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# International Standard



# 7271

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Aluminium and aluminium alloys — Foil and thin strip — Dimensional tolerances

*Aluminium et alliages d'aluminium — Feuilles et bandes minces — Tolérances dimensionnelles*

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[ISO 7271:1982](https://standards.iteh.ai/catalog/standards/sist/0bc628f5-b658-45c3-8f0e-2dc3518ad223/iso-7271-1982)

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Descriptors : aluminium, aluminium alloys, metal strips, dimension, dimensional tolerances.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7271 was developed by Technical Committee ISO/TC 79, *Light metals and their alloys*, and was circulated to the member bodies in December 1980.

It has been approved by the member bodies of the following countries :

Austria	Hungary	South Africa, Rep. of
Brazil	India	Spain
Canada	Iraq	Sweden
China	Italy	Switzerland
Czechoslovakia	Netherlands	United Kingdom
France	Norway	USSR
Germany, F.R.	Romania	Venezuela

The members bodies of the following countries expressed disapproval of the document on technical grounds :

Japan  
USA

# Aluminium and aluminium alloys — Foil and thin strip — Dimensional tolerances

## 1 Scope and field of application

This International Standard specifies dimensional tolerances for aluminium and aluminium alloy foil and thin strip for general purposes.

It is applicable to the following types of product, shipped in rolls :

- double-rolled foil, of aluminium or aluminium alloys having a minimum aluminium content of 98 % (*m/m*), with one side matt and the other bright, and of thicknesses in the range 0,006 mm (6 µm) to 0,050 mm (50 µm) inclusive;

- single-rolled foil and thin strip, of aluminium or aluminium alloys having a minimum aluminium content of 98 % (*m/m*) or of alloys of the type Al-Mn1Cu(3003), Al-Mg1(5005) or similar, with both sides the same, and of thicknesses in the range 0,021 mm (21 µm) to 0,200 mm (200 µm).<sup>1)</sup>

## 2 Preferred thicknesses

Preferred thicknesses apply to double-rolled foil only, (see table 1).

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Table 1

Nominal thickness		Covering area*	Nominal thickness		Covering area*
mm	µm	m <sup>2</sup> /kg	mm	µm	m <sup>2</sup> /kg
0,006	6	61,7	0,018	18	20,6
0,007	7	52,9	0,020	20	18,5
0,008	8	46,3	0,022	22	16,8
0,009	9	41,2	0,025	25	14,8
0,010	10	37,0	0,028	28	13,2
0,011	11	33,7	0,030	30	12,3
0,012	12	30,9	0,035	35	10,6
0,014	14	26,5	0,040	40	9,2
0,016	16	23,1	0,045	45	8,2
			0,050	50	7,4

\* Calculated on the basis of a density of 2 700 kg/m<sup>3</sup>.

Covering areas for other values of density are calculated using the conversion factor specified for each alloy in appropriate national standards.

1) According to the conventions in use in different countries, the upper limit of the thickness range may be different.

### 3 Thickness tolerances

The thickness tolerances given in table 2 refer to the intended thickness, i.e. to the thickness that is fixed on the rolling mill.

#### 3.1 Average thicknesses

The determination of average thicknesses shall be carried out by a method giving repeatable results.

Rolls of the same nominal thicknesses, of the same width, of the same minimum purity or alloy, of the same condition, and of the same consignment (or considered as such) shall form one batch.

#### 3.2 Point thicknesses (when specified in the order)

- Class I :  $\pm 10\%$  of the nominal thickness
- Class II :  $\pm 8\%$  of the nominal thickness

Ninety percent of the measurements shall be within the tolerance.

Measurement shall be carried out using appropriate apparatus or means.

In case of dispute, a mutually acceptable gravimetric method, based on weighing a sample of known area, shall be used for arbitration purposes.

### 4 Width tolerances

Width tolerances are given in table 3.

### 5 Ordering information

The order shall include the following information :

- quantity, in kilograms;
- minimum aluminium content or alloy designation;
- temper (hard, soft or intermediate);
- thickness, in millimetres or micrometres, and tolerance class, and, if specified, point thickness;
- width, in millimetres (type of tolerance, if necessary);
- surface aspect (indication of whether the bright or matt side is to be on the outside);
- dimension of rolls (length, in metres, or outside diameter, in millimetres);
- type and inside diameter of the core, in millimetres (with or without slot);
- length of core (if different from the width of the rolls).

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 Table 2

Size of batch kg		Tolerance on average thickness	
Over	Up to and including	Class I	Class II
—	3 000	$\pm 10\%$	$\pm 8\%$
3 000	10 000		$\pm 6\%$
10 000	—	$\pm 8\%$	$\pm 4\%$

Table 3

Dimensions in millimetres

Width	Width tolerances (for all thicknesses)		
	symmetrical	all plus	all minus
< 300	$\pm 0,5$	+ 1 — 0	+ 0 — 1
> 300	$\pm 1$	+ 2 — 0	+ 0 — 2