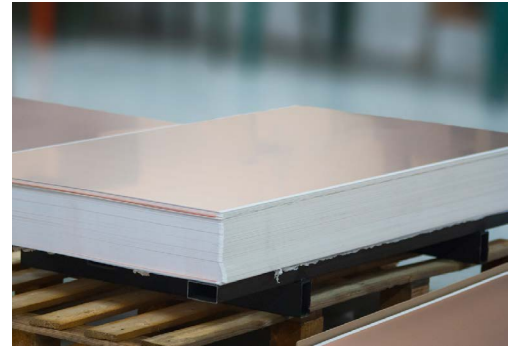


LOW LOSS MICROWAVE LAMINATE

CLP 240 is an innovative low loss copper clad microwave laminate. CLP 240 is manufactured by Tadbik using proprietary hybrid continuous lamination technology developed in house. This system based on blended Polyolefin resins provides an excellent value solution to designers and manufacturers of wireless panel antennas.

Typical production applications are subscriber and infrastructure antennas up to 5.8GHz.

Good PIM performance (at 2GHz band) and prototype mm-wave antenna designs up to 40GHz have been successfully demonstrated by customers.



Property	IPC-TM 650 / ASTM	Units	Value	Condition / Remarks
Dielectric Constant	IPC 2.5.5.5	---	2.40 ± 0.05	@10 GHz 23 °C
Dissipation Factor	IPC 2.5.5.5	---	0.0010	@10 GHz
Peel Strength	IPC 2.4.8	lb/inch	>4	Typically 10-14
Moisture Absorption	IPC 2.6.2.1	wt. %	<0.03	---
Volume Resistivity	IPC 2.5.17.1	MΩ - cm	1 x 10 ⁷	---
Surface Resistivity	IPC 2.5.17.1	MΩ - cm	1 x 10 ⁷	---
Dielectric Strength	IPC 2.5.6	KV/mm	19.7	---
Flexural Strength, min	IPC 2.4.4	GPa	4	---
Thermal Conductivity	ASTM C518	W/m ² K	0.15	Not mentioned in IPC
CTE x-y-z (40- to 85°C)	IPC 2.4.41	ppm/°C	60-80	---
Flammability	UL-94	---	V-2	Meets UL94- V2
Operation Tmp.	---	°C	(-45) – (+95)	---
Maximum process temp.	---	°C	+90	Drying ovens to be checked
Heat Deflection temp.	ASTM D 648	°C	+95	Compound specification
Melting temp.	Base resin spec	°C	+165	Not mentioned in IPC
Dimensional Stability	---	%	0.35 MD 0.30 TD	With 90°C max process temp.
RoHS/Lead Free	---	---	Compatible	---

ELECTRO DEPOSITED COPPER FOILS SPECIFICATIONS

Feature	Unit	Value	IPC	
			IPC-4562	IPC-TM-650
Nominal thickness	μm	35 ± 4		
Resistivity @ RT	Ohm · g /m ²	<0.162		
Area weight	g/m ²	283 ± 20	3.4.4	2.2.12
Shiny side roughness, Ra	μm	0.2-0.4	3.5.6	2.2.17
	μ.inch	8-16		
Matt side roughness, Rz	μm	7-9	3.4.5	2.2.17
	μ.inch	276-354		
Tensile strength @ RT	MPa	> 276	3.5.1	2.4.18
	K.lb/inch ²	> 40		
Tensile strength @ 180°C	MPa	> 138	3.5.1	2.4.18
	K.lb/inch ²	> 20		
Elongation @ RT	%	> 6	3.5.3	2.4.18
Elongation @ 180°C	%	> 3	3.5.3	2.4.18
Solderability	meets requirements of IPC-4562		3.6.3	2.4.12

Panel Thickness (excluding copper foil)

- Double Sided (DS) - **760 μ** / 0.030" with a tolerance of ± 50 μ

Panel Dimensions

- Standard dimensions: 600X1220 mm, 800X1220 mm and 800X1450mm with a tolerance of ± 2mm
- Effective copper cladding is 590 mm & 790 mm of the panel width with a tolerance of ± 2mm
- **Panel length may be changed upon requirement** to maximize yield