



BF-TZA

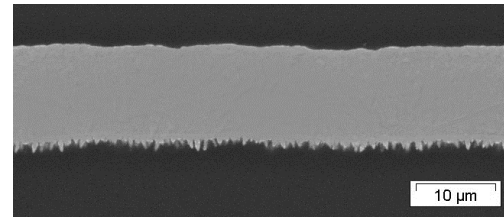
Technical Characteristics

BF-TZA style foil is an ultra-flat single side treated electro-deposited copper foil, characterized by high ductility at room temperature and lower electrical resistivity compared to regular ED foils.

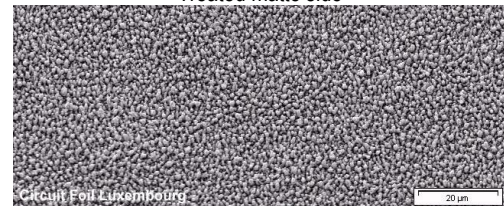
The zinc free and arsenic free copper treatment is designed to provide excellent bond strength on low and very low loss resin systems.

The ultra-flat profile ensures a minimalist skin depth penetration thus reducing signal losses for high speed digital applications.

Typical substrates include low loss resins (Df < 0.007 @10 GHz).



Cross section
12 µm BF-TZA
Treated matte side



Typical average properties*

BF-TZA										
MEASURED PARAMETERS			UNITS	PRODUCT GAUGE					IPC	
Nominal Thickness			µm oz.	9 1/4	12 3/8	18 1/2	35 1	70 2	Specification IPC-4562A	Test Method IPC-TM-650
Area Weight			oz/ft ²	0.26	0.37	0.50	0.93	1.88	(a)1.2.5, table 1-1	
			g/m ²	79	112	152	285	574	(b)3.4.4	2.2.12
			g/254 in ²	12.9	18.4	24.9	46.7	94.1	(c)4.6.3	
Untreated Side Line Roughness	Ra	ISO 4287	µm (µ.inch)	≤ 0.35 (≤ 14)					3.5.6	2.2.17
Untreated Side Surface Roughness	Sa	ISO 25178		~ 0.22 (~ 8.7)					-	2.2.22 Draft ^[2]
	Sq			~ 0.27 (~ 10.6)						
Treated Side Line Roughness	Ra	ISO 4287		0.3 – 0.55 (12 - 22)				0.21 - 0.33 (8 - 13)	3.4.5	2.2.17
	Rz	ISO 4287		≤ 3.1 (≤ 122)				≤ 2 (≤ 79)		
	Rz	JIS B 601		≤ 2.5 (≤ 98)				≤ 1.6 (≤ 63)	-	-
Treated Side Surface Roughness	Rt	ISO 4287		≤ 3.7 (≤ 146)				≤ 2.5 (≤ 98)	-	2.2.17
	Sa	ISO 25178		~ 0.42 (~ 16.5)	-	~ 0.33 (~ 13.0)	~ 0.32 (~ 12.6)	~ 0.30 (~ 11.8)	-	2.2.22 Draft ^[2]
	Sq			~ 0.53 (~ 20.9)	-	~ 0.42 (~ 16.5)	~ 0.40 (~ 15.7)	~ 0.38 (~ 15.0)		
Sz	~ 4.7 (~ 185)			-	~ 4.4 (~ 173)	~ 4.0 (~ 157)	~ 3.8 (~ 150)			
Tensile Strength Transverse at RT			MPa (k.Lb/in ²)	≥ 207 (≥ 30)			≥ 276 (≥ 40)		3.5.1	2.4.18
Tensile Strength Transverse at 180 °C				≥ 103 (≥ 15)			≥ 138 (≥ 20)			
Elongation Transverse at RT			%	4 - 10	5 - 20	7 - 25	10 - 30	15 - 40	3.5.3	
Elongation Transverse at 180 °C				5 - 25	9 - 25	10 - 35	10 - 40	15 - 50		
Peel Strength (RT) ^[1] Very Low Loss (PPE Based Resin)			N/mm (Lb/in)	≥ 0.40 (≥ 2.3)	≥ 0.45 (≥ 2.6)	≥ 0.5 (≥ 2.9)	≥ 0.6 (≥ 3.4)	≥ 0.7 (≥ 4.0)	3.5.4	2.4.8
High Temp. Tarnish Resistance			-	60 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

^[2] Final draft of TM 2.2.22 as of Sept. 29th, 2015

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* All of this Technical Information has been determined with due care and thoroughness. However, because the conditions of use and process and application technologies employed can substantially vary, the provided data and figures can only serve as non-binding guidelines. They do not constitute a guarantee that the purchased item will possess certain attributes. For this reason, no liability whatsoever can be assumed for them. The buyer is obliged to check the suitability of all supplied products.