
Avstenitne, avstenitno-feritne in feritne vzdolžno varjene cevi iz nerjavnega jekla za prehrabno in kemično industrijo

Austenitic, austenitic-ferritic and ferritic longitudinally welded stainless steel tubes for the food and chemical industry

Austenitische, austenitisch-ferritische und ferritische längsnahtgeschweißte Rohre aus nichtrostendem Stahl für die Lebensmittel- und chemische Industrie

Austénitiques, ferritiques et austéno-ferritiques Tubes soudés longitudinalement en acier inoxydable pour l'industrie alimentaire et chimique

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Ta slovenski standard je istoveten z: EN 10357:2013

ICS:

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

EN 10357

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Austenitic, austenitic-ferritic and ferritic longitudinally welded stainless steel tubes for the food and chemical industry

Austénitiques, ferritiques et austéno-ferritiques Tubes soudés longitudinalement en acier inoxydable pour l'industrie alimentaire et chimique

Austenitische, austenitisch-ferritische und ferritische längsnahtgeschweißte Rohre aus nichtrostendem Stahl für die Lebensmittel- und chemische Industrie

This European Standard was approved by CEN on 5 October 2013.

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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.

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.

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

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

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Foreword

This document (EN 10357:2013) 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 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 June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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

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EN 10357:2013 (E)**1 Scope**

This European Standard specifies dimensions, tolerances, materials, internal and external surface characteristics, and marking of stainless steels longitudinally fusion welded tubes for the food and chemical industry.

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 10028-7:2007, *Flat products made of steels for pressure purposes - Part 7: Stainless steels*

EN 10204, *Metallic products - Types of inspection documents*

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

EN ISO 4288, *Geometrical product specifications (GPS) - Surface texture: Profile method - Rules and procedures for the assessment of surface texture (ISO 4288)*

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3 Dimensions and tolerances (standards.iteh.ai)**3.1 Dimensions and tolerances for tubes**

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Dimensions and tolerances for tubes are indicated in Table 1 and Table 2.

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Table 1 — Preferred dimensions and tolerances (mm)

Series A	External tube diameter	13,00	19,00	23,00	29,00	35,00	41,00	53,00	70,00	85,00	104,00	129,00	154,00	204,00
	External diameter tolerances	±0,10	±0,10	±0,12	±0,15	±0,18	±0,21	±0,27	±0,35	±0,43	±0,78	±0,97	±1,16	±1,53
	Internal diameter (theoretical)	10,00	16,00	20,00	26,00	32,00	38,00	50,00	66,00	81,00	100,00	125,00	150,00	200,00
	Wall thickness	1,50	1,50	1,50	1,50	1,50	1,50	1,50	2,00	2,00	2,00	2,00	2,00	2,00
	Wall thickness tolerances	±0,15	±0,15	±0,15	±0,15	±0,15	±0,15	±0,15	±0,20	±0,20	±0,20	±0,20	±0,20	±0,20

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Table 2 — Alternative dimensions and tolerances ^a (mm)

Series B	External tube diameter	12,00	18,00	22,00	28,00	34,00	40,00	52,00								
	External diameter tolerances	±0,10	±0,10	±0,12	±0,15	±0,18	±0,21	±0,27								
	Internal diameter (theoretical)	10,00	16,00	20,00	26,00	32,00	38,00	50,00								
	Wall thickness	1,00	1,00	1,00	1,00	1,00	1,00	1,00								
	Wall thickness tolerances	±0,10	±0,10	±0,10	±0,10	±0,10	±0,10	±0,10								
Series C	External tube diameter	17,20	21,30	26,90	33,70	42,40	48,30	60,30	76,10	88,90	114,30					
	External diameter tolerances	±0,10	±0,11	±0,14	±0,17	±0,21	±0,24	±0,30	±0,38	±0,44	±0,86					
	Internal diameter (theoretical)	14,00	18,10	23,70	29,70	38,40	44,30	56,30	72,10	84,90	110,30					
	Wall thickness	1,60	1,60	1,60	2,00	2,00	2,00	2,00	2,00	2,00	2,00					
	Wall thickness tolerances	±0,15	±0,15	±0,15	±0,20	±0,20	±0,20	±0,20	±0,20	±0,20	±0,20					
Series D	External tube diameter	25,00	25,40	32,00	38,00	38,10	38,10	50,80	50,80	51,00	63,50	63,50	76,10	76,10	76,10	101,60
	External diameter tolerances	±0,13	±0,13	±0,16	±0,19	±0,19	±0,19	±0,25	±0,25	±0,25	±0,32	±0,32	±0,38	±0,38	±0,38	±0,76
	Internal diameter (theoretical)	22,60	22,20	29,60	35,60	35,10	34,90	47,80	47,60	48,60	60,50	60,30	73,10	72,90	72,10	97,60
	Wall thickness	1,20	1,60	1,20	1,20	1,50	1,60	1,50	1,60	1,20	1,50	1,60	1,50	1,60	2,00	2,00
	Wall thickness tolerances	±0,12	±0,16	±0,12	±0,12	±0,15	±0,16	±0,15	±0,16	±0,12	±0,15	±0,16	±0,15	±0,16	±0,20	±0,20

^a For dimensions different from the ones listed above the tolerances are:
 EN ISO 1127-D4 for external diameter < 90 mm
 EN ISO 1127-D3 for external diameter > 90 mm
 In external diameter tolerances ovality is included
 For wall thickness ± 10 %

3.2 Straightness

Straightness deviation for a given length shall be determined by the following formula:

$$0,0015 \times \text{length}$$

and shall not exceed 2 mm/m.

4 Information to be supplied by the purchaser

4.1 Mandatory information

The following information shall be supplied by the purchaser at the time of enquiry and order:

- a) the quantity (total weight or total metres or number of tubes);
- b) the reference to this standard ;
- c) the term “tube”;
- d) manufacturing process symbol and surface characteristics (see Table 3);
- e) the dimensions (outside diameter D and wall thickness T);
- f) single unit length and related tolerance;
- g) the designation of the steel grade according to EN 10217-7 except for ferritic grades;
- h) the designation of the steel grade according to EN 10028-7 only for ferritic;
- i) production and testing according to EN 10217-7 TC1 or TC2; for ferritic grades the reference values shall be agreed;
- j) other options according to EN 10217-7.

4.2 Example of an order

1000 m of welded tube according to EN 10357, manufacturing process BC, external diameter = 40 mm, thickness = 1 mm, single unit length 6000 mm (0/+100) mm test category 1 according to EN 10217-7, grade 1.4404 and inspection certificate 3.1 according to EN 10204:

1000 m Tube EN 10357 — BC - 40 × 1 × 6000 (0/+100) mm - TC1 – EN 10217-7/1.4404 - 3.1

5 Materials

Materials used for tubes manufacturing according to this standard shall be:

- austenitics and austenitic-ferritics according to EN 10217-7;
- ferritics according to EN 10028-7.