SLOVENSKI STANDARD
SIST EN 1592-4:1998

01-november-1998

Aluminij in aluminijeve zlitine - VF varjene cevi - 4. del: Odstopki mer in tolerance oblike cevi s kvadratnim, pravokotnim in profiliranim prerezom

Aluminium and aluminium alloys - HF seam welded tubes - Part 4: Tolerances on dimensions and form for square, rectangular and shaped tubes

Aluminium und Aluminiumlegierungen - HF-längsnahtgeschweißte Rohre - Teil 4: Grenzabmaße und Formtoleranzen für quadratische, rechteckige und geformte Rohre

Aluminium et alliages d'aluminium - Tubes électrosoudés HF - Partie 4: Tolérances sur dimensions et forme des tubes a section carrée, rectangulaire ou profilée

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ICS:

77.150.10	Aluminijski izdelki	Aluminium products

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Aluminium and aluminium alloys - HF seam welded tubes - Part 4: Tolerances on dimensions and form for square, rectangular and shaped tubes

Aluminium et alliages d'aluminium - Tubes électrosoudés HF - Partie 4: Tolérances sur dimensions et forme des tubes à section carrée, rectangulaire ou profilée

Aluminium und Aluminiumlegierungen - HF-längsnahtgeschweißte Rohre - Teil 4: Grenzabmaße und Formtoleranzen für quadratische, rechteckige und geformte Rohre

This European Standard was approved by CEN on 19 September 1997.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys ", 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 April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

Within its programme of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 12 "HF Seam Welded Tubes" to prepare the following standards :

EN 1592-4	Aluminium and aluminium alloys - HF seam welded tubes - Part 4 : Tolerances on dimensions and form for square, rectangular and shaped tubes

This standard is part of a series of four standards. The other standards deal with :

EN 1592-1	Aluminium and aluminium alloys - HF seam welded tubes - Part 1 : Technical conditions for inspection and delivery
EN 1592-2	Aluminium and aluminium alloys - HF seam welded tubes - Part 2 : Mechanical properties
EN 1592-3	Aluminium and aluminium alloys - HF seam welded tubes - Part 3 : Tolerances on dimensions and form for circular tubes

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Part of EN 1592 specifies the tolerances on dimensions and form of square, rectangular and shaped HF seam welded tubes.

These tubes are manufactured from rolled aluminium alloy strip longitudinally welded in a continuous process by the passage of an electric current across the abutting edges without the addition of filler metal.

This standard also applies to tubes manufactured from aluminium alloy strip which is painted, lacquered or anodized prior to forming.

Technical conditions for inspection and delivery are specified in EN 1592-1.

2 Normative references

This European Standard incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1592-1 Aluminium and aluminium alloys - HF seam welded tubes - Part 1 : Technical conditions for inspection and delivery

3 Dimensions

The dimensions of tubes shall be designated by the two extreme outside dimensions and wall thickness.

4 Tolerances on dimensions

4.1 Dimensions across flats (tolerances excluding flatness)

The dimensions across flats shall be measured as shown in figure 1.

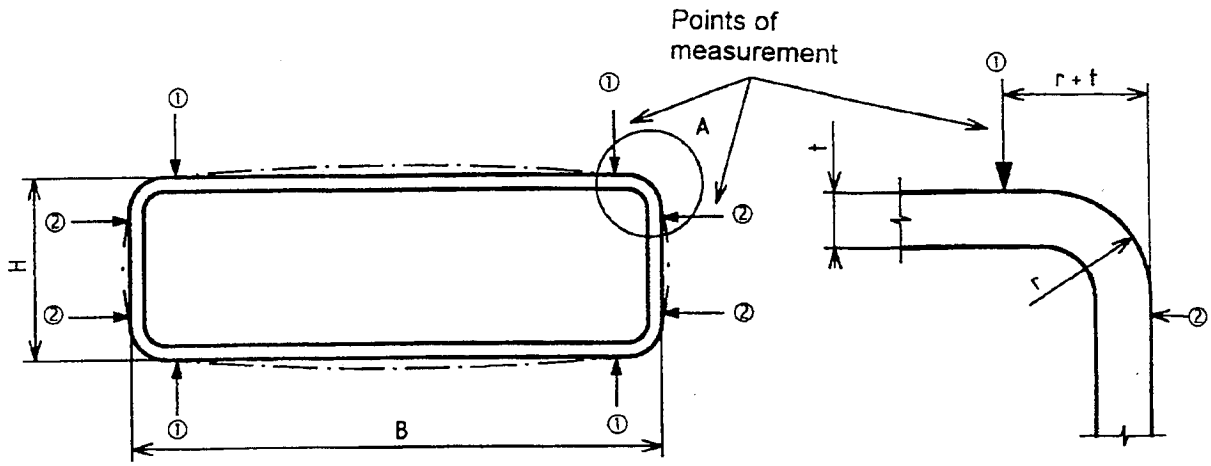

Figure 1 : Dimensions across flats

The tolerances on dimensions across flats shall be taken at position 1 and 2 in accordance with table 1.

Table 1 : Tolerances on dimensions across flats excluding flatness

Dimensions in millimetres

Nominal dimensions *B* or *H*	Tolerances
B or *H* ≤ 15	± 0,08
15 < *B* or *H* ≤ 30	± 0,10
30 < *B* or *H* ≤ 50	± 0,12
50 < *B* or *H* ≤ 70	± 0,15
70 < *B* or *H*	± 0,20

For *B* or *H* ≤ 15 mm, the measurements shall be taken using a micrometer with 1/100th millimetre graduations.

For *B* or *H* > 15 mm, the measurements shall be taken using a calliper gauge with an accuracy of at least 1/50th of a millimetre.

All measurements shall be taken at least 100 mm from each end of the tube.

4.2 Thickness

The tolerances on thickness shall be in accordance with table 2.

Table 2 : Tolerances on thickness

Dimensions in millimetres

Nominal thickness *t*	Tolerances
$0{,}6 \leq t \leq 1{,}0$	± 0,05
$1{,}0 < t \leq 2{,}5$	± 0,08

These tolerances are not applicable to the weld fin and corner radii of square and rectangular tubes. Other thicknesses and tolerances are available by written agreement between producer and purchaser.

4.3 Length

Tubes shall be supplied in one of the following ways :

- random lengths, subject to a tolerance of ± 100 mm ;

- specified cut lengths with the tolerances in accordance with table 3.

Table 3 : Tolerances on specified cut length

Dimensions in millimetres

Specified length *L*	Tolerances
$L < 1\,000$	± 1,0
$1\,000 \leq L < 3\,000$	± 1,5
$3\,000 \leq L < 7\,000$	± 2,0
$7\,000 \leq L$	± 3,0

In case of dispute the length shall be measured as shown in figure 2, the tube being placed on a flat surface with 90° angle plates abutted on each end. The measurement shall be taken across the total gap *l* between plates.

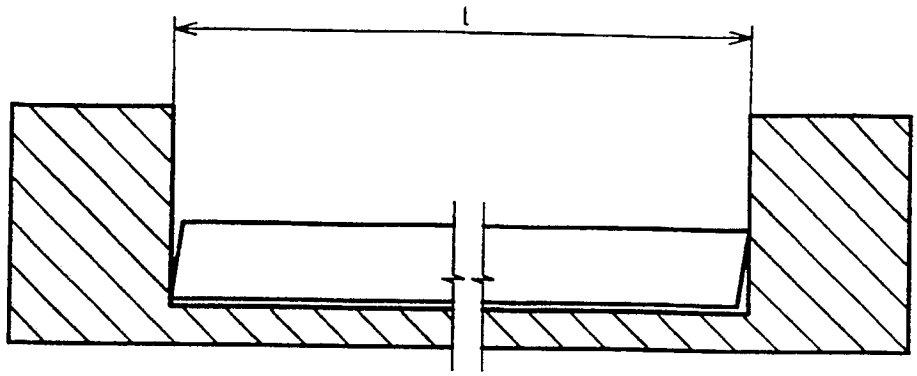

Figure 2 : Length measurement

5 Tolerances on shape

5.1 Straightness

Deviation from straightness shall be measured as shown in figure 3.

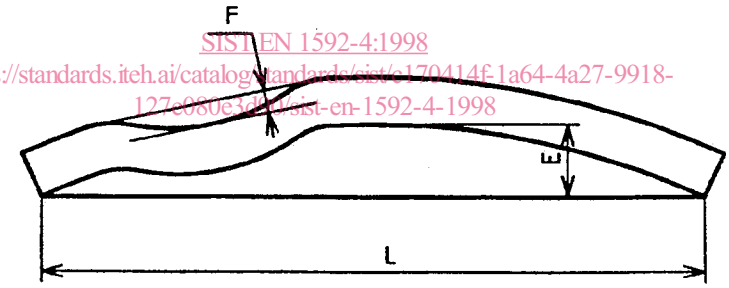

Figure 3 : Measurement of deviation from straightness

The deviation *F* measured on any 1 m length taken at random along the length of the tube, shall not exceed 1,6 mm. The maximum deviation *E*, expressed in millimetres, measured over the entire length of the tube shall not exceed 1,6 x *L* (in metres).

5.2 Flatness (convexity or concavity)

The deviation from flatness *Y* shall be measured as shown in figure 4.

The tolerances on flatness shall be in accordance with table 4.

All measurements shall be taken at least 100 mm from each end of the tube.