



FLEX & RIGID - FLEX MANUFACTURING PROCESS CAPABILITIES

Specification	Standard Production	Advanced or Proto-type
General		
Panel Sizes	12" x 18" & 18" x 24" Up to 457 mm x 610 mm	20" x 32" 508 mm x 813 mm
Number of Copper Layers	20	21+
Bookbinder Number of Layers	8	>8
Workmanship Specification	Per IPC 6013A Class II & III MIL-PRF-31032 & MIL-PRF-50884F	
Materials:		
Polyimide Film or LCP	Preferred DuPont or Panasonic	Others Available
Foil Weight: (inner layer)	½ oz-3 oz 17 µm-106 µm	>3 oz >106 µm
Foil Weight: (outer layer)	½ oz-3 oz 51 µm-106 µm	>3 oz >106 µm
Material Thickness:		
Base Material	2 mil-5 mil 12.7 µm-127 µm	< 2 mil
Cover Film	1/2 mil-5 mil 12.7 µm-127 µm	Call for Specifics
Adhesive	1/2 mil-5 mil 12.7 µm-127 µm	Call for Specifics
Copper RA	1/2 oz- 3 oz 12.7 µm-127 µm	Call for Specifics
PSA	1/2 mil-5 mil 12.7 µm-127 µm	Call for Specifics
Line Width and Space:		
1 oz. Min. line width / spacing 35 µm Min. line width / spacing	0.004"/0.004" 100/100 µm	
½ oz. Min. line width / spacing 17 µm Min. line width / spacing	0.003"/0.003" 75/75 µm	0.0025"/0.0025" 62/62 µm
Etch Tolerance (Base Copper)	½ oz. copper 17 µm copper 1 oz. copper 35 µm copper 2 oz. copper 71 µm copper	+/- .0005" (Design Specified) +/- 12 µm (Design Specified) +/- .001" (Design Specified) +/- 24 µm (Design Specified) +/- .002" (Design Specified) +/- 50 µm (Design Specified) Call For Specifics " "



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Specification	Standard Production	Advanced or Proto-type
Tolerances:		
Edge to Edge	0.005" 127 μm	<.005" 127 μm
Edge to Hole	0.005" 127 μm	
Edge to Feature	0.005" 127 μm	< .005" 127 μm
PTH diameter tolerance	+/- 0.003" 75 μm	+/- 0.002" (after OSP/NiAu/Tin/Silver) +/- 50 μm (after OSP/NiAu/Tin/Silver)
NPTH diameter tolerance	+/- 0.002" +/- 50 μm	+/- 0.001" + /- 24 μm
Hole location tolerance	+/- 0.003" +/- 75 μm	
Miscellaneous		
Stiffeners	FR4, Polyimide, Aluminum	Call for Specifics
Shielding	Silver Paste, Silver Film	Call for Specifics
Strain Relief	Eccobond (Any Type)	Call for Specifics