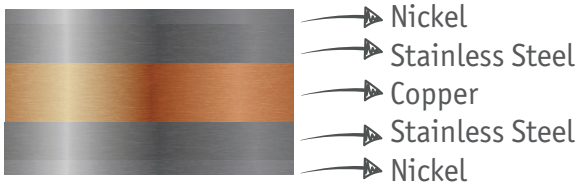
SIGMAclad60

Joining Solution for Li-Ion Battery Packs

Wickeder Group

Description & Availability

› Composition: Nickel / Austenitic Stainless Steel / Copper Austenitic Stainless Steel / Nickel
› Ratio: 60 % Copper
› Surfcae : Medium luster matte finish
› Temper: Annealed standard (specific tempers also available)
› Hardness: HV 150 - 210 (stainless steel)
› Thickness: 0.004 - 0.024" (0.10 - 0.60 mm)
› Width: 0.10 -12.00" (2.5 - 305 mm)



Physical Properties

	SIGMAclad60 annealed	Nickel annealed	Nickel 1/4 hard
Density: lbs/in³ (g/cm³)	0.309 (8.55)	0.321 (8.89)	0.321 (8.89)
Yield Stress: ksi (MPa)	16 (110)	15 (103)	35 (241)
Tensile Strength: ksi (MPa)	52 (359)	60 (414)	70 (483)
Elongation %	55	45	35
Erichsen Cup Height (mm)	11.9	12.1	9.6
Elastic Modulus: Msi (GPa)	21.5 (148)	30 (207)	30 (207)
CTE: µin/in/°F (µm/m/°C)	9.3 (16.7)	7.4 (13.3)	7.4 (13.3)
Thermal conductivity parallel: BTU-ft/h-ft²-°F (W/mK)	140 (242)	42 (73)	42 (73)

Properties can vary depending on finish thickness

Material Attributes

› Resistance / Laser weldable
› Solderable surface
› Superior conductivity to pure Nickel
› High power capacity
› Stainless steel layers provide robust welds
› Lighter weight (lower density)
› Increased conductivity enables gauge reductions
› Nickel surface provides high contact corrosion protection

Electrical Properties @ 75 °F (typical properties)

	SIGMAclad60	**201Ni**
Conductivity - % IACS	60 %	19.6 -22.6 %
Resistivity Ω-m - (Ω/CMF)	0.029 (17.3)	0.076 - 0.091 (46-55)

Properties can vary depending on finish thickness

Solderability

Material	Thickness (mm)	Electrocode Config.	Pull Strength Cathode / Anode {lbs}
SIGMAclad60	0.381	Parallel	51 / 69
SIGMAclad60	0.508	Step	84 / 84

Engineered Materials Solutions | 39 Perry Avenue | Attleboro, MA 02703, USA
Phone: +1 508 342 2100 | Fax: +1 508 342 2125 | E-Mail: solutions@emsclad.com | www.emsclad.com

Wickeder Westfalenstahl GmbH | Hauptstraße 6 | 58739 Wickede (Ruhr) |
Phone: + 49 2377 917 413 | Fax: +49 2377 917 100 | E-Mail: karl.haellen@wickeder.de |
www.wickeder.de

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