



# Inspection Criteria - Plated Circuit Boards

**Defects in Plated Circuit** - the effective hole pad area on all plated holes shall be circumferentially continuous and shall nowhere be less than 0.005" from hole to pad edge.

**Pin Holes on Walls of Holes** - permissible, if maximum dimension does not exceed 25% of hole diameter, if present in not more than 10% of total holes, and if not more than one in any one hole.

**Microsection of Production Boards** - if required shall not be conducted on more than 1% of production lot with a minimum of 2 boards.

**Wall Thickness of Copper Plating in Holes** - minimum of 0.001" for holes with diameter 1/2 board thickness or greater. Thickness for smaller holes to be subject to agreement between vendor and customer.

**Wall Thickness of Tin Lead Plating in Holes** - average minimum thickness of 0.0005" and absolute minimum thickness of 0.0003".

**Solderability Tests** - tinning with proper wetting of lands shall be completed within 3 seconds by either of these two methods:

- (a) **Soldering Iron** - the lands shall be tinned using a soldering iron having a bit 1.18" ± 0.2" long by 0.21" ± .04" diameter with the tip forming an angle of 45° ± 10° maintained at a temperature of 270° ± 10°C throughout the test.

The holder shall be 60/40 Tin-lead alloy, with a non corrosive resin core, in the form of a wire having a diameter not greater than 0.059".

- (b) **Solder Bath** - using 60/40 Tin lead alloy at a temperature of 240-250°C. The lands should have been previously treated with a non-corrosive flux. To check solderability of the plated-through holes place board on surface of solder bath and examine holes for wetting. If solder penetrates 80% of the holes, the solderability shall be considered satisfactory.

**Misalignment of Holes and Land** - unless otherwise specified, the radian metal width at any one point shall not be less than 50% of the width as defined as one half the difference between the minimum permitted diameter of the land and the maximum permitted of the hole.



# Electro-Plating Specifications

PLATING DASH NO.	TYPE OF PLATING	THICKNESS OF PLATE	APPLICABLE SPECIFICATIONS if any
-1	Copper strike Silver plate	0.0003/0.0005	QQ-S-365, Type III
-2	Copper strike Silver plate Gold plate	0.0003/0.0005 0.000030/0.000050	QQ-S-365, Type III MIL-G-45204, Type II
-2.2	Copper strike Silver plate Gold plate	0.0003/0.0005 0.000030/0.000050	QQ-S-365, Type II MIL-G-45204, Type II
-3	Copper strike Gold plate	0.000050/0.000070	MIL-G-45204, Class 1, Type II
-3.2	Copper strike Gold plate	0.000100/0.000150	MIL-G-45204, Class 2, Type II
-3.3	Copper strike Gold plate	0.000200/0.000250	MIL-G-45204, Class 3, Type II
-3.4	Copper strike Gold plate	0.000050/0.000070	MIL-G-45204, Class 1, Type I
-3.5	Copper strike Gold plate	0.000100/0.000150	MIL-G-45204, Class 2, Type I
-3.6	Copper strike Gold plate	0.000200/0.000250	MIL-G-45204, Class 3, Type I
-4	Copper strike Solder plate	0.0005 Min.	MIL-F-14072 (M222, Type I)
-5	Tin plate	0.0002/0.0004	MIL-T-10727, Type I
-6	Hot tin dip	Approx. 0.0002	MIL-T-10727, Type II
-7	Copper strike Gold flash	0.000010/0.000020	MIL-G-45204, Type II
-9	Copper strike Silver plate Gold flash	0.0003/0.0005 0.000010/0.000020	QQ-S-365, Type III MIL-G-45204, Type II
*-10	Copper strike Gold plate	0.000030 Min.	MIL-G-45204, Type II

PLATING DASH NO.	TYPE OF PLATING	THICKNESS OF PLATE	APPLICABLE SPECIFICATIONS if any
-11	Copper strike Cadmium plate	0.0003/0.0005	QQ-P-416, Type I, Class 2
-11.2	Copper strike Cadmium plate	0.0003/0.0005	QQ-P-416, Type II, Class 2 (with iridescent yellow coating)
-11.3	Copper strike Cadmium plate	0.0003/0.0005	QQ-P-416, Type II, Class 2 (with olive drab coating)
-12	Copper strike Nickel plate	0.0003/0.0005	QQ-N-290, Class 1, Type VI, 1XC1
-13	Copper strike Nickel plate Chrome flash	0.0003/0.0005 0.000015/0.000030	QQ-N-290, Class 1, Type VI, 1XC1 QQ-C-320, Class 1, Type I
-13.2	Copper strike Nickel plate Chromium flash	0.0003/0.0005 0.000015/0.000030	QQ-C-320, Class 1, Type II (Satin finish)
-14	Black oxide	---	MIL-F-14072 (E311)
-17	Passivate	---	MIL-F-14072 (E300)
-17.2	Black passivate	---	MIL-C-13924 Class III

  

Anodized colors on aluminum		
-20	Clear	MIL-A-8625, Type II
-21	Brown	
-22	Red	
-23	Orange	
-24	Yellow	
-25	Green	
-26	Blue	
-27	Violet	
-28	Grey	
-30	Black	

\*Platings as specified in MIL-T-55155

NOTE: The "Thickness of Plate" is in inches and the "Plating Dash No." is used after the Part No. to indicate finish.