

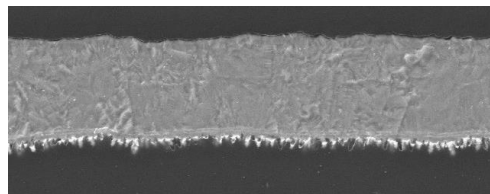
BF-HFI-LP2

Technical Characteristics

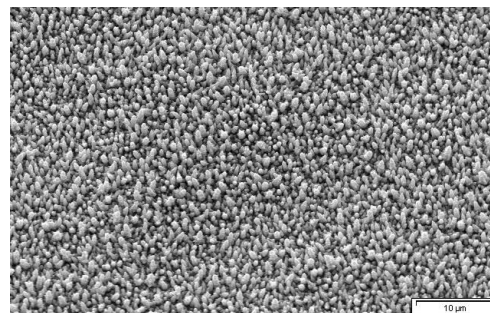
BF style of foil is an ultra-flat single side treated electro-deposited copper foil, characterized by high ductility at room temperature and lower electrical resistivity compared to regular ED foils.

The zinc free copper HFI-LP2 treatment is designed to provide excellent bond strength on low and very low loss resins and limits negative effects on Passive Intermodulation. The ultra-flat profile ensures a minimalist skin depth penetration thus reducing signal losses for high speed digital applications.

Typical substrates include PPE type resins and other low loss materials with Df < 0.007 @ 10 GHz.



Cross section
12 µm BF-HFI-LP2
Treated matte side



Typical product range*

BF-HFI-LP2							
MEASURED PARAMETERS		UNITS	PRODUCT GAUGE			IPC	
Nominal Thickness		µm oz.	12 3/8	18 1/2	35 1	Specification IPC-4562A	Test Method IPC-TM-650
Area Weight		oz/ft ²	0.37	0.50	0.93	(a)1.2.5, table 1-1	
		g/m ²	112	152	285	(b)3.4.4	2.2.12
		g/254 in ²	18.4	24.9	46.7	(c)4.6.3	
Untreated Side Line Roughness	Ra	ISO 4287	≤ 0.35 (≤ 14)			3.5.6	2.2.17
Untreated Side Surface Roughness	Sa	ISO 25178	~ 0.25 (~ 9.8)			-	2.2.22 Draft ^[2]
	Sq		~ 0.33 (~ 13)				
Treated Side Line Roughness	Rz	ISO 4287	≤ 3.1 (≤ 122)			3.4.5	2.2.17
	Rz	JIS B 601	≤ 2.5 (≤ 98)			-	-
	Rt	ISO 4287	≤ 3.7 (≤ 146)			-	2.2.17
Treated Side Surface Roughness	Sa	ISO 25178	-	~ 0.33 (~ 13.0)	~ 0.32 (~ 12.6)	-	2.2.22 Draft ^[2]
	Sq		-	~ 0.42 (~ 16.5)	~ 0.40 (~ 15.7)		
	Sz		-	~ 4.4 (~ 173)	~ 4.0 (~ 157)		
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		%	5 - 20	7 - 25	10 - 30	3.5.3	
Elongation Transverse at 180 °C			9 - 25	10 - 35	10 - 40		
Peel Strength (RT) ^[1] Very Low Loss (PPE Based Resin)		N/mm (Lb/in)	≥ 0.45 (≥ 2.6)	≥ 0.5 (≥ 2.9)	≥ 0.6 (≥ 3.4)	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

^[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.