Coining’s Multi-Layer Clads
Coining specializes in supplying stamped multi-layer Kovar™, Cu, W and Mo based clad materials. Our in-house rolling, annealing and analytics capabilities ensure the clad materials meet required specifications.

Cladding Defined
Cladding is a multi-step process where two or more metals are bonded or joined together under high pressure and temperature. Cladding allows dissimilar material to be joined for the creation of a ‘new’ material with engineered properties for conductivity, CTE, bondability and solderability, which are used in a wide variety of electronics applications including:

- Semiconductor die attachment with stringent thermal management and CTE requirements
- Wire bonding contact tabs requiring soldering to a PCB or ceramic or metal substrate
- Bond pads that bridge between Au based signal and Al based power circuitries.
- Solderable bridging conductors/straps.

Product Offerings

Die Attachment
Coining offers a variety of refractory metal based clads that provide a CTE similar to the semiconductor along with high thermal and electrical conductivities.

Typical die attach pads have metal layer combinations like:
- Ni/Mo/Ni/Au
- Cu/W/Cu/Au
- Au/Ni/Mo/Au80Sn20
- Au/Ni/Mo/Au88Ge12

Thickness: 0.010” typical
CTE range: 5-6 ppm/K typical
Thermal Cond. range: 135-185 W/m*K typical

Wire Bonding Contact Tabs/Terminals
Typical clads for wire bonding terminals include:
- Kovar™/Ag72Cu28 (85% Kovar), Brazing temperature > 790°C
- Cu (or Ag)/Ag60Cu30Sn10 (85% Cu), Brazing temperature > 625°C

Bond Pads
Bond pads are used in automotive and high power applications for connecting Al wire or ribbon to Cu tracked PCB or ceramic substrates/hybrids.

Clad Layers: Al/Cu (20-30% Al) typical
Thickness: 0.010” typical

Straps
Coining manufactures standard, custom and complex precision stamped straps, which bridge conductive patterns on 2 different subassemblies. The usually Cu-core straps are soldered at the intermediate or final assembly step when the solder clad is reflowed. All strap stamping is done in-house in our highly-integrated production facility.

Custom Multi-Layer Clads
Contact Coining Engineering to discuss a custom multi-layer clad material designed to meet your requirements.

Direct inquiries may be submitted through our website: www.ametek-ecp.com under Ask An Engineer.