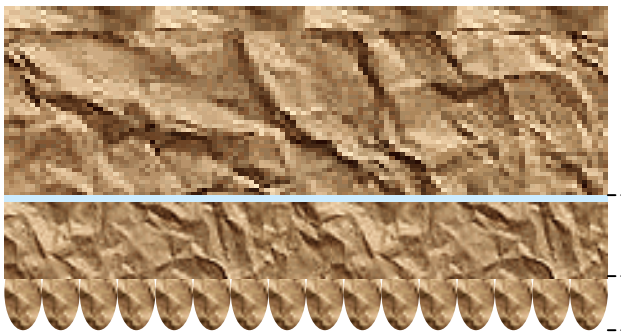
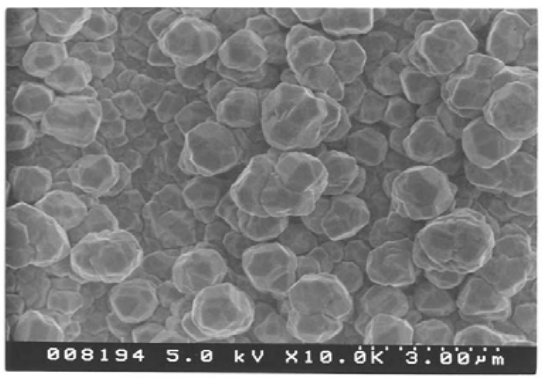
MITSUI KINZOKU

Product Line

For L/S 35/35

MicroThin －S (MTSD-H)

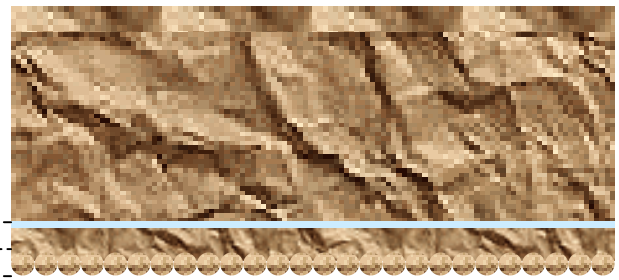


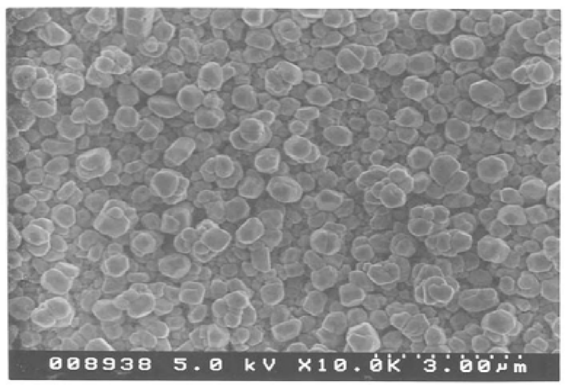


Even lower treatment profile

For L/S 30/30 or ＞

MicroThin －Ex





Special minute nodule treatment.

Cross section

Matt side photos with the same magnification

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Physical Properties

MicroThin Series

MITSUI KINZOKU

	Roughness	Thickness of Copper bulk			Thickness Uniformity	Peeling Strength: R/S	Pin Holes:P/H
	Laminating side Rz (um)	um			um	FR5 (kgf/cm)※1	The No.of PH/m² ※2
MT-EX	2.0um	3	2	1.5	± 0.2	1	0
Microthin-S	3.0um	5	3		± 0.2	1	

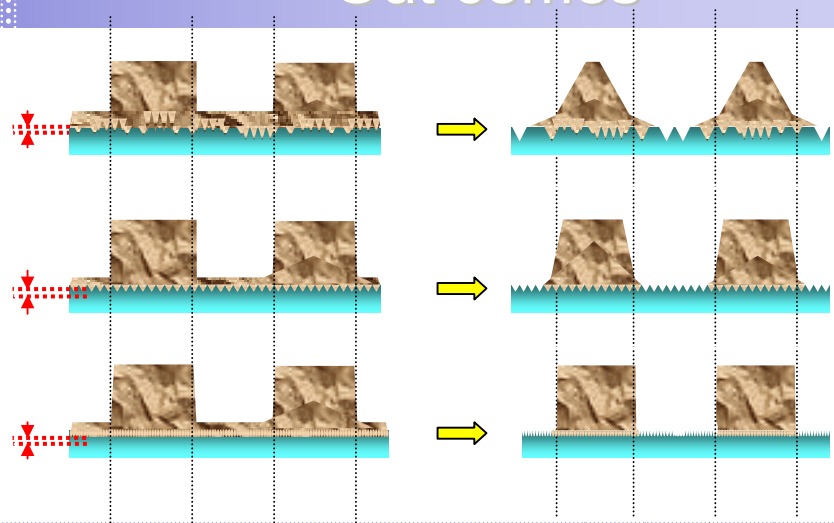
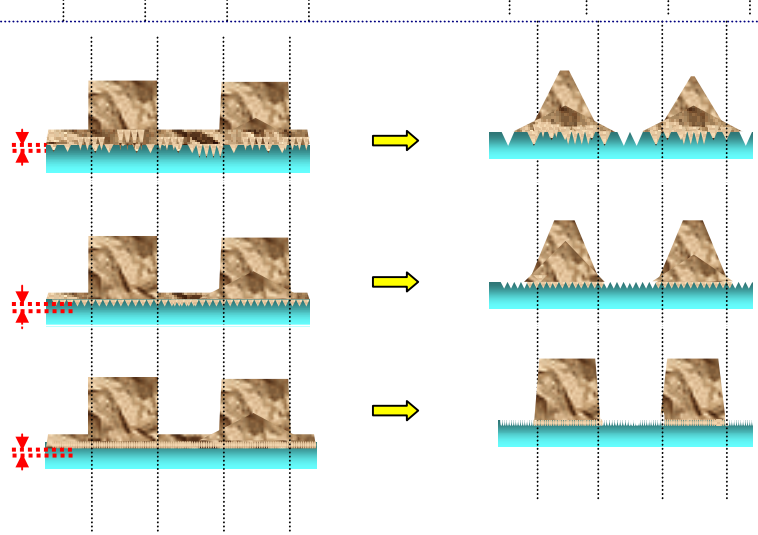
	Releasing Strength			Durability for higher lamination temperature	Max. Width
	Room Temp (gf/cm)	After 185c/1hr (gf/cm)	After 230c/1hr (gf/cm)	Type	Supply width (mm)
MT-EX	10～20			D-H ※3	1300 ※4
Microthin-S					

- ※1 Plated to 35um .
- ※2 Diameter of Pin Hole ≧30um.(Excluding 1.5um copper bulk type)
- ※3 D-H=MTSD-H, around 20gf/cm as a stable R/S up to 230C/1hr hot press lamination.
- ※4 The width we we can assure the quality is up to 1260mm.

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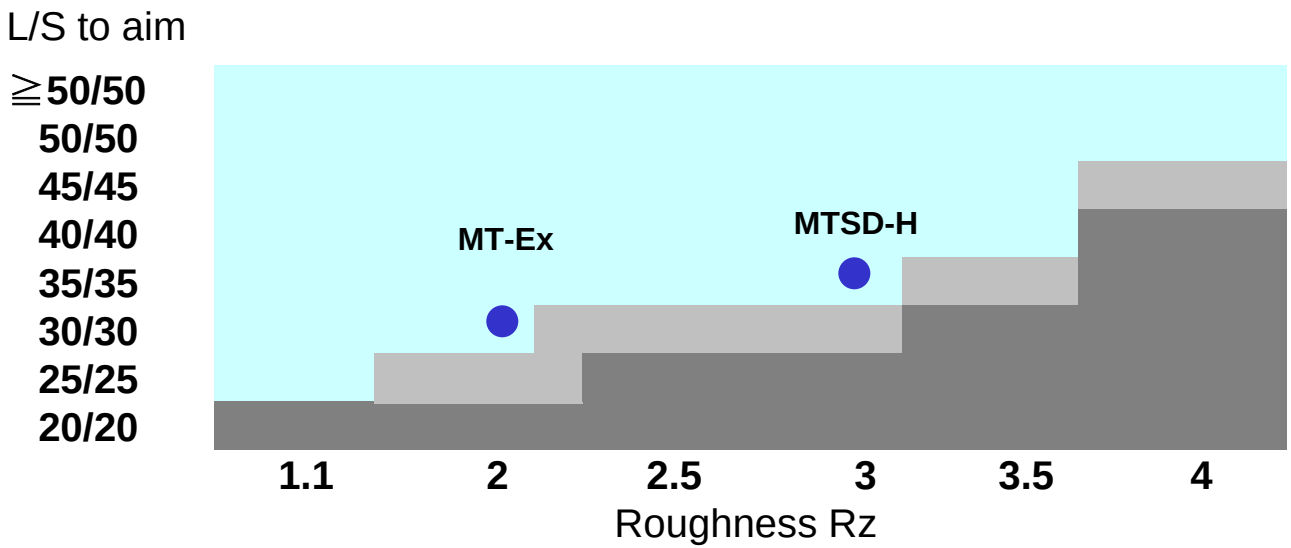
Ultra Fine Line Formation

Image

Line and Gap	Options	Out comes
35/35	Half Etching	
	MTSD-H	
	MT-Ex	
30/30	Half Etching	
	MTSD-H	
	MT-Ex	

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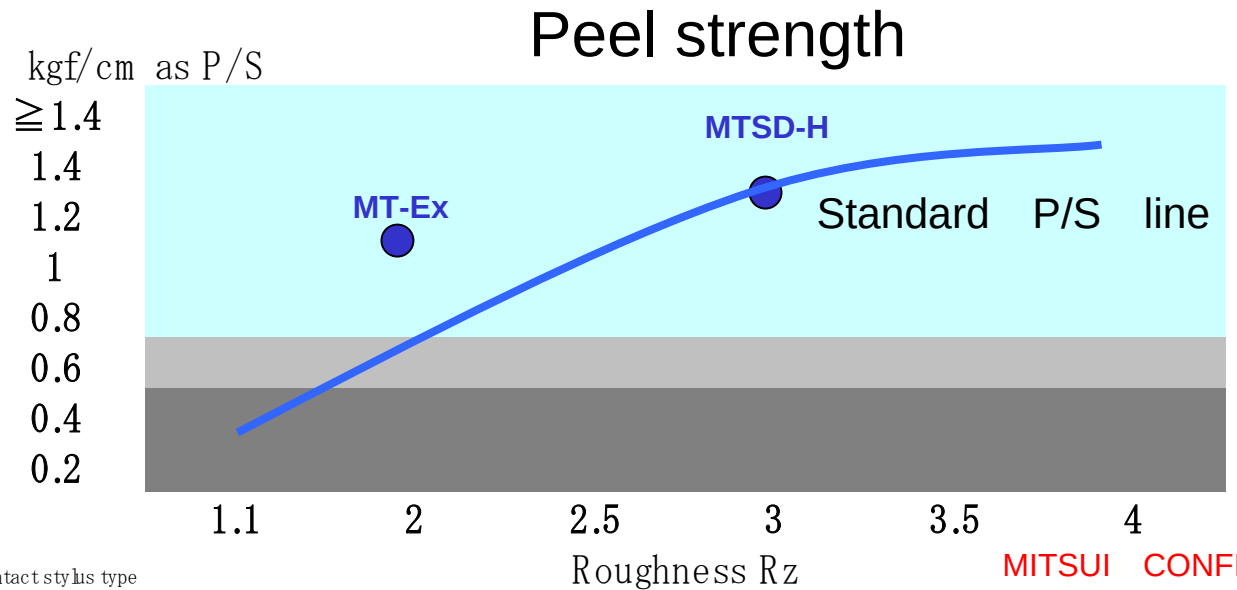
Importance of the Roughness Design



OK

May be OK

Difficult



Sufficient

Weak

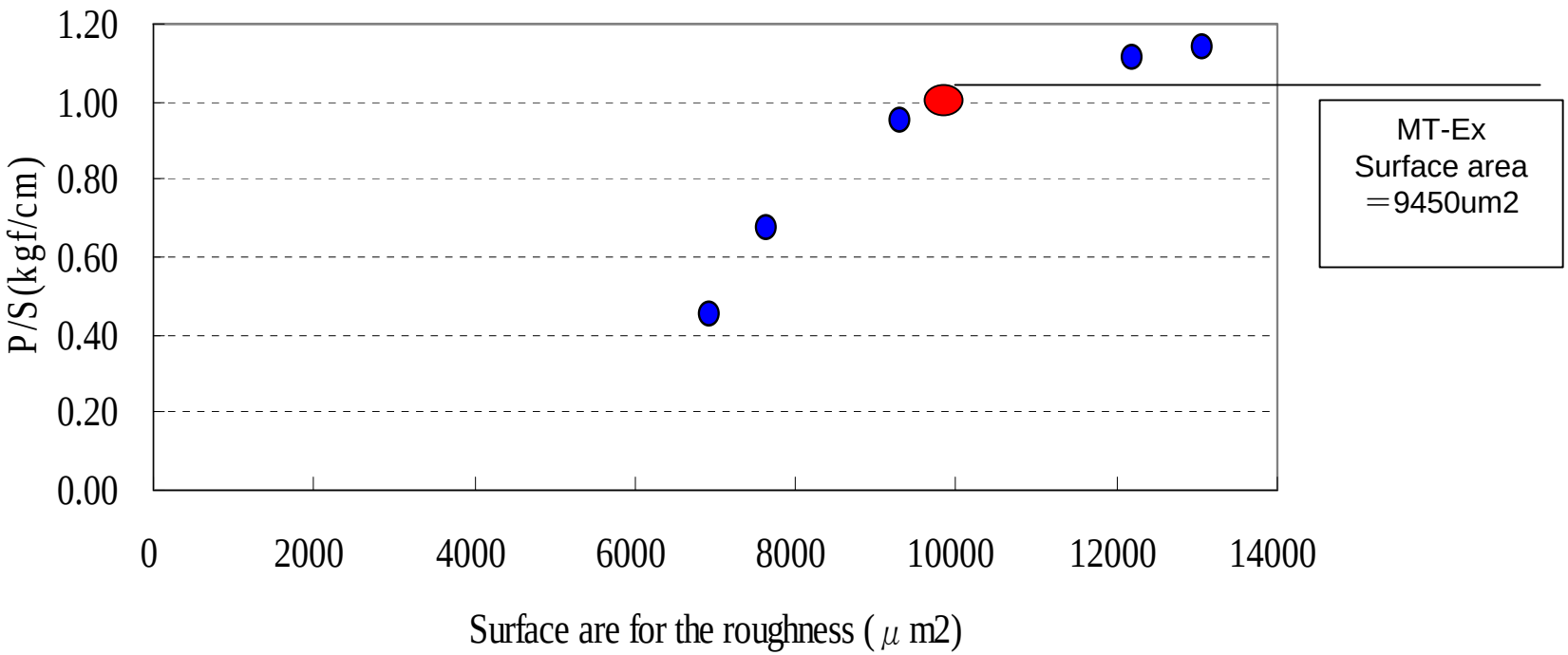
Too weak

Contact stylus type

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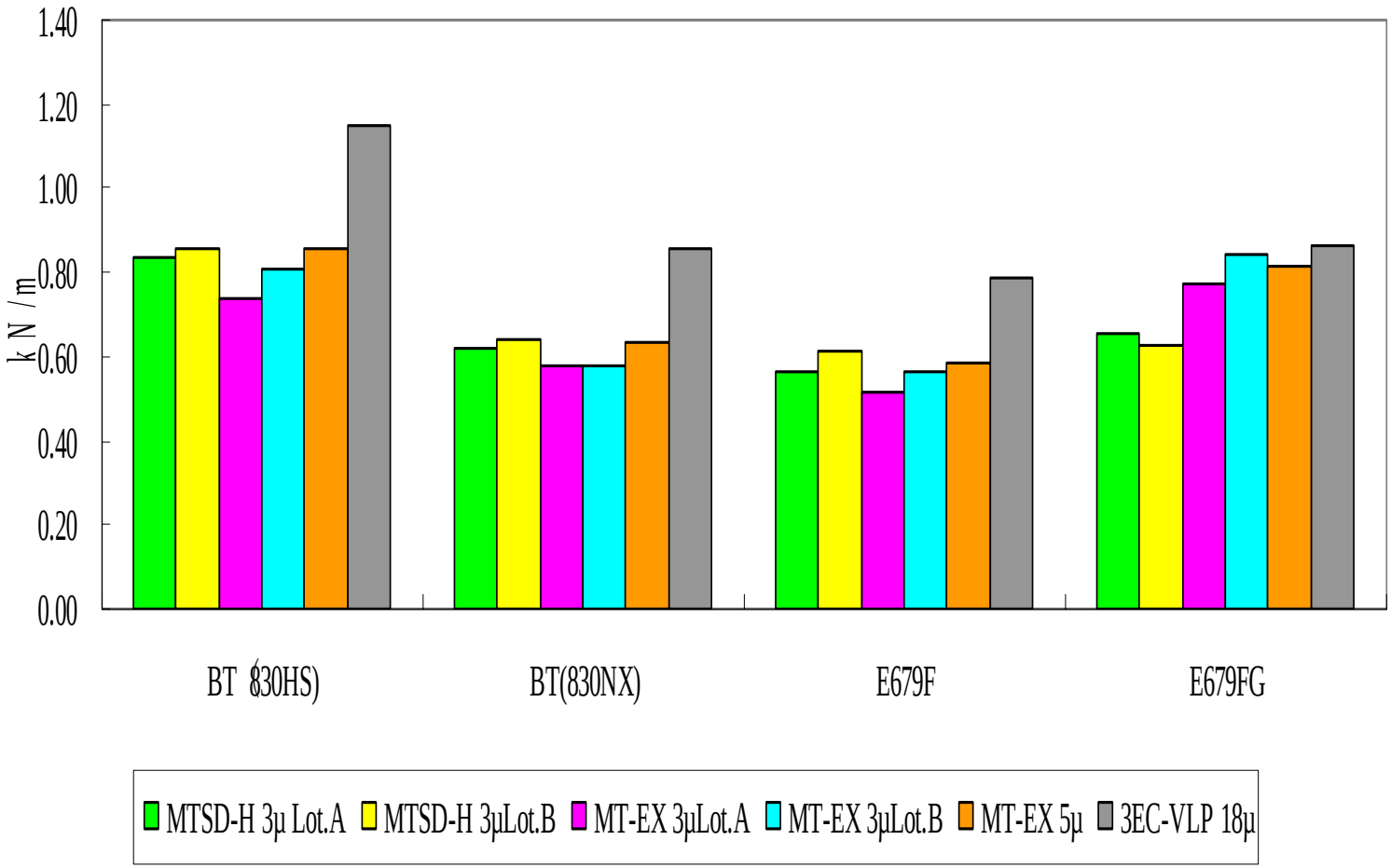
Surface Area v s P/S

Measurement by a laser microscope （Area focused is 6,030um ）



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P/S on various High Tg materials



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