ES-88-J: FINISH SPECIFICATION – SELECTIVE GOLD OVER PALLADIUM NICKEL ALLOY WITH SELECTIVE TIN LEAD ALLOY

1.0 SCOPE

This specification defines the requirements for all SELECTIVE GOLD OVER SELECTIVE PALLADIUM NICKEL ALLOY WITH SELECTIVE TIN LEAD ALLOY finishes on metallic surfaces.

2.0 PURPOSE

To define the standard finish characteristics and finish codes along with their minimum and maximum layer requirements.

3.0 REFERENCE DOCUMENTS

ES-88 Molex Finish Specification

4.0 DEFINITIONS

4.1 Finish Specification Codes

4.1.1 Selective Hard Gold over Selective 80/20 Palladium Nickel Alloy with Selective 60/40 Tin Lead Alloy over Nickel Overall

Note: See ES-88 for specific material properties, quality, packaging, etc. details.
Conversion factor 1µm = 39.37µin

PROCESS CODE	APPEARANCE CODES	FINISH CODE	SELECT HARD GOLD FLASH MIN µin (µm) MAX µin (µm)	SELECT 80/20 Pd/Ni MIN µin (µm) MAX µin (µm)	SELECT 60/40 TIN LEAD MIN µin (µm) MAX µin (µm)	OVERALL NICKEL MIN µin (µm) MAX µin (µm)	OBSOLETE/ RECOMMENDED
	M	532	2(0.05) 10(0.25)	40(1.02) 50(1.27)	100(2.54) 200(5.08)	50(1.27)	
	M	807	5(0.13)	40(1.02)	20(0.51) 60(1.52)	50(1.27)	
	M	814	4(0.10) 10(0.25)	40(1.02)	100(2.54)	50(1.27)	
	M	816	2(0.05) 10(0.25)	15(0.38)	75(1.91)	50(1.27)	
	M	817	2(0.05) 10(0.25)	30(0.76)	75(1.91)	50(1.27)	
	M	818	2(0.05) 10(0.25)	50(1.27)	75(1.91)	50(1.27)	
		849	2(0.05) 10(0.25)	30(0.76)	75(1.91)	100(2.54)	
		850	2(0.05) 10(0.25)	15(0.38)	75(1.91)	100(2.54)	
		852	2(0.05) 10(0.25)	40(1.02)	150(3.81)	50(1.27)	RECOMMENDED

UNLESS OTHERWISE SPECIFIED MAXIMUM FINISH THICKNESS ALLOWED ABOVE MINIMUMS:

Continuous and Batch Plating:

Nickel	Continuous plating	50µ" (1.27µm)
	Batch plating	50µ" (1.27µm)
Tin-Lead Alloy	Continuous plating	75µ" (1.91µm)
	Batch plating	250µ" (6.35µm)
Gold	Continuous plating	10µ" (0.25µm)
	Batch plating	20µ" (0.51µm)
Palladium Nickel Alloy	Continuous plating	20µ" (0.51µm)
	Batch plating	50µ" (1.27µm)

4.1.2 Selective Hard Gold over Selective 80/20 Palladium Nickel Alloy with Selective 90/10 Tin Lead Alloy over Nickel Overall

Note: See ES-88 for specific material properties, quality, packaging, etc. details.
Conversion factor 1µm = 39.37µin

PROCESS CODE	APPEARANCE CODES	FINISH CODE	SELECT HARD GOLD FLASH MIN µin (µm) MAX µin (µm)	SELECT 80/20 Pd/Ni MIN µin (µm) MAX µin (µm)	SELECT 90/10 TIN LEAD MIN µin (µm) MAX µin (µm)	OVERALL NICKEL MIN µin (µm) MAX µin (µm)	OBSOLETE/ RECOMMENDED
		808	2(0.05) 10(0.25)	20(0.51)	75(1.91)	50(1.27)	
	M	809	2(0.05) 10(0.25)	30(0.76)	75(1.91)	100(2.54)	
	M	810	2(0.05) 10(0.25)	15(0.38)	75(1.91)	100(2.54)	
	M	811	2(0.05) 10(0.25)	15(0.38)	75(1.91)	50(1.27)	
		812	2(0.05) 10(0.25)	30(0.76)	100(2.54)	50(1.27)	
		813	2(0.05) 10(0.25)	30(0.76)	75(1.91)	50(1.27)	OBSOLETE
		815	2(0.05) 10(0.25)	15(0.38)	150(3.81)	50(1.27)	OBSOLETE
		819	2(0.05) 10(0.25)	20(0.5)	40(1)	20(0.5)	OBSOLETE
	M	842	2(0.05) 10(0.25)	30(0.76)	75(1.91)	50(1.27)	
	M	854	2(0.05) 10(0.25)	15(0.38)	150(3.81)	50(1.27)	
	M	855	2(0.05) 10(0.25)	30(0.76)	150(3.81)	50(1.27)	
		856	2(0.05) 10(0.25)	20(0.51)	150(3.81)	50(1.27)	

UNLESS OTHERWISE SPECIFIED MAXIMUM FINISH THICKNESS ALLOWED ABOVE MINIMUMS:

Continuous and Batch Plating:

Nickel	Continuous plating	50µ" (1.27µm)
	Batch plating	50µ" (1.27µm)
Tin-Lead Alloy	Continuous plating	75µ" (1.91µm)
	Batch plating	250µ" (6.35µm)
Gold	Continuous plating	10µ" (0.25µm)
	Batch plating	20µ" (0.51µm)
Palladium Nickel Alloy	Continuous plating	20µ" (0.51µm)
	Batch plating	50µ" (1.27µm)

4.1.2 Selective Hard Gold over Selective 80/20 Palladium Nickel Alloy with Selective 90/10 Tin Lead Alloy over Nickel Overall (Continued….)

Note: See ES-88 for specific material properties, quality, packaging, etc. details.
Conversion factor 1µm = 39.37µin

PROCESS CODE	APPEARANCE CODES	FINISH CODE	SELECT HARD GOLD FLASH MIN µin (µm) MAX µin (µm)	SELECT 80/20 Pd/Ni MIN µin (µm) MAX µin (µm)	SELECT 90/10 TIN LEAD MIN µin (µm) MAX µin (µm)	OVERALL NICKEL MIN µin (µm) MAX µin (µm)	OBSOLETE/ RECOMMENDED
		820	2(0.05) 10(0.25)	100(2.54)	100(2.54)	50(1.27)	OBSOLETE
	M	841	10(0.25) 15(0.38)	50(1.27) 70(1.78)	100(2.54)	75(1.91)	
	M	843	5(0.13) 10(0.25)	40(1.02)	100(2.54)	50(1.27)	
	M	844	2(0.05) 10(0.25)	50(1.27)	75(1.91)	50(1.27)	
		846	4(0.10)	48(1.22)	75(1.91)	60(1.52)	
		847	4(0.10)	40(1.02) 50(1.27)	200(5.08)	20(0.51)	NOT RECOMMENDED
		848	2(0.05) 10(0.25)	50(1.27)	75(1.91)	100(2.54)	
		851	2(0.05) 10(0.25)	40(1.02)	150(3.81)	50(1.27)	
	B	853	2(0.05) 10(0.25)	48(1.22)	100(2.54)	60(1.52)	

UNLESS OTHERWISE SPECIFIED MAXIMUM FINISH THICKNESS ALLOWED ABOVE MINIMUMS:

Continuous and Batch Plating:

Nickel	Continuous plating	50µ” (1.27µm)
	Batch plating	50µ” (1.27µm)
Tin-Lead Alloy	Continuous plating	75µ” (1.91µm)
	Batch plating	250µ” (6.35µm)
Gold	Continuous plating	10µ” (0.25µm)
	Batch plating	20µ” (0.51µm)
Palladium Nickel Alloy	Continuous plating	20µ” (0.51µm)
	Batch plating	50µ” (1.27µm)

4.1.3 Selective Hard Gold over Selective 90/10 Palladium Nickel Alloy with Selective 90/10 Tin Lead Alloy over Nickel Overall

Note: See ES-88 for specific material properties, quality, packaging, etc. details.
Conversion factor 1µm = 39.37µin

PROCESS CODE	APPEARANCE CODES	FINISH CODE	SELECT HARD GOLD FLASH MIN µin (µm) MAX µin (µm)	SELECT 90/10 Pd/Ni MIN µin (µm) MAX µin (µm)	SELECT 90/10 TIN LEAD MIN µin (µm) MAX µin (µm)	OVERALL NICKEL MIN µin (µm) MAX µin (µm)	OBSOLETE/ RECOMMENDED
		845	5(0.13)	48(1.22)	150(3.81)	20(0.51)	NOT RECOMMENDED

UNLESS OTHERWISE SPECIFIED MAXIMUM FINISH THICKNESS ALLOWED ABOVE MINIMUMS:

Continuous and Batch Plating:

Nickel	Continuous plating	50µ" (1.27µm)
	Batch plating	50µ" (1.27µm)
Tin-Lead Alloy	Continuous plating	75µ" (1.91µm)
	Batch plating	250µ" (6.35µm)
Gold	Continuous plating	10µ" (0.25µm)
	Batch plating	20µ" (0.51µm)
Palladium Nickel Alloy	Continuous plating	20µ" (0.51µm)
	Batch plating	50µ" (1.27µm)