

# TLC Specialty Products

## low cost specialty RF laminate

TacCover TCM-0020/26-F offers more stable PIMD performance, lower dissipation factors and insertion loss properties. These advanced materials also has lower friction coefficient and moisture absorption which leads better long term reliability.

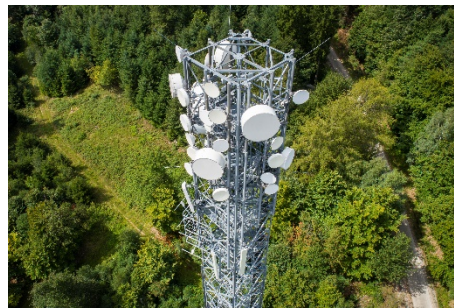
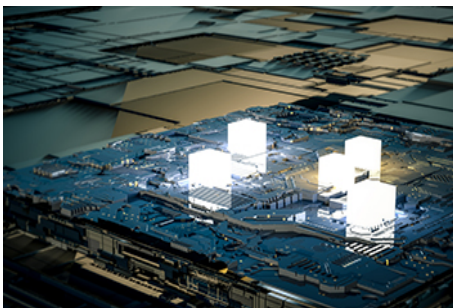
With its exceptionally stable electrical performance, chemical stability and long term reliability, these advanced material is the best choice for being used in the fabrication of phase shifter in antennas, interconnections and devices.

### Benefits

- Low cost
- Tightly Controlled DK
- Low DF
- Excellent dimensional stability
- High flexural strength
- UL 94-V-O rating
- DK is flat over frequency

### Applications

- NBs
- Power amplifiers
- PCS/PCN large format antennas
- Passive components



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TLC-338 & 35 Typical Values					
Property	Test Method	Unit	Value	Unit	Value
Dk @ 10 GHz	IPC-650 2.5.5.5		3.38, 3.50		3.38, 3.50
Df @ 10 GHz	IPC-650 2.5.5.5		0.0034, 0.0037		0.0034, 0.0037
Moisture Absorption	IPC-650 2.6.2.1	%	<0.02	%	<0.02
Dielectric Breakdown	IPC-650 2.5.6	Kv	>45	Kv	>45
Volume Resistivity	IPC-650 2.5.17.1	Mohms/cm	10 <sup>8</sup>	Mohms/cm	10 <sup>8</sup>
Surface Resistivity	IPC-650 2.5.17.1	Mohms	10 <sup>8</sup>	Mohms	10 <sup>8</sup>
Arc Resistance	IPC-650 2.5.1	seconds	>180	seconds	>180
Flexural Strength (MD)	IPC-650 2.4.4	lbs./inch	>24,000	N/mm <sup>2</sup>	>165
Flexural Strength (CD)	IPC-650 2.4.4	lbs./inch	19,000	N/mm <sup>2</sup>	131
Peel Strength (1oz. copper)	IPC-650 2.4.8	lbs./linear inch	12.0	N/mm	2.1
Thermal Conductivity	ASTM F 433	W/m/K	0.24	W/m/K	0.24
CTE (x-y axis)	ASTM D 3386/TMA	ppm/°C	9 - 12	ppm/°C	9 - 12
CTE (z axis)	ASTM D 3386/TMA	ppm/°C	70	ppm/°C	70
UL-94 Flammability Rating	UL-94		V-0		V-0

Remark : All reported values are typical and should not be used for specification purposes. In all instances, the user shall determine suitability in any given application.

How to Order			
Designation	Dk	Dielectric Thickness	Dielectric Thickness
		Inches	mm
TLC-338	3.38 +/-0.05	≥0.0080	≥0.20
TLC-35	3.50 +/-0.05	≥0.0100	≥0.25

Available Copper Cladding					Available Sheet Size	
Available Copper Cladding		Copper Thickness inches		Description	Inches	mm
Designation	Weight	Inches	µm			
CH	1/2 oz / ft <sup>2</sup>	~0.0007	~18	Electrodeposited	12 x 18	304 x 457
C1	1 oz / ft <sup>2</sup>	~0.0014	~35	Electrodeposited	16 x 18	406 x 457
C2	2 oz / ft <sup>2</sup>	~0.0028	~70	Electrodeposited	18 x 24	457 x 610
					16 x 36	406 x 914
					24 x 36	610 x 914
					18 x 48	457 x 1220

Heavy metal claddings (aluminum, brass & copper) may also be available upon request. Standard sheet size is 36" x 48" (914 mm x 1220 mm). Please contact our Customer Service Department for the availability of other thicknesses, panel sizes and claddings.

An example of our part number is: **TLC-35-0620-CH/CH - 18" x 24" (457 mm x 610 mm)**