

Final Plating Finish Comparisons

	HASL (SnPb)	HASL Lead-Free	Electroless Nickel Immersion Gold – ENIG	Immersion Silver – IAg	Organic Solderable Coatings – OSP	Immersion Tin – ISn	Electrolytic Nickel Gold – NiAu
RoHS Compliant	No	Yes	Yes	Yes	Yes	Yes	Yes
Fabrication Costs	Low	Low	Medium	Medium	Low	Medium	High
Shelf Life	1 Year	1 Year	1 Year	9 – 12 Months*	9 – 12 Months*	9 – 12 Months*	1 Year
Assembly Cycle Capacity	Multiple	Multiple	Multiple	Multiple	Multiple	Multiple	Multiple
Multiple Rework Capacity	Limited	Limited	Limited	Yes	No	No	No
Solder Wettability	Excellent	Good	Good	Very Good	Good	Good	Good
Co-Planarity	Poor	Good	Excellent	Excellent	Excellent	Excellent	Good / Poor
Solder Joint Integrity	Excellent	Good	Good	Excellent	Good	Good	Poor**
Low Resistance / High Speed	No	No	No	Yes	N / A	No	No
Aluminum Wire Bond	No	No	No	No	Yes	No	Yes

* Requires Unique Storage Techniques

** Thicker applications of Au can cause embrittlement