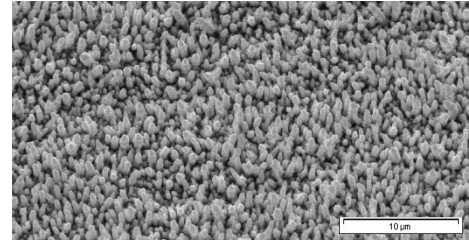


ULTRA FLAT COPPER FOIL FOR REDUCED SIGNAL LOSSES.



TYPICAL SUBSTRATES

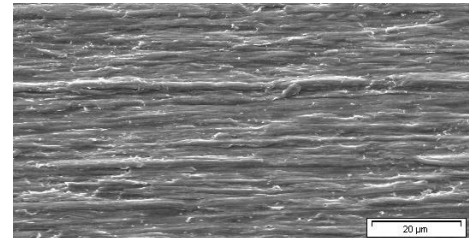
Very low loss substrates including Polyphenylene Ether/Oxide (PPE / PPO) based resin systems.



Treated Electrolyte Side

TYPICAL PROCESSES

High speed digital Printed Circuit Board. The ultra flat profile surface structure helps mitigating the impact of the skin effect.



Untreated Drum Side

TYPICAL APPLICATIONS

Networking and communication infrastructures including routers, switches and servers.

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			g/m ²	79	112	152	285	574	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				≤ 2.0	-	2.2.17
	Rz	ISO 4287		≤ 3.1				≤ 2.5	3.4.5	
Treated Side Contactless Roughness	Sa	ISO 25178		~ 0.42	~ 0.38	~ 0.35	~ 0.31	~ 0.26	-	2.2.22 [2]
	Sz			~ 4.7	~ 4.4	~ 4.1	~ 3.7	~ 3.3		
	Sdr		~ 12	~ 11.5	~ 11	~ 10.5	~ 10			
Tensile Strength Transverse (RT)			MPa (k.Lb/in ²)	≥ 276 (≥ 40)					3.5.1	2.4.18
Elongation Transverse (RT)			%	4 - 14	5 - 15	7 - 25	10 - 35	15 - 40	3.5.3	
Peel Strength Very Low Loss (PPE Based Resin) ^[1] (RT)			N/mm (Lb/in)	≥ 0.6 ^[2] (≥ 3.4)	≥ 0.45 (≥ 2.6)	≥ 0.5 (≥ 2.9)	≥ 0.6 (≥ 3.4)	≥ 0.7 (≥ 4.0)	3.5.4	2.4.8

[1] Laminate construction with thickness ≥ 0.5 mm
[2] After build-up to 35 µm

[2] IPC TM 2.2.22 as of May 2020

ALTERNATIVE For reduced conductor losses 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.