



**SLOVENSKI STANDARD**  
**kSIST FprEN 10305-6:2015**  
**01-november-2015**

---

**Jeklene cevi za precizno uporabo - Tehnični dobavni pogoji - 6. del: Hladno vlečene varjene cevi za hidravlične in pnevmatične tlačne vode**

Steel tubes for precision applications - Technical delivery conditions - Part 6: Welded cold drawn tubes for hydraulic and pneumatic power systems

Präzisionsstahlrohre - Technische Lieferbedingungen - Teil 6: Geschweißte kaltgezogene Rohre für Hydraulik- und Pneumatik-Druckleitungen

Tubes de précision en acier - Conditions techniques de livraison - Partie 6 : Tubes soudés étirés à froid pour circuits hydrauliques et pneumatiques

**Ta slovenski standard je istoveten z: FprEN 10305-6 rev**

---

**ICS:**

77.140.75	Jeklene cevi in cevni profili za posebne namene	Steel pipes and tubes for specific use
-----------	---	--

**kSIST FprEN 10305-6:2015**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**FINAL DRAFT**  
**FprEN 10305-6**

July 2015

ICS 77.140.75

Will supersede EN 10305-6:2005

English Version

**Steel tubes for precision applications - Technical delivery  
conditions - Part 6: Welded cold drawn tubes for hydraulic and  
pneumatic power systems**

Tubes de précision en acier - Conditions techniques de  
livraison - Partie 6 : Tubes soudés étirés à froid pour circuits  
hydrauliques et pneumatiques

Präzisionsstahlrohre - Technische Lieferbedingungen - Teil  
6: Geschweißte 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.

This draft European Standard was established by CEN 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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	5
4 Symbols .....	5
5 Classification and designation.....	6
5.1 Classification.....	6
5.2 Designation .....	6
6 Information to be supplied by the purchaser .....	6
6.1 Mandatory information .....	6
6.2 Options .....	6
6.3 Example of an order .....	7
7 Manufacturing process .....	7
7.1 Steelmaking process .....	7
7.2 Tube manufacture and delivery conditions .....	7
8 Requirements .....	8
8.1 General.....	8
8.2 Chemical composition .....	8
8.3 Mechanical properties.....	9
8.4 Appearance and soundness.....	9
8.5 Dimensions and tolerances .....	10
9 Inspection .....	14
9.1 Type of inspection .....	14
9.2 Inspection documents.....	14
9.3 Type of inspection documents.....	14
9.4 Summary of inspection and testing.....	15
10 Sampling.....	15
10.1 Test unit.....	15
10.2 Preparation of samples and test pieces .....	16
11 Test methods.....	16
11.1 Tensile test .....	16
11.2 Drift expanding test .....	16
11.3 Dimensional inspection .....	17
11.4 Roughness measurement.....	17
11.5 Visual examination .....	17
11.6 Non-destructive testing.....	17
11.7 Retests, sorting and reprocessing.....	18
12 Marking .....	18
13 Protection and packaging.....	18
13.1 Protection .....	18
13.2 Packaging .....	19
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 97/23/EC .....</b>	<b>20</b>
<b>Bibliography .....</b>	<b>21</b>

## Foreword

This document (FprEN 10305-6:2015) 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 10305-6:2005.

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.*

**FprEN 10305-6:2015 (E)****1 Scope**

This Part of EN 10305 specifies the technical delivery conditions for welded cold drawn tubes of circular cross section for use in hydraulic and pneumatic power systems.

Tubes according to this Part of EN 10305 are characterized by having precisely defined tolerances on dimensions and a specified 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 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 10020:2000, *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 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)*

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

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

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

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