International Standard 3487

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

Wrought copper and copper alloys — Cold-rolled flat products in coils or on reels (strip) — Dimensions and tolerances

Cuivre et alliages de cuivre corroyés — Produits plats laminés à froid livrés sur bobines ou en couronnes (bandes) — Dimensions et tolérances

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Descriptors : copper, copper alloys, cold rolled products, metal strips, grades (quality), dimensions, dimensional tolerances, form tolerances.

Foreword

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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 3487 was developed by Technical Committee ISO/TC 26, *Copper and copper alloys*, and was circulated to the member bodies in January 1978.

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

Australia	France	Romania
Austria	Germany, F.R.	South Africa, Rep. of
Belgium	India	Spain
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The member body of the following country expressed disapproval of the document on technical grounds :

USA

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Wrought copper and copper alloys — Cold-rolled flat products in coils or on reels (strip) — Dimensions and tolerances

1 Scope and field of application

This International Standard specifies dimensions and tolerances of cold-rolled flat products (strip) made from copper and copper alloys in accordance with clause 4.

For dimensions and tolerances of cold-rolled flat products in straight lengths, see ISO 3486.

2 References

ISO 497, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers.*

ISO 1634, *Wrought copper and copper alloys — Rolled flat products (plate, sheet, strip) — Mechanical properties.*

ISO 3486, *Wrought copper and copper alloys — Cold-rolled flat products delivered in straight lengths (sheet) — Dimensions and tolerances.*

3 Dimensions and tolerances

3.1 Thickness (see table 1)

Nominal thickness should be selected from the R''20 series of preferred numbers, in accordance with ISO 497.

For strip with a width over 50 mm the measurement of thickness should be made at a distance greater than 10 mm from the edge.

3.2 Width

See table 2.

3.3 Lateral curvature (edgewise)

The lateral curvature based on a fixed gauge length of 1 000 mm should be agreed between purchaser and supplier, but in general deviations normally obtainable are of the order of 6 mm per 1 000 mm fixed gauge length and would be applied to strip with a width greater than 15 mm.

Table 1 — Tolerances on thickness

Values in millimetres

Thickness		± Tolerances on thickness, for widths											
>	⩽	⩽ 200			> 200 ⩽ 350			> 350 ⩽ 700			> 700 ⩽ 1 000		
		Class 1	Class 2	Class 3	Class 1	Class 2	Class 3	Class 1	Class 2	Class 3	Class 1	Class 2	Class 3
⩾ 0,1	0,2	0,010	0,015	0,020	0,015	0,02	0,03	0,02	—	—	0,03	—	—
0,2	0,3	0,015	0,020	0,025	0,020	0,025	0,04	0,03	0,03	0,06	0,04	0,04	0,08
0,3	0,5	0,020	0,025	0,030	0,025	0,03	0,05	0,035	0,04	0,07	0,05	0,05	0,10
0,5	0,8	0,025	0,030	0,040	0,030	0,04	0,06	0,04	0,05	0,09	0,06	0,07	0,12
0,8	1,2	0,030	0,040	0,050	0,040	0,05	0,08	0,05	0,06	0,12	0,07	0,09	0,15
1,2	1,8	0,040	0,050	0,065	0,050	0,06	0,10	0,07	0,08	0,15	0,09	0,11	0,18
1,8	2,5	0,050	0,060	0,080	0,060	0,08	0,12	0,09	0,10	0,18	0,11	0,13	0,21

Table 2 — Tolerances on width of strip (rotary sheared)

Values in millimetres

Thick-ness		Tolerances on width, for widths					
>	⩽	⩽ 100	> 100 ⩽ 200	> 200 ⩽ 350	> 350 ⩽ 500	> 500 ⩽ 700	> 700 ⩽ 1 000
	1,0	+ 0,3	+ 0,4	+ 0,6	+ 1,0	+ 1,5	+ 2,0
1,0	1,5	+ 0,5	+ 0,6	+ 0,8	+ 1,2	+ 2,0	+ 2,5
1,5	2,5	+ 1,0	+ 1,2	+ 1,5	+ 2,0	+ 2,5	+ 3,0

4 Materials

For materials see table 3. Mechanical properties are given in ISO 1634.

Table 3 — Materials

Type	Designation
Coppers	Cu-ETP Cu-FRHC Cu-FRTP Cu-OF Cu-DHP
Alloyed coppers	CuAg0,05 CuAg0,1 CuAg0,05 (P) CuAg0,1 (P) CuAs (P)
Copper-zinc alloys	CuZn5 CuZn10 CuZn15 CuZn20 CuZn30 CuZn33 CuZn37 CuZn40
Copper-zinc-lead alloys	CuZn35Pb2 CuZn36Pb1 CuZn38Pb2 CuZn40Pb CuZn39Pb2
Special copper-zinc alloys	CuZn20Al2 CuZn28Sn1 CuZn38Sn1
Copper-tin alloys	CuSn2 CuSn4 CuSn6 CuSn8 CuSn10 CuSn4Zn4
Copper-aluminium alloys	CuAl5 CuAl8 CuAl8Fe3
Copper-nickel alloys	CuNi20 CuNi25 CuNi5Fe1Mn CuNi10Fe1Mn CuNi20Mn1Fe CuNi30Mn1Fe CuNi44Mn1
Copper-nickel-zinc alloys	CuNi18Zn20 CuNi18Zn27 CuNi15Zn21 CuNi12Zn24 CuNi10Zn27 CuNi10Zn28Pb1
Special copper alloys	CuSi3Mn1 CuBe1,7 CuBe2 CuCo2Be CuNi1Si CuNi2Si