



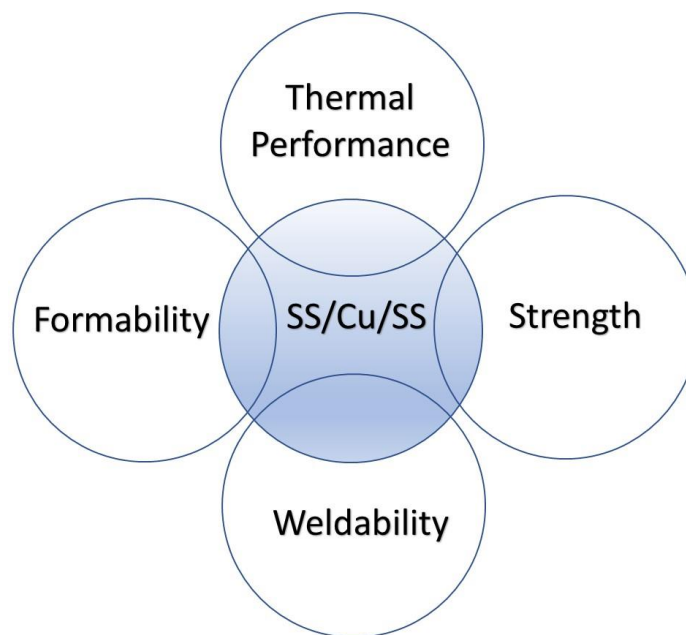
Engineered Materials Solutions

Wickeder Group

Clad Materials for Thermal Management Solutions in the Consumer Electronics Market

Our clad materials are specifically designed to provide efficient thermal management solutions for consumer electronic devices. Thermal management is an essential aspect of consumer electronics design as electronic components generate heat that can impact the performance and lifespan of devices. Without proper thermal management, excessive heat can cause devices to malfunction or even fail. To address this issue, materials that aid in heat dissipation are used.

Our clad materials are engineered to address the heat dissipation challenges faced by the consumer electronics market, enabling longer product life and better performance. Stainless steel copper clads (SUS/Cu/SUS) were specifically developed to have high thermal conductivity and uniform temperature distribution for use in the consumer electronic industry. Stainless steel clad to copper is a composite material made by bonding thin layers of stainless steel to either side of a thicker layer of copper.



Key material attributes of SS-CU-SS clad metals.

The stainless steel layer provides protection against corrosion and mechanical damage. The stainless steel layer also provides a good welding surface and scratch resistance. An austenitic stainless outside skin is used for superior formability and corrosion resistance. An alternate ferritic stainless outer skin is possible if magnetic properties are required. The high thermal conductivity of copper allows it to quickly transfer heat away from the electronic components.

The stainless steel clad to copper is used in consumer electronics to help dissipate the heat generated by electronic components, such as microprocessors, memory chips, and power management circuits. The stainless steel clad to copper material is also designed to be thin and lightweight, which makes it an ideal choice for use in portable electronic devices that require small form factors.

Furthermore, stainless steel clad to copper offers other benefits that make it a popular choice for thermal management in consumer electronics. For instance, it has excellent mechanical properties, such as high tensile strength and ductility, which means that it can withstand the stresses and strains that electronic devices are subjected to during use. Additionally, the material is easy to work with and can be shaped and cut to fit into different electronic device designs.

Key Features

- **High Thermal Conductivity:** Our clad materials offer high thermal conductivity, which helps dissipate heat generated by electronic components efficiently.
- **Lightweight and Thin:** Our products are designed to be lightweight and thin, ensuring they don't add extra weight or thickness to the devices they are used in.
- **Corrosion-resistant:** Our clad materials are made of corrosion-resistant materials, making them suitable for use in harsh environments.
- **Customizable:** We offer customizable options for our clad materials, allowing manufacturers to choose the specific thermal, physical and mechanical properties they require for their devices.
- **Thickness Range:** 50 μm – 6 mm
- **Width Range:** 10 mm – 660 mm

Calculated Mechanical Properties of SUS-Cu-SUS tri-layer clad – Annealed and Cold worked

Clad Config			Yield Strength	Tensile Strength	Elongation	Thermal Conductivity	Density
			MPa	MPa	%	W/m/K	g/cm ³
SUS-Cu-SUS Trilayer Clad	10:80:10	Annealed	115	298	47	323	8.8
		10%	273	339	28		
		20%	387	400	9		
		30%	440	475	6		
	25:50:25	Annealed	184	416	50	205	8.5
		10%	371	475	32		
		20%	503	565	14		
		30%	584	670	10		
	33:34:33	Annealed	222	481	51	144	8.3
		10%	425	550	34		
		20%	567	656	17		
		30%	663	777	11		

Other ratios and combinations are available on request.

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