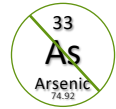


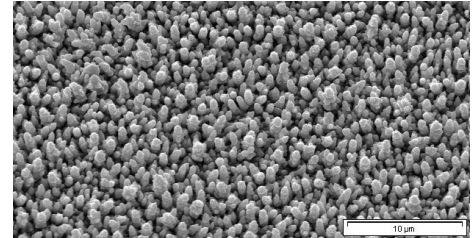
**ULTRA FLAT PROFILE COPPER FOIL WITH HIGH PEEL ON FLUOROPOLYMER SUBSTRATES.**  
**ARSENIC FREE ALTERNATIVE TO BF-HFZ.**

IPC  
Grade 10 & 3



**TYPICAL SUBSTRATES**

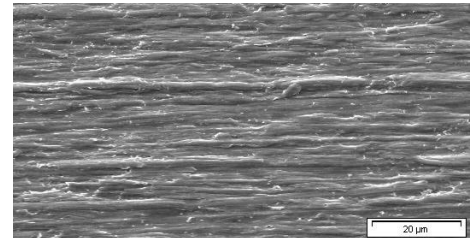
Pure or modified fluoropolymer (PTFE) resin systems.



Treated Electrolyte Side

**TYPICAL PROCESSES**

Radio frequency and microwave Printed Circuit Board. The pure copper treatment supports reducing the passive intermodulation (PIM).



Untreated Drum Side

**TYPICAL APPLICATIONS**

Base stations infrastructures and automotive radars.

**TYPICAL AVERAGE PROPERTIES\***

BF-HFA								
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			g/m <sup>2</sup>	112	152	285	3.4.4	2.2.12
Untreated Side Contact Roughness (Ra)		ISO 4287	µm	≤ 0.35			3.5.6	2.2.17
Untreated Side Contactless Roughness	Sa	ISO 25178		~ 0.22			-	2.2.22 [2]
Treated Side Contact Roughness	Rz	JIS B 601		≤ 2.5			-	2.2.17
	Rz	ISO 4287		≤ 3.1			3.4.5	
Treated Side Contactless Roughness	Sa	ISO 25178		~ 0.38	~ 0.35	~ 0.31	-	2.2.22 [2]
	Sz			~ 4.4	~ 4.1	~ 3.7		
	Sdr			%	~ 11.5	~ 11		
Tensile Strength Transverse (RT)			MPa (k.Lb/in <sup>2</sup> )	≥ 276 (≥ 40)			3.5.1	2.4.18
Elongation Transverse (RT)			%	5 - 15	7 - 25	10 - 35	3.5.3	
Peel Strength modified PTFE <sup>[1]</sup> (RT)			N/mm (Lb/in)	≥ 1.2 (≥ 6.7)			3.5.4	2.4.8

[1] Laminate construction with thickness ≥ 0.5 mm

[2] IPC TM 2.2.22 as of May 2020

**ALTERNATIVE**

For application at higher frequencies please consult BF-ANP, BF-NN, BFL-NN and BFL-NF datasheets.

\* 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.