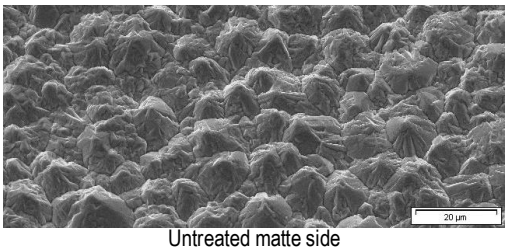
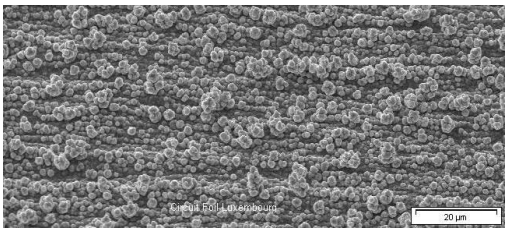
TWS-B-YE

Technical Characteristics



Untreated matte side

Treated drum side



TWS-B style of foil is an high performance single-sided treated electro-deposited copper foil, where bonding treatment is applied to the "shiny" side (so-called "Reverse Treated Foil"). This product is designed to provide high bond strength on a wide range of high T_g substrates and new engineering plastics. Base foil is characterized by enhanced high temperature elongation properties [Grade 3].
The product is designed for the manufacture of high performance laminates with extended thermal stability and electrical properties for multilayer PCB's, where inner layers will be submitted to "oxide-bonding" chemistries.

Typical substrates include polyimide and bismaleimide triazine (BT) epoxy blends, cyanate esters, hydrocarbon-ceramics and fluorocarbon materials. For fluorocarbon containing resins, please also consult **HFZ-B** datasheet.

Typical average properties*

TWS-B-YE							
MEASURED PARAMETERS		**UNITS**	**PRODUCT GAUGE**			**IPC**	
Nominal Thickness		**µm oz.**	**18 1/2**	**35 1**	**70 2**	**Specification IPC-4562A**	**Test Method IPC-TM-650**
Area Weight (≤ ± 5 %)		oz/ft²	0.52	0.94	1.90	(a)1.2.5, table 1-1	2.2.12
		g/m²	159	288	581	(b)3.4.4	
		g/254 in²	26.1	47.2	95.2	(c)4.6.3	
Untreated Matte Side Roughness (Rz)	ISO	µm (µ.inch)	≤ 6.0 (≤ 236)	≤ 9.0 (≤ 354)	≤ 10 (≤ 394)	-	2.2.17
	JIS		≤ 5.0 (≤ 197)	≤ 7.5 (≤ 294)	≤ 8.4 (≤ 331)		
Treated Shiny Side Roughness (Rz)	ISO		4 - 6 (157 - 236)			3.4.5	
	JIS		3 - 5 (118 - 197)			-	
Tensile Strength Transverse at RT		MPa (k.Lb/in²)	≥ 276 (≥ 40)			3.5.1	2.4.18
Tensile Strength Transverse at 180 °C			≥ 138 (≥ 20)				
Elongation Transverse at RT		%	≥ 6		≥ 9	3.5.3	
Elongation Transverse at 180 °C			≥ 3				
Peel Strength Treated Shiny Side (RT) FR4[1]		N/mm (Lb/in)	≥ 1.1 (≥ 6.2)	≥ 1.4 (≥ 8.0)	≥ 1.7 (≥ 9.7)	3.5.4	2.4.8
High Temp. Tarnish Resistance		-	120 min @ 180 °C in air: pass			-	
Solderability		-	Complies with IPC specification			3.6.3	2.4.12

[1] Laminate construction with thickness ≥ 0.5 mm

- Higher laminate bond strength on "difficult" high T_g substrate from a combination of an increased mechanical bonding surface area and, where applicable, chemical adhesion.
- Thermally stable microstructure - stable mechanical properties unaffected by thermal excursion from lamination or post laminate baking cycles - which could degrade laminate dimensional stability, warp & twist, and drilling characteristics (nail heading).
- Low Profile bonding surface roughness (Rz Ò0.2 µm / 400 µ.inch) ensures fast clean etching, with minimal loss of bond strength compared to conventional products.
- Simplified "oxide" processing. The already roughened untreated matte surface eliminates the need for chemical micro etching prior to oxide processing and the associated etch waste disposal costs.

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