



FLEX & RIGID - FLEX MANUFACTURING PROCESS CAPABILITIES

Specification	Standard Production	Advanced or Proto-type
General		
Panel Sizes	12" x 18" 304 mm x 457 mm	20" x 32" 508 mm x 813 mm
Number of Copper Layers	16	17+
Bookbinder Number of Layers	8	107
Workmanship Specification	Per IPC 6013A Class II & III MIL-PRF-31032 & MIL-PRF-50884F	
Materials:		
Polyimide Film	DuPont Panasonic Shin-Etsu	
Foil Weight: (inner layer)	½ oz-3 oz 17 µm-106 µm	>3 oz >106 µm
Foil Weight: (outer layer)	½ oz-3 oz 17 µm-106 µm	>3 oz >106 µm
Material Thickness:		
Base Material	1/2 mil-5 mil 12.7 µm-127 µm	Call for Specifics
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 mil-5 mil 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	+/- .0005" (Design Specified) +/- 12 µm (Design Specified)
	1 oz. copper 35 µm copper	+/- .001" (Design Specified) +/- 24 µm (Design Specified)
	2 oz. copper 71 µm copper	+/- .002" (Design Specified) +/- 50 µm (Design Specified)



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Tolerances:		
Edge to Edge	0.003" 75 μm	0.002" 50 μm
Edge to Hole	0.005" 127 μm	
Edge to Feature	0.005" 127 μm	0.004" 100 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