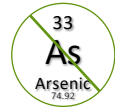


**ULTRATHIN AND SMOOTH CARRIER SUPPORTED COPPER FOIL DESIGNED FOR MSAP PROCESS (L/S OF ~15/15 μM).**



**TYPICAL SUBSTRATES**

Bismaleimide-Triazine (BT) and halogen free high Tg epoxy resin systems.

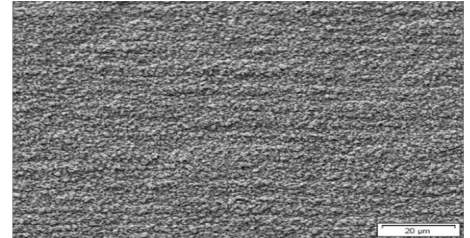
**TYPICAL PROCESSES**

MSAP process (using copper build-up followed by differential “flash etching” and CO2 laser direct ablation for via holes) used in IC Substrates and HDI/SLP ("Substrate Like PCB"). Also convenient for subtractive process.

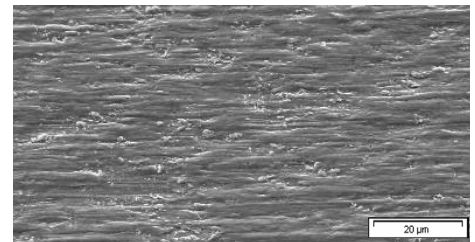
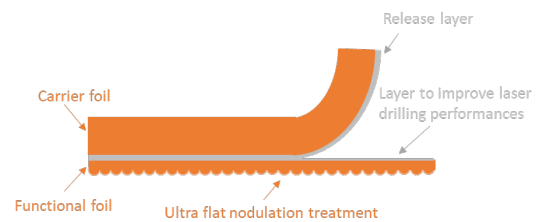
**TYPICAL APPLICATIONS**

Mobile communication devices (like smartphones and tablets) and laptops.

**TYPICAL AVERAGE PROPERTIES\***



Functional Foil Treated Side



Functional Foil Untreated Side

DOUBLETHIN™ ANP						
MEASURED PARAMETERS		UNITS	PRODUCT GAUGE			
Nominal Thickness		μm	1.5	2	3	5
Functional Foil Area Weight		g/m²	18 ± 2	20 ± 3	29 ± 3	45 ± 4
Carrier Foil Thickness		μm	12 or 18		18 or 35	
		oz.	3/8 or 1/2		1/2 or 1	
Functional Foil Treated Side Roughness (Rz)	JIS	μm	≤ 1.2			
	ISO		≤ 1.5			
Preferred Lamination Temperature		°C (°F)	≤ 240 °C (464 °F)			
Carrier Release Bond (after 2h @ 220 °C)		-	Easy manual peeling			
Peel Strength of Functional Foil Treated Side on halogen free High Tg FR-4 <sup>[1]</sup>		N/mm (Lb/in)	≥ 0.7			
Peel Strength of Functional Foil Treated Side on BT resin <sup>[1]</sup>			≥ 4.0			

<sup>[1]</sup> after galvanic reinforcement up to 35 μm

**ALTERNATIVE**

For a L/S of ~10/10 μm please consult DOUBLETHIN NN and NF datasheet. For coreless process please consult DOUBLETHIN-CORELESS datasheet.

\* 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.