

## Cladding composite AL-CU (Aluminum, single-side cladded with Copper)

### Brief description

AL-CU is a single-side cold rolled cladded material composite combining the high electrical conductivity of Copper with the light weight, the lower material cost as well as the 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 sizes<sup>1)</sup>

Strip thickness: 0.4 - 6.0 mm

Strip width: 20 - 500 mm

Cut-to-length: 500 - 2.000 mm

Nominal layer thickness: Single-side 10, 15 and 30% of strip thickness.

<sup>1)</sup> 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 <sup>2)</sup>	Tensile strength R <sub>m</sub> [MPa]	Al-hardness HV0.1	Cu-hardness HV0.2	Elongation A <sub>80</sub> [%]
10	A. LC	90 - 140	20 - 40	50 - 80	>= 20
15		100 - 150			
30		120 - 170			

<sup>2)</sup> 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-AL
Cladded layer P(side1-side2) [%]	P(15-10)	P(30-00)
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 AL-CU materials based on a standard production. Further product features on request.