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**Aerospace series - Circular tubes for structures in aluminium and aluminium alloys - Diameter 6 mm  $\leq$  D  $\leq$  100 mm - Thickness 1 mm  $\leq$  a  $\leq$  6 mm - Dimensions**

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Luft- und Raumfahrt - Runde Konstruktionsrohre aus Aluminium und Aluminiumlegierungen - Durchmesser 6 mm  $\leq$  D  $\leq$  100 mm - Wanddicken 1 mm  $\leq$  a  $\leq$  6 mm - Maße

Série aéronautique - Tubes circulaires pour structures en aluminium et alliages d'aluminium - Diamètres 6 mm  $\leq$  D  $\leq$  100 mm - Epaisseurs 1 mm  $\leq$  a  $\leq$  6 mm - Dimensions

**Ta slovenski standard je istoveten z: EN 2257:1997**

**ICS:**

|           |   |  |
|-----------|---|--|
| 49.025.20 | Aluminij  | Aluminium                              |
| 49.080    | Letalski in vesoljski hidravlični sistemi in deli | Aerospace fluid systems and components |

**SIST EN 2257:2001**

**en**

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EUROPEAN STANDARD

EN 2257

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 1997

ICS 49.040.10

Descriptors: aircraft industry, structure, pipe, tube, aluminium, aluminium alloys, dimension

English version

**Aerospace series - Circular tubes for structures in  
aluminium and aluminium alloys - Diameter 6 mm  
 $\leq D \leq 100$  mm - Thickness 1 mm  $\leq a \leq 6$  mm -  
Dimensions**

Série aérospatiale - Tubes circulaires pour  
structures en aluminium et alliages d'aluminium  
- Diamètres 6 mm  $\leq D \leq 100$  mm - Epaisseurs 1 mm  $\leq a \leq 6$   
mm - Dimensions

Luft- und Raumfahrt - Runde Konstruktionsrohre  
aus Aluminium und Aluminiumlegierungen -  
Durchmesser 6 mm  $\leq D \leq 100$  mm - Wanddicken 1 mm  $\leq a \leq 6$   
mm - Maße

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels



## 0 Introduction

This standard is part of the series of EN metallic material standards for aerospace applications. The general organization of this series is described in EN 4258.

## 1 Scope

This standard specifies the dimensions and tolerances of circular tubes for structures in aluminium and aluminium alloys, diameter  $6 \text{ mm} \leq D \leq 100 \text{ mm}$ , thickness  $1 \text{ mm} \leq a \leq 6 \text{ mm}$ , for aerospace applications.

## 2 Normative references

This European Standard incorporates by dated or undated reference 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 3848 Aerospace series - Semi-finished products - Method of measuring form deviations 1)

EN 4258 Aerospace series - Metallic materials - General organization of standardization - Links between types of EN standards and their use 1)

[SIST EN 2257:2001](https://standards.iteh.ai/catalog/standards/sist/c4e154e8-8bc6-4ddc-8234-151ba7447cd4/sist-en-2257-2001)

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## 3 Form

See figure 1.

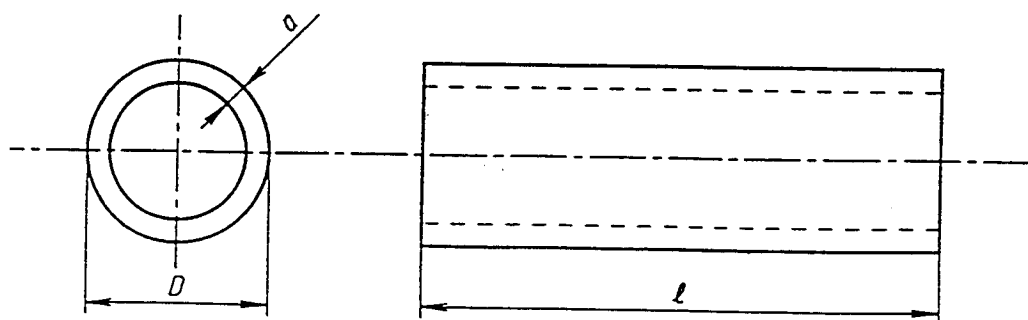


Figure 1

1) Published as AECMA Prestandard at the date of publication of this standard

## 4 Recommended dimensions and mass

### 4.1 Diameter, thickness and mass

See table 1.

Table 1

| <i>D</i><br>Nominal<br>mm | Linear mass <sup>1)</sup> in kg/m<br>for <i>a</i> nominal in mm : |       |      |      |      |      |      |      |      |
|---------------------------|---|-------|------|------|------|------|------|------|------|
|                           | 1   | 1,2   | 1,6  | 2    | 2,5  | 3,2  | 4    | 5    | 6    |
| 6                         | 0,044   | -     | -    | -    | -    | -    | -    | -    | -    |
| 8                         | 0,062   | -     | -    | -    | -    | -    | -    | -    | -    |
| 10                        | 0,080   | 0,093 | 0,12 | -    | -    | -    | -    | -    | -    |
| 12                        | 0,097   | 0,11  | 0,15 | -    | -    | -    | -    | -    | -    |
| 14                        | 0,11  | 0,14  | 0,17 | -    | -    | -    | -    | -    | -    |
| 16                        | 0,13  | 0,16  | 0,20 | 0,25 | -    | -    | -    | -    | -    |
| 18                        | 0,15  | 0,18  | 0,23 | 0,28 | -    | -    | -    | -    | -    |
| 20                        | 0,17  | 0,22  | 0,26 | 0,32 | -    | -    | -    | -    | -    |
| 25                        | 0,21  | 0,25  | 0,33 | 0,40 | -    | -    | -    | -    | -    |
| 32                        | 0,27  | 0,33  | 0,43 | 0,53 | -    | -    | -    | -    | -    |
| 40                        | 0,34  | 0,41  | 0,54 | 0,67 | 0,80 | -    | -    | -    | -    |
| 50                        | 0,43  | 0,51  | 0,68 | 0,84 | 1,00 | -    | -    | -    | -    |
| 63                        | -   | -     | 0,86 | 1,10 | 1,30 | 1,70 | 2,10 | 2,50 | -    |
| 80                        | -   | -     | 1,10 | 1,40 | 1,70 | 2,20 | 2,70 | 3,30 | -    |
| 90                        | -   | -     | -    | -    | 1,90 | 2,40 | 3,00 | 3,70 | -    |
| 100                       | -   | -     | -    | -    | 2,20 | 2,70 | 3,40 | 4,20 | 5,20 |

1) For information, calculated with a density of 2,8 kg/dm<sup>3</sup>

### 4.2 Length

The order shall specify that circular tubes may be supplied in fixed or in random lengths. In the event of a supply of random length the minimum and maximum values for the lengths shall be specified on the order.

## 5 Tolerances

### 5.1 Dimensional tolerances

#### 5.1.1 Diameter

See table 2.

Table 2

| Dimensions in millimetres |            |
|---------------------------|------------|
| Diameter                  | Tolerances |
| $6 \leq D \leq 10$        | $\pm 0,08$ |
| $10 < D \leq 18$          | $\pm 0,10$ |
| $18 < D \leq 25$          | $\pm 0,12$ |
| $25 < D \leq 50$          | $\pm 0,15$ |
| $50 < D \leq 90$          | $\pm 0,20$ |
| $90 < D \leq 100$         | $\pm 0,25$ |

**5.1.2 Thickness**

See table 3.

**Table 3**

| Thickness<br>mm     | Tolerances<br>% |
|---------------------|-----------------|
| $1 \leq a \leq 1,2$ | $\pm 10$        |
| $1,2 < a \leq 2$    | $\pm 9$         |
| $2 < a \leq 2,5$    | $\pm 8$         |
| $2,5 < a \leq 6$    | $\pm 7$         |

**5.1.3 Length**

See table 4; only applicable to tubes supplied in fixed lengths

**Table 4**

| Length          | Dimensions in millimetres             |  |
|-----------------|---------------------------------------|--|
|                 | $6 \leq D \leq 50$                    | $50 < D \leq 100$                      |
| $l \leq 1\ 000$ | $\begin{matrix} +3 \\ 0 \end{matrix}$ | $\begin{matrix} +4 \\ 0 \end{matrix}$  |
| $l > 1\ 000$    | $\begin{matrix} +6 \\ 0 \end{matrix}$ | $\begin{matrix} +10 \\ 0 \end{matrix}$ |

**5.2 Geometric tolerances - Straightness****5.2.1 Method of measurement and symbols**

See EN 3848.

**5.2.2 Tolerances**

See table 5.

**Table 5**

| Diameter            | Dimensions in millimetres                              |  |
|---------------------|--|--|
|                     | Straightness deviation<br>$Y_2$ on any length $X_2$ 1) |  |
| $6 \leq D \leq 100$ | $\leq 1,7$   |  |
| 1) $X_2 = 1\ 000$   |  |  |