

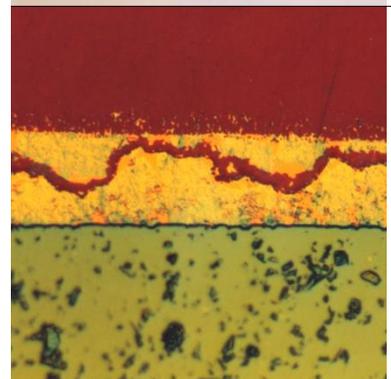
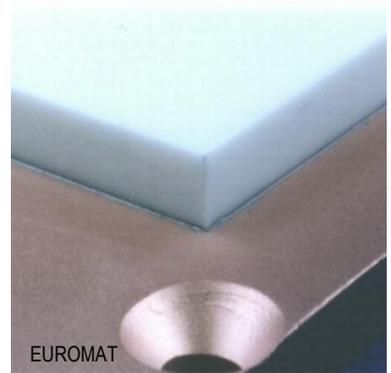
Ceramic-Metal-Joints

From prototype to serial production

Vacuum brazing of all engineering ceramics with metals

Heat Treatment
Sintering (MIM)
Brazing
Thermal Spraying
Electron Beam Welding

Engineering



Ceramic meets metal

Freedom of design and functionality enabled by vacuum brazing

Competence:

Special applications require special component properties which often cannot be guaranteed with a single metallic material. Listemann AG offers vacuum brazing as a toll service, a joining technique universally to apply. In principle each high-performance ceramic can be firmly joined with almost every metallic engineering material. Specific materials properties can be used at a place where really needed.

Customer benefit:

- Chemical bond which result in high mechanical strength even at elevated service temperatures.
- Broad range of material combinations possible between different ceramics as well as between ceramics and metals.
- Every high-performance ceramic can be brazed directly because active brazing does not require a prior metallization of the ceramic.
- Fluxless soldering in air atmosphere by using special S-Bond technology.

Properties:

By the use of active brazing alloys in vacuum atmosphere a direct wetting of oxide- and non oxide ceramics, even cBN and diamond can be achieved. Besides joining of structural components active brazing can be used to metalize ceramic surfaces or to generate functional structures on ceramic substrates.

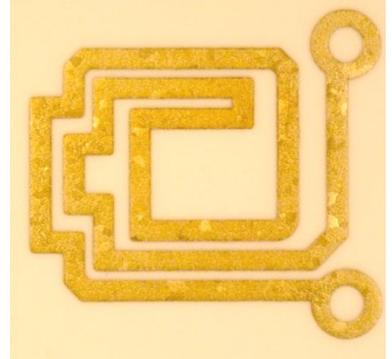
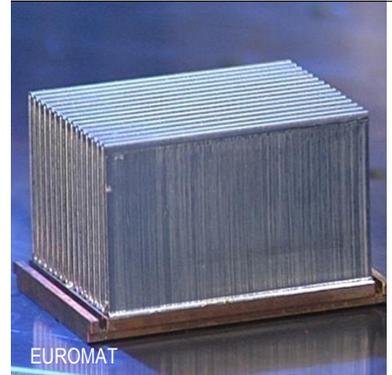
Application areas:

Food and pharmaceutical industry, mechanical engineering, sensor and measuring technique, cutting tools, watch and jewellery industry, safety engineering

Our service:

- Consulting in materials selection and component design
- Performing test brazing and sampling orders
- Brazing of serial components, up to mass production
- Proven experience in vacuum brazing of alumina (Al_2O_3), ruby und sapphire, zirconia (ZrO_2), silicon carbide (SiC), boron carbide (B_4C); silicon nitride (Si_3N_4), boron nitride (hexBN, cBN); aluminum nitride (AlN), graphite, diamond, CFC, etc.

By vacuum brazing almost every material combination between high-performance ceramics and metals can be realized.




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