



**SLOVENSKI STANDARD**  
**kSIST FprEN 10305-4:2010**

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**Jeklene cevi za precizno uporabo - Tehnični dobavni pogoji - 4. del: Hladnovlečene nevarjene cevi za hidravlične in pnevmatične tlačne vode**

Steel tubes for precision applications - Technical delivery conditions - Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems

Präzisionsstahlrohre - Technische Lieferbedingungen - Teil 4: Nahtlose kaltgezogene Rohre für Hydraulik- und Pneumatik-Druckleitungen

Tubes de précision en acier - Conditions techniques de livraison - Partie 4 : Tubes sans soudure étirés à froid pour circuits hydrauliques et pneumatiques

**Ta slovenski standard je istoveten z: FprEN 10305-4**

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**ICS:**

77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use
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**kSIST FprEN 10305-4:2010**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**FINAL DRAFT**  
**FprEN 10305-4**

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ICS 77.140.75

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English Version

## Steel tubes for precision applications - Technical delivery conditions - Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems

Tubes de précision en acier - Conditions techniques de livraison - Partie 4 : Tubes sans soudure étirés à froid pour circuits hydrauliques et pneumatiques

Präzisionsstahlrohre - Technische Lieferbedingungen - Teil 4: Nahtlose kaltgezogene Rohre für Hydraulik- und Pneumatik-Druckleitungen

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee ECISS/TC 110.

If this draft becomes a European Standard, 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.

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## Foreword

This document (FprEN 10305-4:2010) has been prepared by Technical Committee ECISS/TC 110 “Steel tubes, and iron and steel fittings”, the secretariat of which is held by UNI.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 10305-4:2003.

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 97/23/EC.

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

EN 10305, *Steel tubes for precision applications — Technical delivery conditions*, consists of the following parts:

- *Part 1: Seamless cold drawn tubes;*
- *Part 2: Welded cold drawn tubes;*
- *Part 3: Welded cold sized tubes;*
- *Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems;*
- *Part 5: Welded cold sized square and rectangular tubes;*
- *Part 6: Welded cold drawn tubes for hydraulic and pneumatic power systems.*

## 1 Scope

This European Standard specifies the technical delivery conditions for seamless cold drawn steel tubes of circular cross section used in hydraulic and pneumatic power systems with specified outside diameter  $D \leq 80$  mm.

Tubes according to this document are characterised by having precisely defined tolerances on dimensions and a specified maximum surface roughness.

The allowed pressure rates and upper temperatures are the responsibility of the customer in accordance with the state of the art and in application of the safety coefficients specified in the applicable regulations, codes or standards. Concerning the lower temperature range applicability the impact energy requirements are given at 0° C.

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 (ESRs) 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.

## 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.

EN 10020:2000, *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 10052:1993, *Vocabulary of heat treatment terms for ferrous products*

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

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

EN 10256, *Non-destructive testing of steel tubes — Qualification and competence of level 1 and 2 non-destructive testing personnel*

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

EN ISO 377, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing (ISO 377:1997)*

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

EN ISO 4287, *Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287:1997)*

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EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2009)*

EN ISO 8492, *Metallic materials — Tube — Flattening test (ISO 8492:1998)*

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

prEN 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 leak-tightness instead of the hydrostatic test (ISO/DIS 10893-1:2009)*

prEN ISO 10893-2:2009., *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/DIS 10893-2:2009)*

prEN ISO 10893-3:2009, *Non destructive testing of steel tubes — Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transversal imperfections (ISO/DIS 10893-3:2009)*

prEN ISO 10893-10:2009, *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 transversal imperfections (ISO/DIS 10893-10:2009)*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 10020:2000, EN 10021:2006, EN 10052:1993, EN 10266:2003 and the following apply.

**3.1****employer**

organization for which a person works on a regular basis

NOTE The employer can be either the tube manufacturer or a third party organization providing non-destructive testing (NDT) services.

**3.2****manufacturer**

party to produce and to deliver tubes in accordance with this document

NOTE Where tubes are delivered by a supplier, see EN 10021:2006, Clause 6.

**3.3****imperfection**

discontinuity in the wall or on the pipe surfaces detectable by methods described in this document

NOTE Imperfections with a size complying with the acceptance criteria specified in this document are considered to have no practical implication on the intended use of the product.

**3.4****defect**

imperfection of a size not complying with the acceptance criteria specified in this document

NOTE Defects are considered to adversely affect or limit the intended use of the product.

**3.5****mother tube**

length of tube produced in the final cold drawing process