

Cladding composite **CU-AL-CU** (Aluminum, double-side cladded with Copper)

Brief description

CU-AL-CU is a double side cold rolled cladded material composite combining high electrical conductivity of Copper with light weight, lower material cost as well as good electrical conductivity of Aluminum.

Standard - raw materials

Position	Material	Description	Material-No.	Standard
Basis	Aluminum	Al 99.5	EN AW-1050A	DIN EN 573-3
Cladding Layer	Copper	Cu-ETP	CW 004 A	DIN EN 13599

Chemical composition [%]

Aluminum	Al	Si	Fe	Cu	Mn	Mg	Zn	Ti	Other elements
Al 99.5	99.50 -	- 0.25	- 0.40	- 0.05	- 0.05	- 0.05	- 0.05	- 0.05	- 0.03

Copper	Cu	O	P	Pb	Bi				Other elements
Cu-ETP	99.90 -	- 0.040	- -	- 0.005	- 0.0005				- 0.03

Standard sizes¹⁾

Strip thickness: 0.4 - 6.0 mm

Strip width: 20 - 500 mm

Cut-to-length: 500 - 2.000 mm

Nominal layer thickness: Double-sided, each 8, 10, 15% of strip thickness.

¹⁾ Further sizes on request possible

Surface quality

Type/Description	Characteristics	Roughness Ra
regular (roll-brightened)	Metallically clean surface. Pitting, minimal defects and scratches are acceptable in a scale not impairing the technical function of composite layers	0.15 - 0.80 µm

Mechanical properties

Layer Cu [%]	Strength condition ²⁾	Tensile strength R _m [MPa]	Al-hardness HV0.1	Cu-hardness HV0.2	Elongation A ₈₀ [%]
8/8	A. LC	100 - 150	20 - 40	50 - 80	≥20
10/10		110 - 160			
15/15		120 - 170			

²⁾ Descriptions A and LC following to DIN EN 10139

Tolerances

- Size limits of thickness - according to classes A, B of DIN EN 10140
- Size limits of width - according to classes A, B of DIN EN 10140
- Size limits of length - according to classes A, B of DIN EN 10140

Edge type

GK according to DIN EN 10140

Delivering types

Strips, sheets

Ordering example

Every order should be specified in consideration of the following information based on this material data sheet:

Product feature	Example 1	Example 2
Cladding composite	CU-AL-CU	CU-AL-CU
Cladded layer P(side1-side2) [%]	P(10-10)	P(15-15)
Strength condition	A	LC
Surface quality	regular	regular
Edge type	GK	GK
Delivering type	Strips	Sheets
Thickness (tolerance) x width (tolerance) x length (tolerance)	0.80 (+/- 0.025) x 100 (+/-0.13) mm	1.20 (+/-0.030) x 420 (+/-0.30) x 1.500 (-0/+6) mm

Miscellaneous

All information in this material data sheet is referring to CU-AL-CU materials based on a standard production. Further product features on request.