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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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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 7271 was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 6, *Wrought aluminium and aluminium alloys*.

This second edition cancels and replaces the first edition (ISO 7271:1982), which has been technically revised.

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

1 Scope

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 mass fraction of aluminium of 98 %, with one side matt and the other side 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 mass fraction of aluminium of 98 % or of alloys shown in Annex A or similar, with both sides the same, and of thicknesses in the range 0,021 mm (21 µm) to 0,200 mm (200 µm).

NOTE According to the conventions in use in different countries, the limit of the thickness range can be different.

The most commonly used general engineering alloys for foil are specified in Annex A.

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2 Preferred thicknesses

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Preferred thicknesses apply to double-rolled foil only, see Table 1.

Table 1 — Preferred thicknesses

Nominal thickness		Covering area[a]	Nominal thickness		Covering area[a]
mm	µm	m^2/kg	mm	µm	m^2/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	9,3
0,016	16	23,1	0,045	45	8,2
			0,050	50	7,4

[a] Calculated on the basis of a density of 2 700 kg/m^3.

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Covering areas for other values of density are calculated using the following equation:

$$a = \frac{1}{d \times t}$$

where

a is the covering area, in square metres per kilogram;

t is the thickness, in metres;

d is the density, in kilograms per cubic metre.

NOTE The density, d, can be obtained by looking up the international alloy designations given in Table A.1.

3 Thickness tolerances

3.1 General

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

Table 2 — Thickness tolerances

Size of batch kg	Tolerance on average thickness
≤10 000	±10 %
>10 000	±8 %

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3.2 Average thicknesses

The determination of average thicknesses shall be carried out by a method in which more than 50 % of the measurements shall be within ±5 % of the average.

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.

3.3 Point thicknesses

3.3.1 General

The point thickness is ±10 % of the nominal thickness.

Measurement shall be carried out by a method in which more than 50 % of the measurements shall be within ±5 % of the average.

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

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