Heraeus

Technical Data Sheet

Copper Coating

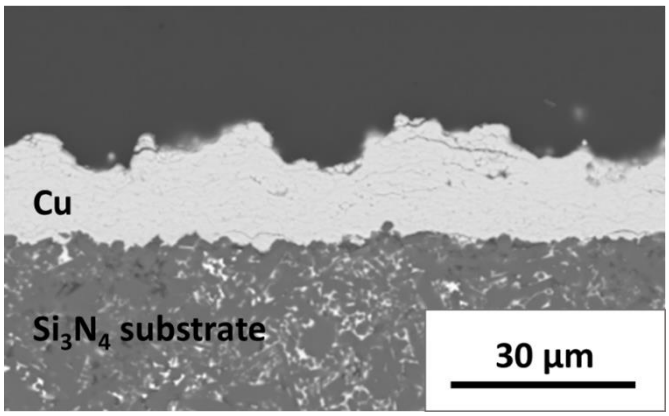
Heraeus High Performance Coatings

Description

Copper Coating by HPC is an environmentally friendly alternative where other deposition methods do not work. The coating particularly well suited for the use with insulating substrates, features good adhesion and high deposition rates. It can also be used as a process step for fabricating copper foils.

Potential fields of application are metallization in metal-ceramic-joining, electronics and power-electronics, as seed layer for (electro)chemical deposition processes.

Substrates: Metals and ceramics – minimum surface roughness recommended



SEM cross section of Cu on ceramic by HPC

Picture of 20 µm Cu foil by HPC

Key benefits

- Room temperature coating process
- Low Vacuum
- No chemical reaction or phase transition
- High deposition rate
- Good adhesion
- No pretreatment of substrates necessary

General film properties

Film thickness: 0,5 µm – 30 µm

Purity: High purity conforming to source material

Homogeneity: ± 15 % of film thickness

Roughness: significant increase
(e.g., R_a = 1,7 µm and R_z = 12 µm on Si_3N_4)

Typical mechanical properties

Adhesion: 15 MPa
(may vary with substrate surface condition)

Scratch-Test: Class 1

According to DIN EN ISO 26443 and EN ISO2050:2016

Physical properties

Conductivity: 35 MS/m (60% IACS)

Density: > 98 %

Hardness: 110 HV 0,005

Contact
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