



BF-HFI-LP3

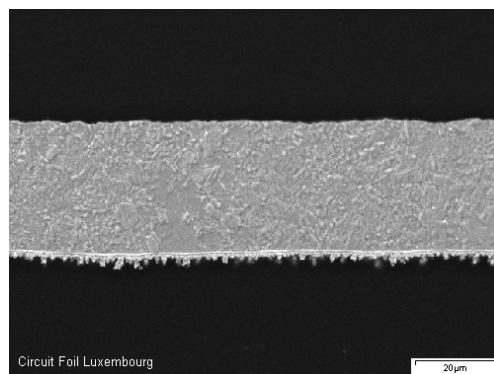
Technical Characteristics

BF style of foil is an ultra flat single side treated electro-deposited copper foil, characterized by high ductility at room temperature and a fine grain size with thermally stable microstructure.

Combined with our inorganic YE surface protection, the foil shows superior resistance to oxidation in warm and humid environments.

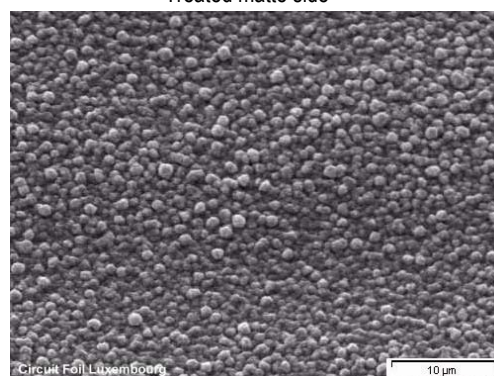
The zinc-free copper HFI treatment is designed to provide good bond strength on substrates and limits negative effects on Passive Intermodulation.

Typical substrates include PTFE for HF low loss application up to 40 GHz.



Cross section

Treated matte side



Typical product range

BF-HFI/TO-LP3							
Table 1							
MEASURED PARAMETERS	UNITS	PRODUCT GAUGE				IPC	
Nominal Thickness	µm oz.	9 1/4	12 3/8	18 1/2	35 1	Specification IPC-4562	Test Method IPC-TM-650
Area Weight (± 5 %)	oz/ft ²	0.26	0.35	0.50	0.95	(a)1.2.5, table 1-1	2.2.12
	g/m ²	79	108	152	289	(b)3.4.4	
	g/254 in ²	12.9	17.7	24.9	47.4	(c)4.6.3	
Untreated Side Roughness (Ra)	µm µ.inch	0.20 - 0.40 8 - 16				3.5.6	2.2.17
Treated Side Roughness (Rz)	µm µ.inch	2.5 - 4.0 98 - 157				3.4.5	2.2.17
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	MPa k.Lb/in ²	> 103 > 15			> 138 > 20	3.5.1	2.4.18
Elongation Transverse at RT	%	5 - 30			10 - 30	3.5.3	2.4.18
Elongation Transverse at 180 °C	%	5 - 30				3.5.3	2.4.18
Fatigue Ductility ⁽¹⁾	%	> 20	> 25			3.5.2	2.4.2.1

⁽¹⁾ after 10 min at 200 °C

BF-HFI-LP3

Table 2

MEASURED PARAMETERS	UNITS	PRODUCT GAUGE				IPC	
		9 1/4	12 3/8	18 1/2	35 1	Specification IPC-4562	Test Method IPC-TM-650
Nominal Thickness	μm oz.	9 1/4	12 3/8	18 1/2	35 1	Specification IPC-4562	Test Method IPC-TM-650
Area Weight ($\pm 5\%$)	oz/ft ²	0.26	0.35	0.50	0.95	(a)1.2.5, table 1-1	2.2.12
	g/m ²	79	108	152	289	(b)3.4.4	
	g/254 in ²	12.9	17.7	24.9	47.4	(c)4.6.3	
Peel Strength (RT) FR4 ^[1]	N/mm Lb/in	> 0.8 ^[2] > 4.6 ^[2]	> 1.0 > 5.7	> 1.2 > 6.8		3.5.4	2.4.8
Peel Strength (RT) on some proprietary FPC materials ^[1] :							
Upilex VT ^[4]	N/mm	> 1.2 ^[2]	> 1.8 ^[3]			3.5.4	2.4.8
	Lb/in	> 6.8 ^[2]	> 10.3 ^[3]				
Apical Pixeo ^[5] FC-142	N/mm	> 0.7	> 1.4 ^[3]	> 1.9 ^[3]	> 2.4 ^[3]	3.5.4	2.4.8
	Lb/in	> 4.0	> 8.0 ^[3]	> 10.8 ^[3]	> 13.7 ^[3]		
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] after galvanic reinforcement up to 35 μm

^[3] cohesive fracture

^[4] Upilex is a registered Trademark of UBE Industries

^[5] Apical Pixeo is a registered Trademark of KANEKA Corporation

Advanced Product Features

- Ultra flat profile on both sides.
- Ductility better than Type E, Grade 10 {IPC-4562 / 1.2.4.1}.
- Very high flex fatigue with similar dynamic properties in machine and cross machine direction.
- Fine pitch LP3 type profile (Rz: 2.5 μm – 4.0 μm).

Notes

- Products can be supplied in both roll and sheeted formats.
- Roll product is available in widths of 150 mm (~ 5.9") to 1296 mm (~ 51").
- Product is supplied on sturdy cardboard cores with an ID of ~ 80 mm (3 1/8"). Alternative core sizes and materials are available on request.
- Please visit our website (www.circuitfoil.com) for regular updates.

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.

Circuit Foil Luxembourg

POB 9
L – 9501 Wiltz
G.D. of Luxembourg

Phone: +(352) 95 75 51 1
Fax: +(352) 95 75 51 249
E-mail: office@circuitfoil.com
Internet: www.circuitfoil.com

Circuit Foil America

625, rue du Luxembourg
Granby, J2J 2S9
Canada

Phone: +(1) 450 770 8558
Fax: +(1) 450 405 4622
E-mail: cfa@circuitfoil.com

Circuit Foil Trading Inc. (USA)

115, East Glenside Ave./Suite 12
Glenside, PA 19038
USA

Phone: +(1) 215 887 7255
Fax: +(1) 215 887 6911
E-mail: cftinc@circuitfoil.com

Circuit Foil Asia Pacific Ltd. (HK)

Hong Kong Head Office
Rm. 706, Well Fung Industr. Centre
68 Ta Chuen Ping Street, Kwai Chung
N.T. Hong Kong

Phone : +(852) 24 23 97 56
Fax : +(852) 24 23 70 92
E-mail : cfpap@circuitfoil.com