

Optimization of LOCA gap fill process by High Precision Slot Die

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Liquid Optical Clear Adhesive (LOCA) is well known useful material for the touch panel display and the sensor device. However, there are many issues of process control by dispense nozzle process. Most well known issues are gap fill coating issue in the hard frame (or in the black matrix) of the smart device. High precision Slot Die solved this issues instead of conventional dispense nozzle. This paper explains precise coating application for the adhesive gap fill by high precision Slot Die. The high precision slot die lip can save the space of narrow gap of Black Matrix on the display, because this slot die can coat very precisely into target device by the process control of several key parameters. We explain new slot die design and process result with several motion pictures as the evidence.

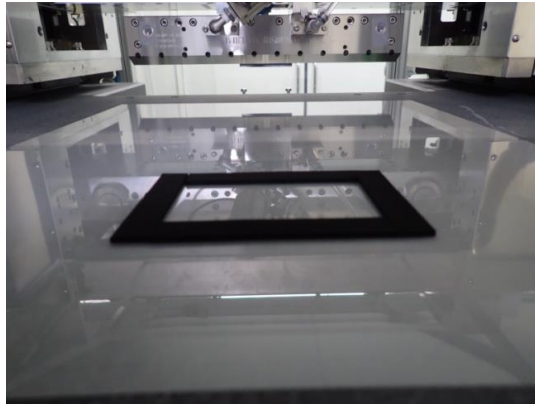


Fig. 1. Gap fill coating target in the hard frame (Black matrix)

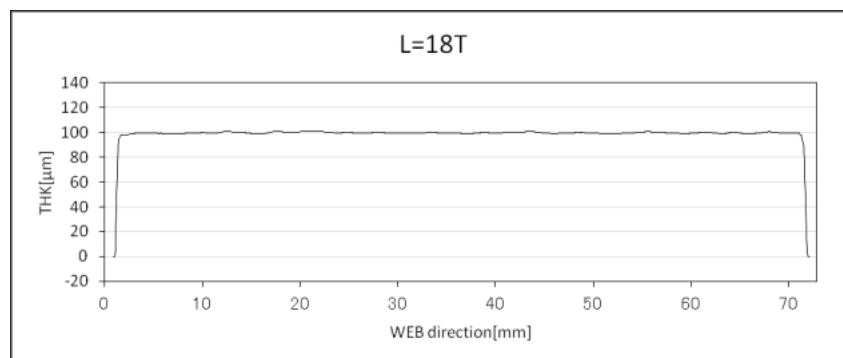


Fig. 2. Coating result of gap fill by new Slot Die design

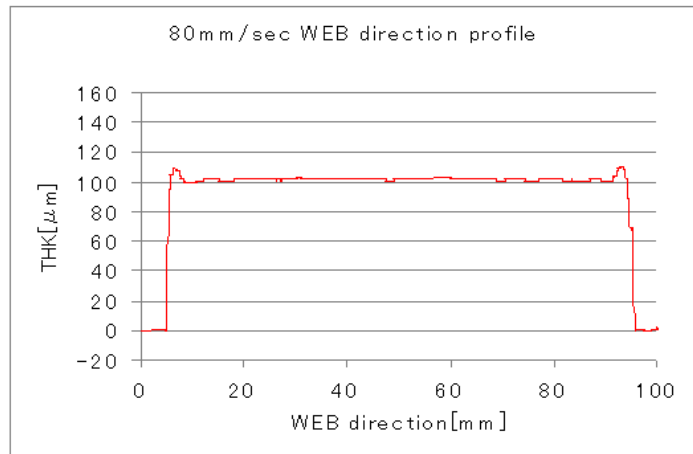


Fig. 3. Coating result of gap fill by coating velocity control

A part of the summary

New slot die design is useful to LOCA process for Touch panel and sensor device.
New design with Tungsten Carbide slot die outperformed to Stainless steel slot die.
Higher coating velocity is suitable for this process.