APCT, Inc
when reliability and performance are critical

Common IPC-6012C Requirement Differences

Characteristic	Requirements		
	Class 1	Class 2	Class 3
Annular Ring External	180° Breakout Accepted	90° Breakout Accepted	50µm [0.00197 in.] min.
Annular Ring Internal	180° Breakout Accepted	90° Breakout Accepted	25µm [0.00098 in.] min.
Annular Ring, Unsupported Hole	90° Breakout Accepted	90° Breakout Accepted	150µm [0.00591 in.] min.
Bow & Twist	Max. of 0.75% for Surface Mount Boards / 1.5% for all others		
Burrs and Nodules	Accepted if min. hole diameter and copper thickness is met.		
Conductor Spacing Reduction	As Specified or 30%		As Specified or 20%
Conductor Thickness Reduction	Not to Exceed 30% of Min.		Not to Exceed 20% of Min.
Conductor Width	As specified or 80% of conductor pattern		
Conductor Width Reduction	As Specified or 30%		As Specified or 20%
Conductor Imperfections	30% of min. specified in 10% of length or 25mm [0.984 in]	30% of min. specified in 10% of length or 13mm [0.512 in]	
Continuity	Resistance ≤ 50Ω	Resistance ≤ 20Ω	
Cracks, Laminate	Cracks in Zone B not > 150µm [0.00591 in]	Cracks in Zone B not > 80µm [0.00315 in]	
Cracks, Barrel / Corner	None Allowed	None Allowed	None Allowed
Cracks, External Foil	Allowed if not through plating	Allowed if not extended into plating	
Cracks, Internal Foil	One side of hole if not through foil thickness	Not Allowed	
Dielectric Thickness	90µm [0.00354 in.] min. unless specified thinner		
Dielectric withstanding voltage	No Requirement	Spacing ≥ 80µm [0.00315 in], 500Vdc Spacing < 80µm [0.00315 in], 250Vdc	
Dewetting Solder Connection areas	15% Max.	5% Max	5% Max
Copper Plating Thickness Blind Via: Average	20µm [0.00079 in.] min.	20µm [0.00079 in.] min.	25µm [0.00098 in.] min.
Copper Plating Thickness Blind Via: Minimum	18µm [0.00071 in.] min.	18µm [0.00071 in.] min.	20µm [0.00079 in.] min.
Copper Plating Thickness Buried Via: Average	13µm [0.00051 in.] min.	15µm [0.00059 in.] min.	15µm [0.00059 in.] min.
Copper Plating Thickness Buried Via: Minimum	11µm [0.00043 in.] min.	13µm [0.00051 in.] min.	13µm [0.00051 in.] min.
Copper Plating Thickness, Hole & Surface: Average	20µm [0.00079 in.] min.	20µm [0.00079 in.] min.	25µm [0.00098 in.] min.
Copper Plating Thickness, Hole & Surface: Minimum	18µm [0.00071 in.] min.	18µm [0.00071 in.] min.	20µm [0.00079 in.] min.
Resin Filled For Blind & Buried Via	Not Required	No Requirement for Blind, 60% min. for Buried	
Voids, Copper in Hole	Three per Hole, not more than 10% dia. and length	Three per Hole, not more than 5% dia. and length	One per Hole, not more than 5% dia. and length
Insulation Resistance	Resistance > 0.5 MΩ	Resistance > 2.0 MΩ	
Nailheading	Acceptable		
Negative Etchback	25µm [0.00098 in.] Max.		13µm [0.00051 in.] Max.
Nicks and Pinholes, Planes	Max. size is 1.5 mm [0.0591 in] with not > 6 per side, per 625 cm^2	Max. size is 1.0 mm [0.03937 in] with not > 4 per side, per 625 cm^2	
Plating Separation	Allowed at the knee, max. length 130µm [0.00512 in.]	Not Allowed	
Surface Mount Lands	Edge defects not > 30% of length/width of land, internal not> 20% of Length/width of land	Edge defects not > 20% of length/width of land, internal not 10% of length/width of land	
Voids, Laminate	Voids in Zone B not > 150µm [0.00591 in.]	Voids in Zone B not > 80µm [0.00315 in.]	
Voids, Final Finish Plating (Visual)	Five per hole in not more than 15% of the holes	Three per hole in not more the 5% of the holes	One per hole in not more then 5% of the holes