

Example list of results corresponding to a single layer film

Film kind	ITO	α FTO	Cr	Al	Ni	Au	Cu	Ag (APC)	Ti	Mo	IZO	MAM	FTO
Film thickness unit nm	20~ 450	50~ 200	10~ 300	100~ 1000	100~ 500	100~ 500	100~ 2000	100	100	100	300 10 Ω <	100 ~500	40~ 800
Minimum pitch unit μ m	6	6	6	10	10	20	20	20	20	20	20	20	2 (mm)
Minimum L/S unit μ m	3/3	3/3	3/3	5/5	5/5	10/10	10/30	10/10	10/10	10/10	10/10	10/10	2/2 (mm)
Forming accuracy (Cr edition use)	$\pm 1 \mu$	$\pm 1 \mu$	$\pm 1 \mu$	$\pm 3 \mu$	$\pm 3 \mu$	$\pm 3 \mu$	$\pm 5 \mu$	$\pm 5 \mu$	$\pm 3 \mu$	$\pm 3 \mu$	$\pm 3 \mu$	$\pm 3 \mu$	$\pm 300 \mu$
Processing size (Max work) unit mm	400x500 *300x400	300x400	300x400	300x400	300x400	150x150	300x400	150x150	300x400	300x400	300x400	300x400	150x150

Minimum pitch · L / S · Processing accuracy also depends on film thickness etc specifications.

We will help you create empty cells etc with thin glass laminating technology cultivated with glass / glass touch panel.

① Processing contents

- Glass + glass laminate (Can step cut)
- Glass + film lamination
(Specification consultation necessary)

② Processing size

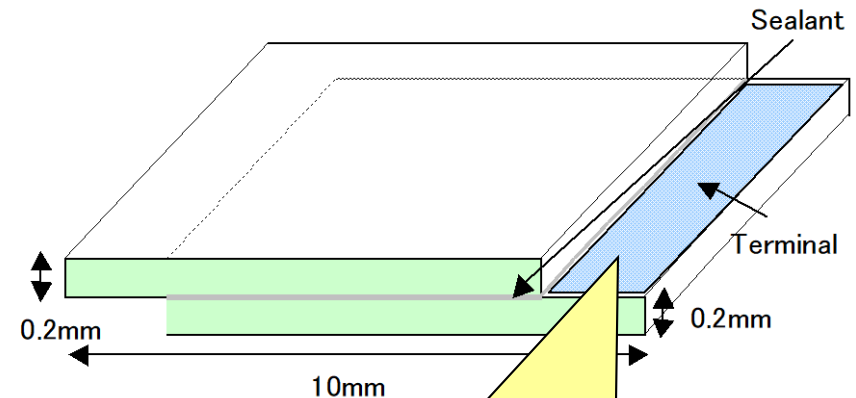
- MAX It is possible to process glass substrates up to 400 mm × 360 mm.

Thickness up / down 0.2mm ~ Available

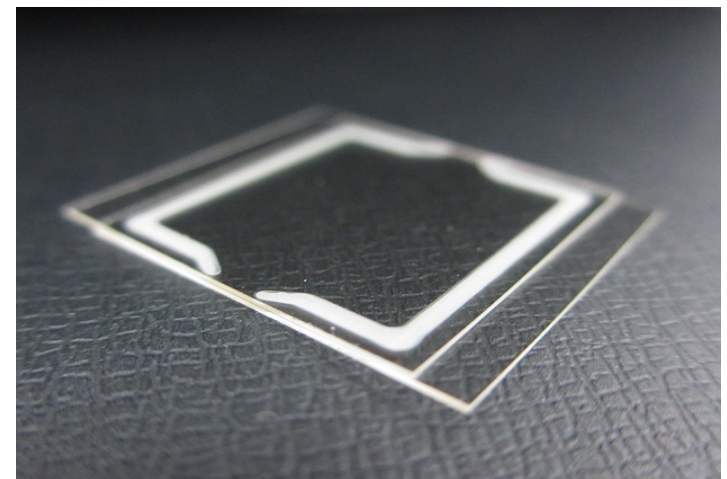
G + F : (Specification consultation necessary)

③ Machining record

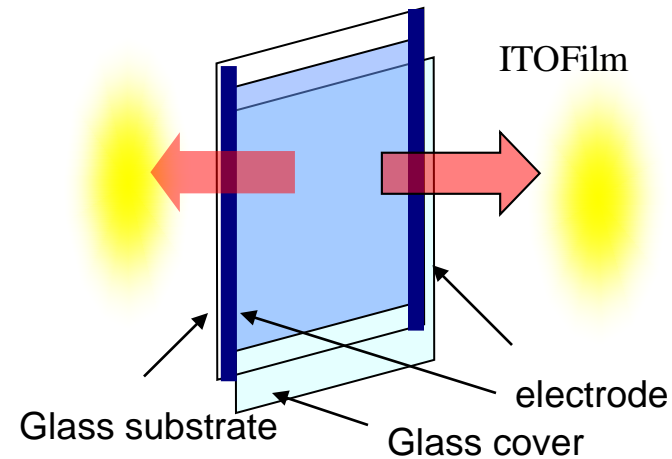
- Gap between glass and glass : 10 ~ 30 μ m
(Bonding with sealing material)



Step cut of laminated glass is also reputed!



ITO heater processing



【Application】

- For dew condensation prevention of surveillance cameras and equipment requiring visibility
- Micro flow path etc Want to warm while observing
Chemical analysis, for cell culture experiment!
- For aircraft and special vehicle monitors that require full LCD performance!
- To prevent fogging of the mirror in the bathroom and the washroom!

【Size】

- Minimum 10 mm × 10 mm to maximum 370 mm X 470 mm (panel shape)
- Minimum to maximum 300 φ (wafer shape)



Assisting various materials evaluation



- I would like you only to apply our own resist.
- Is there any place you can ask for exposure and development only?
- I would like to peel film from substrate!
- I want to work in a clean room.
- I want to get a small glass as cheap as possible !

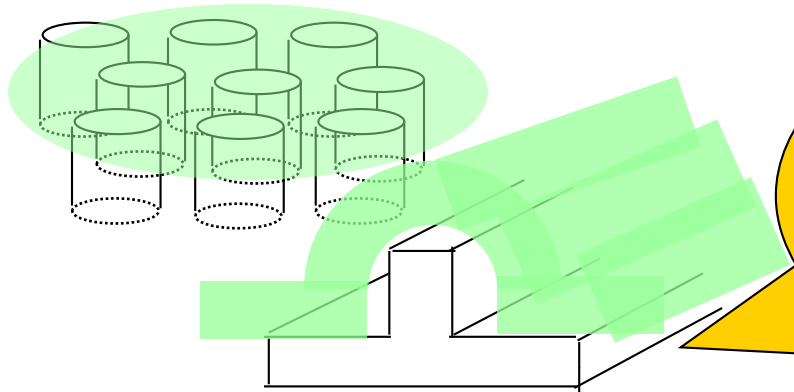
Techno print also responds to such troubles !

Evaluation support for development of various materials

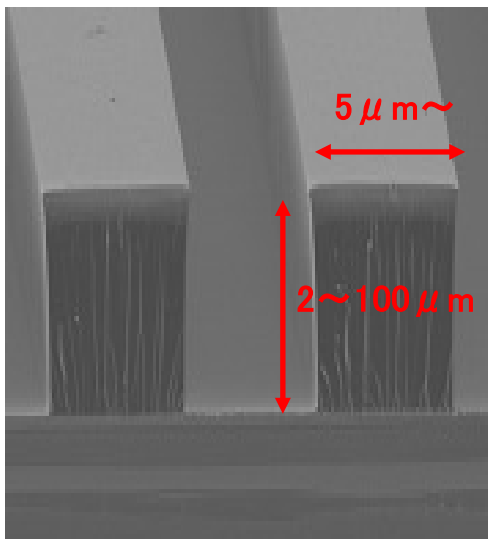
Process	apply of resist	Exposure Developing	etching	Cut
Washing	○			
Apply of resist	○			
Pre bake				
Exposure		○		
Developing		○		
Post bake	○	○		
etching			○	
Peeling off			○	
Cut				○
Chamfer				○
Washing			○	○
Inspection	○	○	○	○
Packing	○	○	○	○



Microstructure formation



Have you been struggling to create high precision jigs for tracking ability evaluation of adhesion / reinforcing agent materials etc. on uneven substrates?



At TCN, we provide customized types of μm precision with various resist agents. Pattern shape can be straight / circular (cylindrical) Aspect ratio 5:1 (film thickness $50\ \mu\text{m}$ or more) possible, (3:1 actual results)

Application example

- *Follow ability evaluation of adhesive, adhesive film, filler (semiconductor PKG etc.)*
- *Micro folder such as micro LED*
- *Cover glass spacer of solar cell etc.*

In addition to simulation, evaluation and verification that is close to the actual machine is possible.

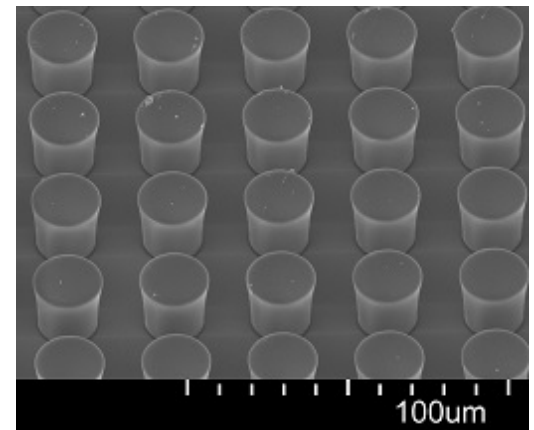
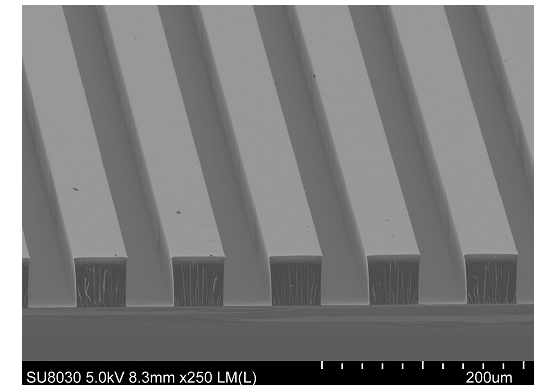
By creating a mask, it is possible to divide multiple shapes by changing the line width such as L shape, straight line, circular shape (cylindrical) etc. on the same board.

Aspect ratio 5: 1 (film thickness 50 μ m or more) possible, height 2 to 100 μ possible

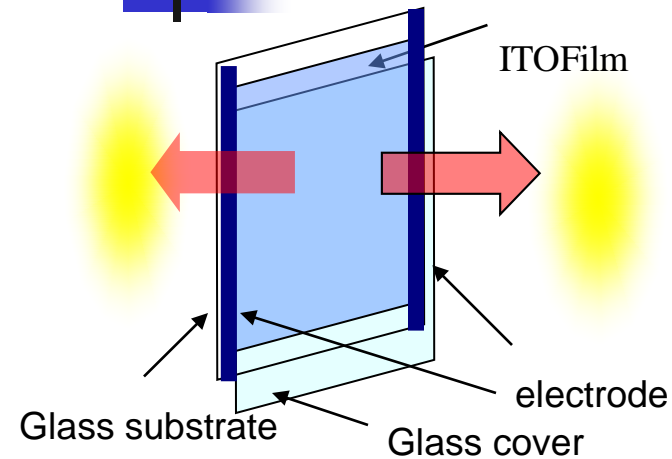
* However, the same height is on the same board.

Substrate size is easy to use up to 300 mm in large format □ 50, 100, 200 mm and any size can be cut.

Glass / silicon wafers etc are possible as base material.



ITO heater processing



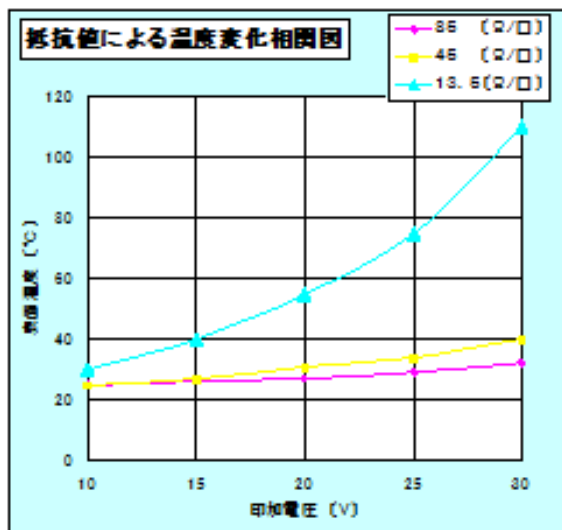
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* A wide FPC can also be crimped to 300 mm ACF!

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Light-sensitive resin patterning

- ① The processing possible film kind
 - Register, polyimide, resin black and exposure to light Ag (MAX170□) etc.
- ② Processing size
 - MAX: 300mm × 300mm
 - *Effective area: ϕ 300mm
- ③ Processing results

	Line	Space
Resiser	3 μ m	3 μ m
Polyimide	10 μ m	10 μ m
Resin black	7 μ m	15 μ m
Photosensitive Ag	10 μ m	10 μ m