

Material data sheet Al-Cu

Status: 25.03.2008

Cladding composite: **Al-Cu**
(Aluminium, single-side cladded with Copper)

Brief description

Al-Cu is a single-side cold rolled cladded composite material combining the high electrical conductivity of Copper with the light weight as well as the lower material costs of Aluminium.

Standard-raw materials

Position	Werkstoff	Description	Material-No.	Standard
Basis	Aluminium	Al 99,5	EN AW-1050A	DIN EN 573-3
Cladding Layer	Copper	Cu-ETP	2.0065	DIN EN 1652

Chemical composition (%)

Aluminium	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

Deliverable (standard)-sizes

Strip thickness: 0,5 – 2,3 mm
Strip width: 20 – 500 mm
Cut-to-length: 1.000 – 2.000 mm

Cladded layer and adhesion

Nominal layer thickness: Single-side 10, 15, 20 and 30% of strip thickness, intermediate layers on request alternatively as well

Adhesion: 70 – 110 N/cm strip width

Measuring of layer thickness: Microscopic

Surface quality

Type/Description	Characteristics	Roughness Ra
regular (roll-brightened)	Metallically clean surface. Pittings, minimal defects and scratches are acceptable in a scale not impairing the technical function of composite layers	0,15-0,80 µm

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Mechanical properties

Layer Cu (%)	Strength-condition ¹⁾	Tensile strength R _m (N/mm ²)	Al-hardness HV0,1	Cu- hardness HV0,2	Elongation A ₈₀ (%)
10	A, LC	90-140	20-40	50-80	≥ 20
15					
20					
30					

¹⁾ 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	Al-Cu	Al-Cu
Cladded layer P(side1-side2) (%)	P(15-00)	P(30-00)
Strength condition	A	LC
Surface quality	walzblank	walzblank
Edge type	GK	GK
Delivering type	Bänder	Stäbe
Thickness (tolerance) x width (tolerance) x length (tolerance) (mm)	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.