

TLT

Excellent Mechanical & Thermal Properties
Low Dissipation Factor
Low & Stable Dielectric Constant
UL 94 V-0 Rating

TACONIC

An ISO 9001:2000 Registered Company
Petersburgh, NY: Tel: 800-833-1805 Fax: 518-658-3988
Europe: Tel: +353-44-9395600 Fax: +353-44-9344369 Asia: Tel: +82-31-704-1858 Fax: +82-31-704-1857
www.taconic-add.com

APPLICATIONS

LNAs, LNBs, and LNCs
PCS/PCN Large Format
Antennas
High Power Amplifiers
Passive Components

TLT

Taconic has over 40 years of experience coating fiberglass fabric with PTFE (polytetrafluoroethylene). This enables Taconic to manufacture copper clad PTFE/woven glass laminates with exceptionally well controlled electrical and mechanical properties.

These attributes effectively extend the usefulness of these laminates to X-Band and above.

The dielectric constant (DK) range is 2.45 to 2.65. The DK can be specified anywhere within this range with a tolerance of +/- 0.05. The dissipation factor is approximately 0.0006 when measured at 1 MHz.

Typical applications for TLT laminates include radar systems, phased array antennas, mobile communication systems, microwave test equipment, microwave transmission devices and RF components.

TLT laminates can be sheared, drilled, milled and plated using standard methods for PTFE/woven fiberglass materials. The laminates are dimensionally stable, and exhibit virtually no moisture absorption during fabrication processes.

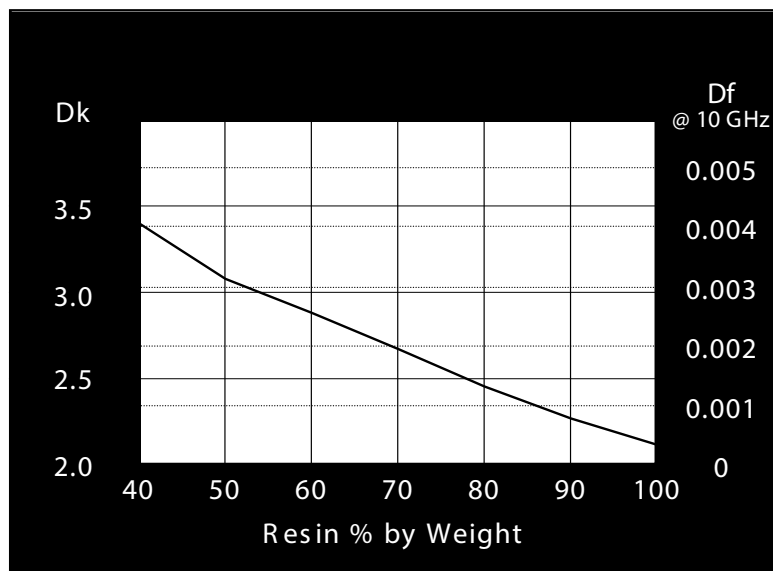
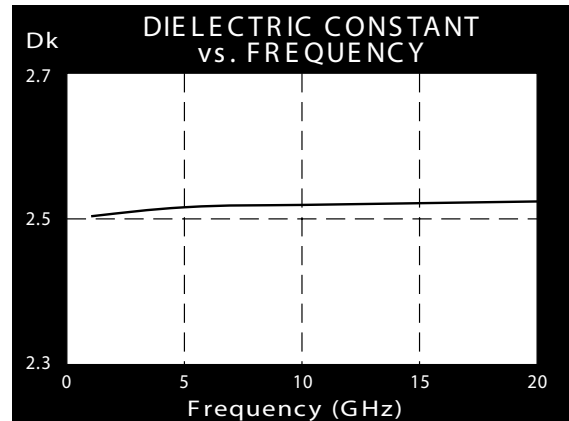
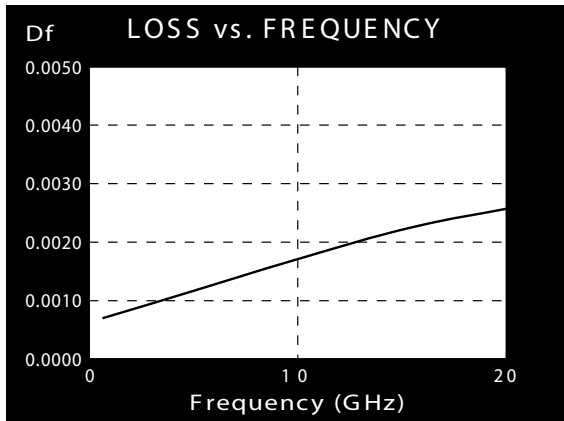
TLT laminates are generally ordered clad on both sides. Various panel sizes are available. Contact our customer service department for more information.

TLT laminates are tested in accordance with IPC-TM 650. A certificate of compliance containing lot-specific test data accompanies each shipment.

See "How To Order" on back page for a complete product listing.

TLT Typical Values

Property	Test Method	Unit	Value	Unit	Value
Dielectric Constant @ 1 MHz	IPC-TM-650 2.5.5.3		2.50		2.50
Dissipation Factor @ 1 MHz	IPC-TM-650 2.5.5.3		0.0006		0.0006
Moisture Absorption	IPC-TM-650 2.6.2.1	%	<0.02	%	<0.02
Dielectric Breakdown	IPC-TM-650 2.5.6	kV	>60	kV	>60
Volume Resistivity	IPC-TM-650 2.5.17.1	Mohm/cm	10 ⁷	Mohm/cm	10 ⁷
Surface Resistivity	IPC-TM-650 2.5.17.1	Mohm	10 ⁷	Mohm	10 ⁷
Arc Resistance	IPC-TM-650 2.5.1	Seconds	>180	Seconds	>180
Flexural Strength (MD)	IPC-TM-650 2.4.4	psi	>23,000	N/mm ²	>159
Flexural Strength (CD)	IPC-TM-650 2.4.4	psi	>19,000	N/mm ²	>131
Peel Strength (1 oz ED)	IPC-TM-650 2.4.8	lbs/linear inch	12.00	N/mm	2.1
Thermal Conductivity	ASTM F 433	W/m/K	0.19	W/m/K	0.19
CTE (x-y)	ASTM D 3386 (TMA)	ppm/°C	21-23	ppm/°C	21-23
CTE (z)	ASTM D 3386 (TMA)	ppm/°C	215	ppm/°C	215
Flammability Rating	UL 94		V-0		V-0



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	Dielectric Constant	Typical Thicknesses ¹		Available Sheet Sizes ²	
TLT-0	2.45 +/- 0.05	0.0014" - 0.1250"	0.04 mm - 3.18 mm	12" x 18"	304 mm x 457 mm
TLT-9	2.50 +/- 0.05			16" x 18"	406 mm x 457 mm
TLT-8	2.55 +/- 0.05			18" x 24"	457 mm x 610 mm
TLT-7	2.60 +/- 0.05			16" x 36"	406 mm x 914 mm
TLT-6	2.65 +/- 0.05			24" x 36"	610 mm x 914 mm

¹Other thicknesses may be available. Please call for information.

²Our standard sheet size is 36" x 48" (457 mm x 610 mm). Please contact our customer service department for availability of other sizes.

Available Copper Cladding						
Designation	Weight	Copper Thickness		R _{MS} Treated Side		Description
RH	1/2 oz / ft ²	~0.0007"	~18 µm	16 µin	0.4 µm	Rolled annealed
R1	1 oz / ft ²	~0.0014"	~35 µm	11 µin	0.3 µm	Rolled annealed
CLH	1/2 oz / ft ²	~0.0007"	~18 µm	13 µin	0.3 µm	Reverse treated / Electrodeposited
CL1	1 oz / ft ²	~0.0014"	~35 µm	13 µin	0.3 µm	Reverse treated / Electrodeposited
CVH (CH)	1/2 oz / ft ²	~0.0007"	~18 µm	27 µin	0.7 µm	Very low profile / Electrodeposited
CV1 (C1)	1 oz / ft ²	~0.0014"	~35 µm	25 µin	0.6 µm	Very low profile / Electrodeposited
C2	2 oz / ft ²	~0.0028"	~70 µm	77 µin	2.0 µm	Electrodeposited

Heavy metal claddings (aluminum, brass & copper) may also be available upon request. Please call for information.

An example of our part number is: **TLT-9-0310-CV1/CV1 - 18" x 24" (457 mm x 610 mm)**

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