

Cladding composite **CopperPlus** (Ferritic Stainless Steel, both sides cladded with Copper)

Brief description

CopperPlus is a material composite based on a ferritic Stainless Steel with a both side cladded layer of Copper, for substitution of pure Copper.

Standard - raw materials¹⁾²⁾

Position	Material	Description	Grade	Standard
Core	Ferritic Stainless Steel	X6Cr17 <i>AISI 430</i>	1.4016 <i>UNS 430...</i>	EN 10088-2 <i>ASTM A666</i>
Cladded Layer	Copper	Cu-DHP (SF-Cu)	CW024A <i>C123...</i>	EN 1652 <i>ASTM B152</i>

1) Material name, number and standard in italics refer to US-standards

2) The associated chemical analyses take into account the lower as well as the upper limits of each element with respect to the corresponding European and US-standards

Chemical composition [%]

Steel	C	Si	Mn	P	S	Cr
1.4016	max. 0.08	max. 1.00	max. 1.00	max. 0.04	max. 0.015	16.00 18.00

Copper	Cu	O	P	Pb	Bi	others
Cu-DHP	99.90 -	- -	0.015 0.040	- -	- -	- -

Standard sizes*

Thickness: 0.5 mm
Strip width: 20 - 780 mm
Cut-to-length: 480 - 4.000 mm

*other sizes on request

Cladded layer and adhesion

Thickness of layer: double-sided, 10/10% of strip thickness, alternatively one-sided or difference cladding on request

Adhesion: Metallic bond with copper layer
No mechanical separation of foil from core possible

Measuring of layer thickness: Metallographical method

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Surface quality

Description	Characteristics	Roughness Ra
Mill Finish ¹⁾	Metallically clean surface. Pitting, minimal defects and scratches are acceptable in a scale not impairing the technical function of the outside layers of the composite material.	appr. 0.3 µm

¹⁾ other surface appearances to be agreed

Mechanical properties

Layer thickness [%]	Surface condition	Mechanical strength ¹⁾	Yield point R _{p0.2} [MPa]	Tensile Strength R _m [MPa]	Elongation A ₈₀ [%]
10/10	mill finish	LC ¹⁾	min 250	400-650	min. 25

¹⁾ Description LC following to DIN EN 10139

Tolerances

- Size limits of thickness - according to classes A, B, C 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, NK 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	CopperPlus	CopperPlus
Layer material	Cu-DHP	Cu-DHP
Cladded layer P(side1-side2) [%]	P(10-10)	P(10-10)
Strength condition	LC	LC
Surface quality	regular	regular
Edge type	GK	NK
Delivering type	Strips	Sheets
Thickness (tolerance) x width (tolerance) x length (tolerance)	0.80 (+/- 0.025) x 630 (+/-0.2)mm x 1500 (-0/+5) mm	1.20 (+/-0.030) x 380 (+2/-0) x Coil

Miscellaneous

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

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