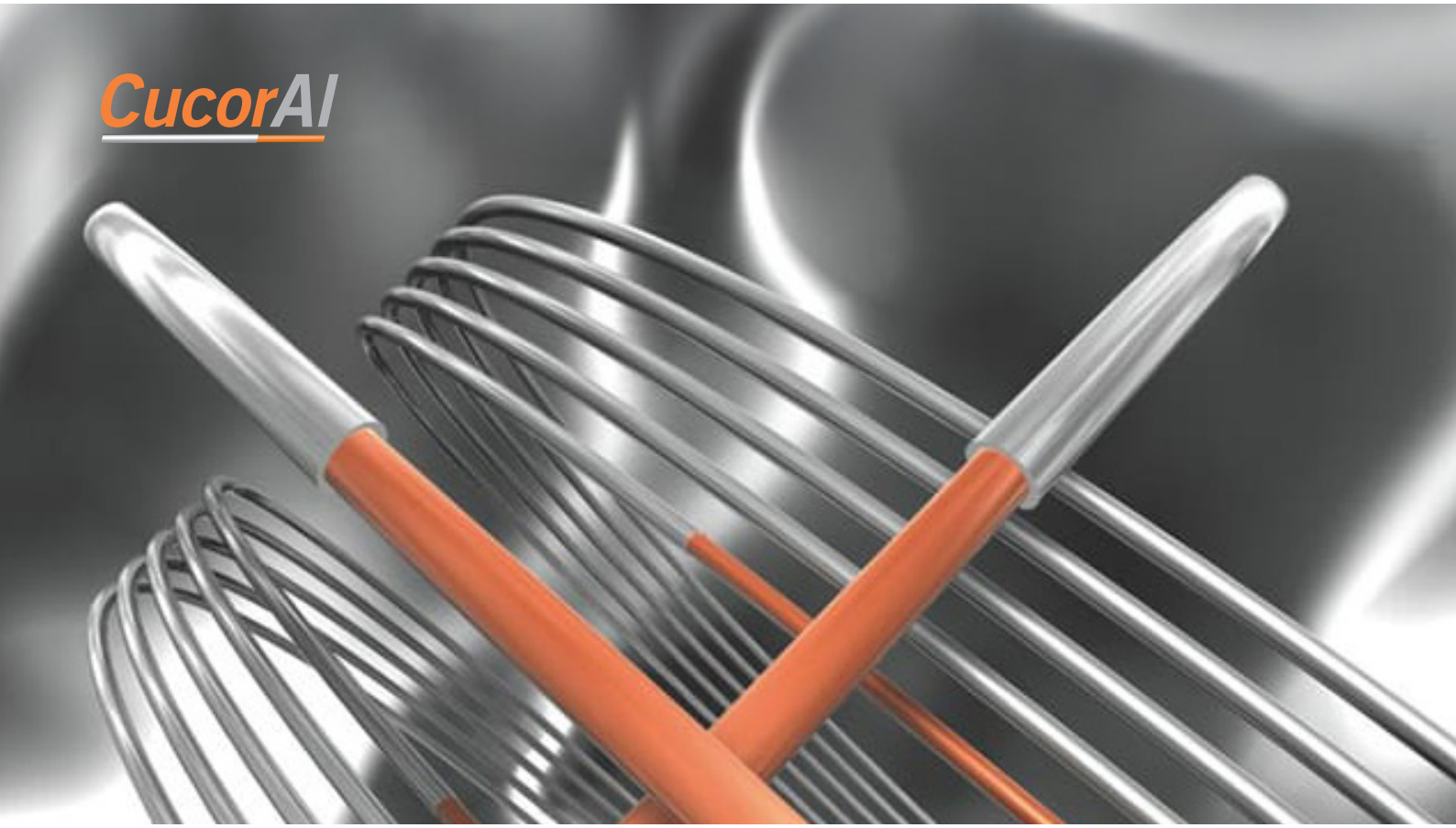


CucorAl PLUS Bonding Wire

Aluminum Cladded Copper Bonding Wire for Power Application

The **CucorAl PLUS** bonding wire combines the best of both worlds with its copper core and aluminum shell. Engineered for high-performance power electronics, this unique material mix delivers superior electrical, mechanical and thermal properties — outperforming standard aluminum wires in both passive and active power cycling tests.

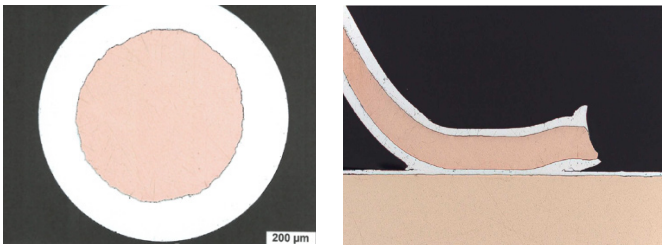
With ~50% copper by volume, **CucorAl PLUS** offers a robust solution for demanding applications, while maintaining compatibility with conventional aluminum bonding equipment. Its soft aluminum shell allows bonding on sensitive die surfaces. The Al/Cu structure enables reliable bonding windows without changing the chip metallization, supporting advanced packaging needs in modern power electronics.

Technical Parameters of **CucorAl PLUS** Bonding Wire							
Diameter	**(µm)**	150	200	300	380	400	500
Diameter	**(Mils)**	6	8	12	15	16	20
Elongation	**(%)**	> 10	> 15	> 15	> 15	> 15	> 15
Breaking Load	**(cN)**	170 - 350	400 - 650	1000 - 1400	1700 - 2500	1800 - 2600	2800 - 4000

For other diameters, please contact Heraeus Electronics Product Management.

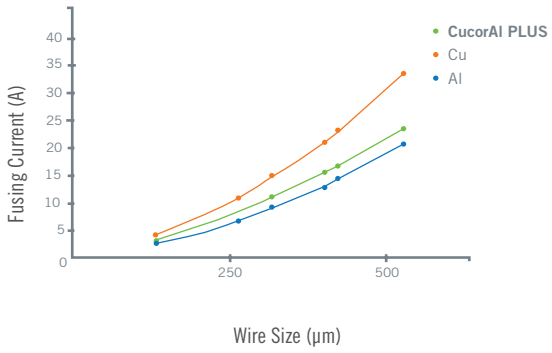
Key Features

- Excellent electrical and mechanical performance
- Reliable long-term behavior in power cycling
- Cu core in combination with soft aluminium shell ensures superior bondability and more than 5 times longer life time compared to Heraeus Electronics aluminum wires.
- Compatible with standard Al bonding tools and standard chip technology
- No chip metallization changes required
- Available in 150 - 500 µm diameters



CucorAl PLUS cross section

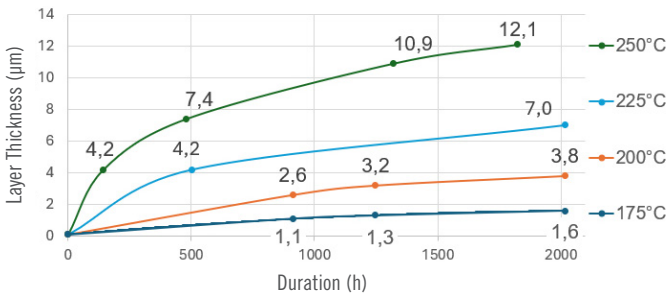
Electrical Comparison



Comparison	Specific electric resistivity (Ω x mm²/m)	IACS electric conductivity (%)
Aluminium	0.026	64
CucorAl-PLUS	0.021	81
PowerCu Soft	0.017	100

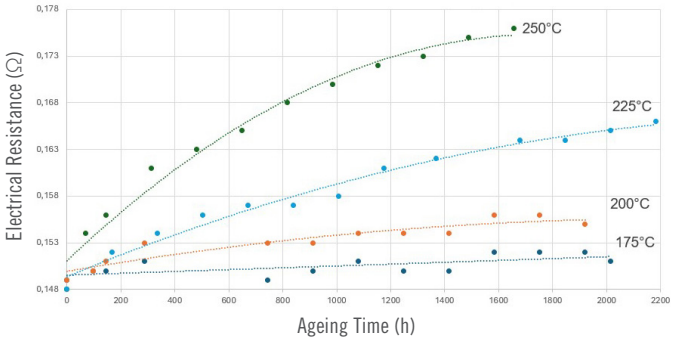
Thermal Storage

CucorAl PLUS Ø 300 µm
Growing of the intermetalic component due to the thermal ageing



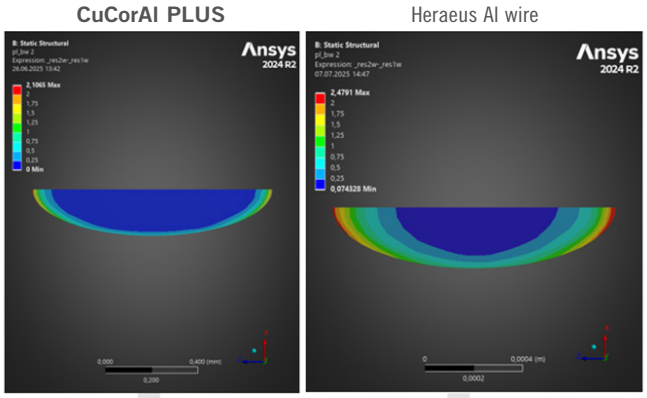
Electrical Resistance After Thermal Storage Test

CucorAl PLUS Ø 300 µm
Electrical resistance after thermal ageing



Simulation Results, Reliability

Change of plastic work density per cycle "dW" in the bond foot



- Lifetime ~1/ dW^a
- With increasing dW the lifetime decreases

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