

PDP Tensile Test Method for the PDP's Barrier Ribs

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Key words : Pb-free, PDP barrier rib, Tensile strength, Tensile test, Young's modulus

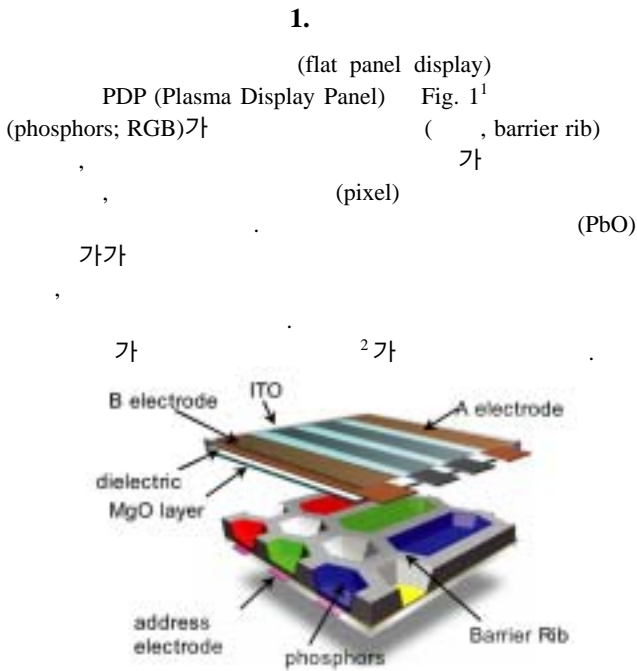


Fig. 1 Constituents of an AC PDP¹

가	가	가
535, 550	565 °C	가
60	5.4 °C/min	370 °C
		(furnace cooling)

Table 1

Table 1 Specimen change due to curing

	Before curing	After curing
Specimen		
Mass, <i>m</i> [g]	0.16	0.13
Width, <i>w</i> [mm]	4.20	3.55
Length, <i>l</i> [mm]	50.0	42.0
Thickness, <i>t</i> [mm]	0.20	0.18

(brittleness)

(quality control)
(steel ball drop test)
(indentation test)³
가
(Pb-free)
(ZnO)
(green sheet; GS)
(curing temperature)

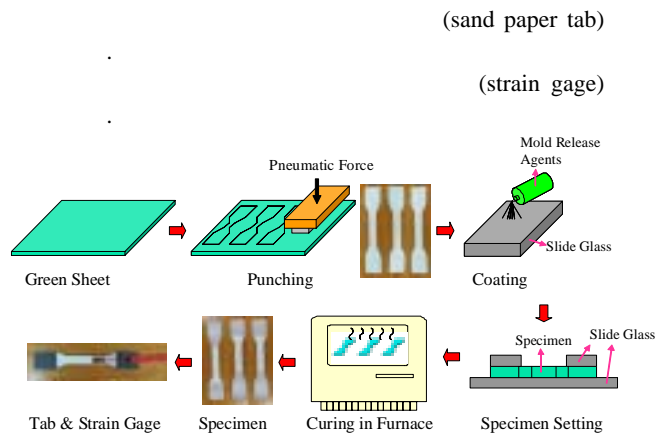


Fig. 2 Specimen preparation procedures

2.1
ZnO, B₂O₃ Al₂O₃ 0.2 mm GS
(test section) 4.2 mm, 50.0 mm
(customized blade)
GS
가
GS
(mold release agent)
2

2.2
(electrodynamic)
±250 N, ±50 mm
(Model; MTS Tytron 250, USA)
(alignment)
2
(2-axis stage)

Fig. 3

2.3
(mechanical clamping grip)
10%
가

420 °C 9.5 °C/min
가
가
가



Fig. 3 An electrodynamic tensile testing system

3.

3.1

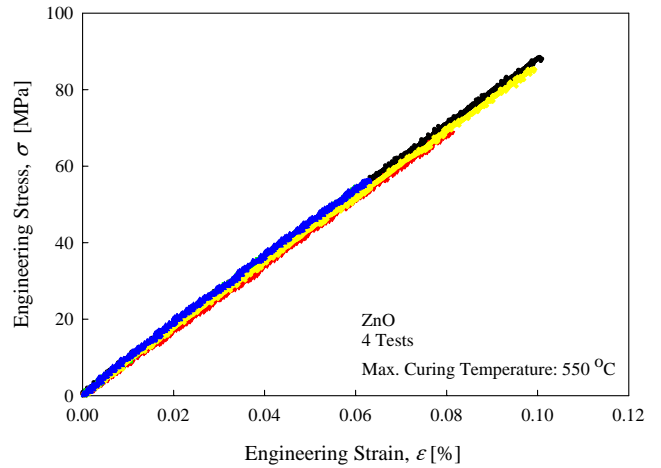


Fig. 5 Four Stress-strain curves ($T_{max} = 550\text{ }^{\circ}\text{C}$)

88 ± 4 GPa
가 가
Fig. 6

Fig. 4

가 70 % 가
25 % 가

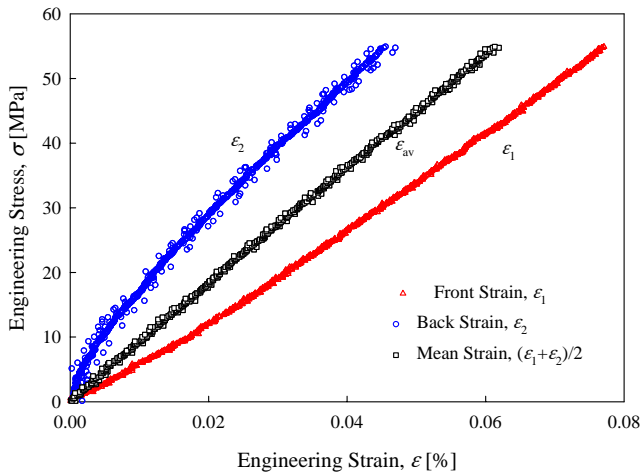


Fig. 4 Stress-strain curves from each strain gages attached on the front and back side

3.2

535, 550, 565 °C

4

550 °C

Fig. 5

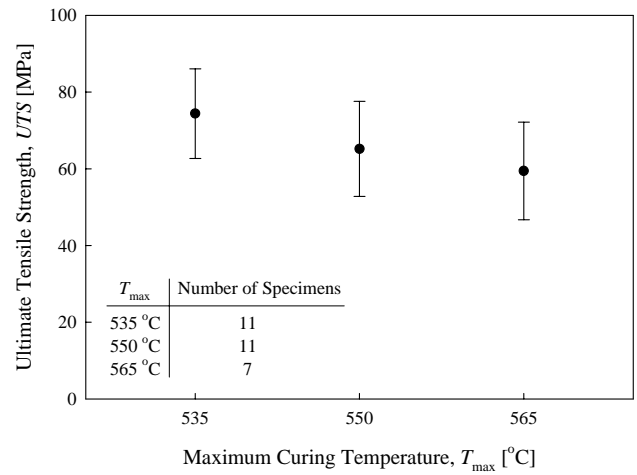


Fig. 6 Tensile strength variation with curing temperature

4.

PDP

88 ± 4 GPa
가 가

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