2025.	Date of Availability of the European standard is 02.07.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 23.040.40, 77.140.20

EUROPEAN STANDARD

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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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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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)*