

HyRelex

Low Loss, High Reliability, Thin, Flexible Interconnect Materials

Exceptionally Low Loss

Low DK

Excellent Peel Strength

Superior High Temperature Performance

Low Moisture Absorption

Excellent Dimensional Stability

Adhesiveless

UL 94 V-0

TACONIC

An ISO 9001:2000 Registered Company

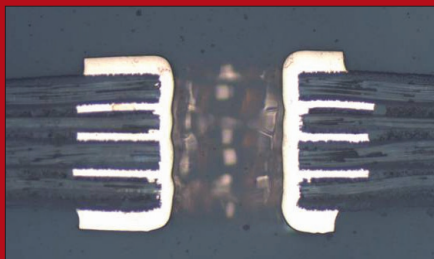
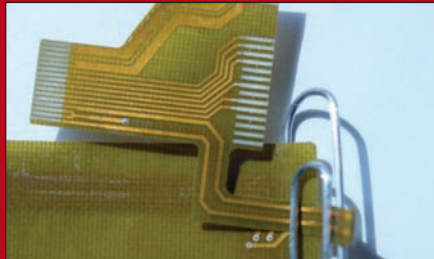
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APPLICATIONS

Double Sided, Multilayer &
Rigid Flex Circuits
Telecommunications
High Frequency
Avionics
Medical
Consumer Electronics
Military
Automotive



HyRelex

HyRelex is a family of low loss, high reliability, flexible laminates and bonding materials. It is constructed with the benefits of reinforced high temperature polymer chemistry to provide excellent thermal, mechanical, electrical and moisture resistant properties. HyRelex is the best value for the high performance demands of flexible applications.

The low dissipation factor, thermal stability and smooth surface profile minimize phase shift with frequency and temperature, and yields exceptional low loss circuit performance. HyRelex is ideally suited for high frequency, high temperature, and harsh environment applications.

HyRelex has excellent peel strengths for the high temperature assembly and power handling requirements. HyRelex is dimensionally stable due to the use of reinforcement in its design. HyRelex laminates are generally ordered clad on both sides with 17 and 35 micron (1/2 and 1 oz) rolled or high elongation electrodeposited copper.

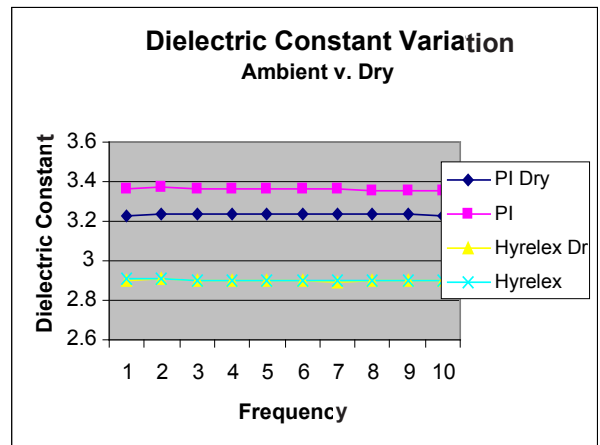
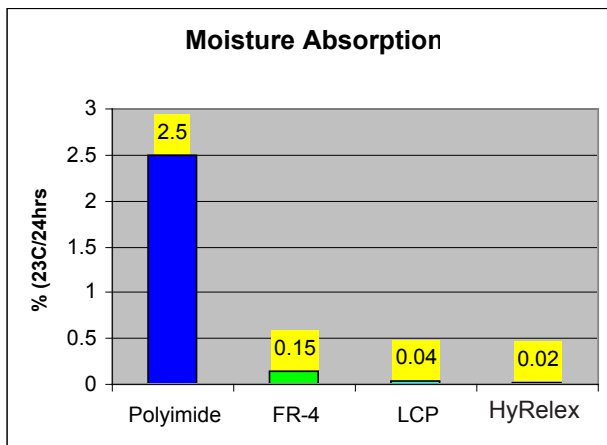
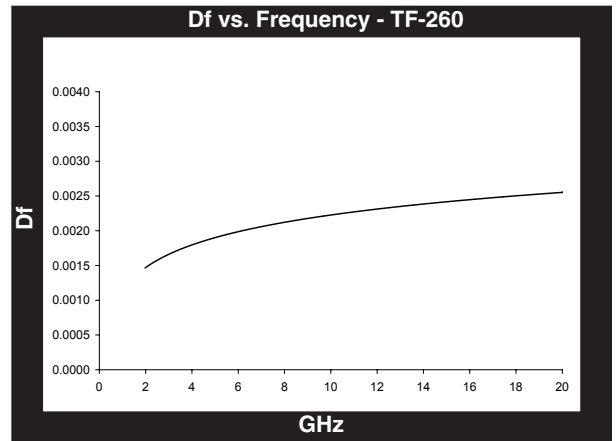
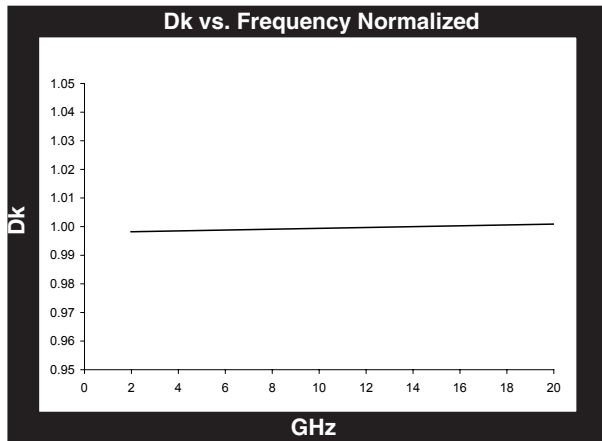
HyRelex laminates exhibit flammability of V-0, with a thermal index rating (RTI) >150°C. The materials are tested in accordance with IPC-TM 650. A certificate of conformance containing lot-specific data accompanies each shipment.

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

HyRelex Typical Values

Property	Test Method	Unit	Value		Unit	Value	
Product			TF-260	TF-290		TF-260	TF-290
Dielectric Constant @ 10 GHz	IPC-TM-650 2.5.5.5.1		2.60	2.90		2.60	2.90
Dissipation Factor @ 10 GHz	IPC-TM-650 2.5.5.5.1		0.0020	0.0028		0.0020	0.0028
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	>35,000	N/mm ²	>159	>241
Flexural Strength (CD)	IPC-TM-650 2.4.4	psi	>20,000	>30,000	N/mm ²	>138	>207
Peel Strength (1 oz VLP)	IPC-TM-650 2.4.8 Sec 5.2.2 (Thermal Stress)	lbs/linear inch	7		N/mm	1.2	
Thermal Conductivity	ASTM F 433	W/m/K	0.20		W/m/K	0.20	
CTE (x-y)	ASTM D 3386 (TMA)	ppm/°C	9-12		ppm/°C	9-12	
CTE (z)	ASTM D 3386 (TMA)	%	3	2	%	3	2
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	
TF-260	2.60	0.0017"	0.04 mm
		0.0030"	0.08 mm

TF-290	2.90	0.0023"	0.06 mm
		0.0035"	0.09 mm

Available Panel Sizes ¹	
12" x 18"	304 mm x 457 mm
16" x 18"	406 mm x 457 mm
18" x 24"	457 mm x 610 mm
16" x 36"	406 mm x 914 mm
24" x 36"	610 mm x 914 mm

¹Our standard sheet size is 36" x 48" (914 mm x 1220 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
CE1	1 oz / ft ²	~0.0014	~35 µm	25 µin	0.6 µm	High elongation / Electrodeposited
CEH	1/2 oz / ft ²	~0.0007"	~18 µm	27 µin	0.7 µm	High elongation / Electrodeposited
CEQ	1/4 oz / ft ²	~0.0004"	~9 µm	19 µin	0.5 µin	High elongation / Electrodeposited

Ohmega-Ply® and Gould resistive foils also available upon request

Ohmega-Ply® is a registered trademark of Ohmega Technologies

An example of our part number is: **TF-260-0020-CE1/CE1 - 18" x 24" (457 mm x 610 mm)**

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