

Epoxy Glue Voids Computation Using Gridlines

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Abstract—The paper presents a specialized measurement grid tool for glue voids and die attach-related anomalies, with zero-cost implementation.

Keywords— Epoxy glue voids; die attach; gridlines.

I. PROJECT OBJECTIVE

- Provide specialized measurement tool for quantifying and measuring epoxy glue voids and other die attach-related defects, for Assembly Process Control and New Product Introduction (NPI)
- Zero-cost implementation by utilizing available software licenses and existing resources
 - Instead of purchasing brand-new measurement equipment or commercial software measurement tool, one great challenge is to come-up with an innovative and cost-effective solution by maximizing existing/available resources

II. PROBLEM IDENTIFICATION – GLUE VOIDS WITH VISUAL MEASUREMENT

- Previous methodology employed manual grids to measure or estimate the quantity or magnitude of the epoxy glue voids defect

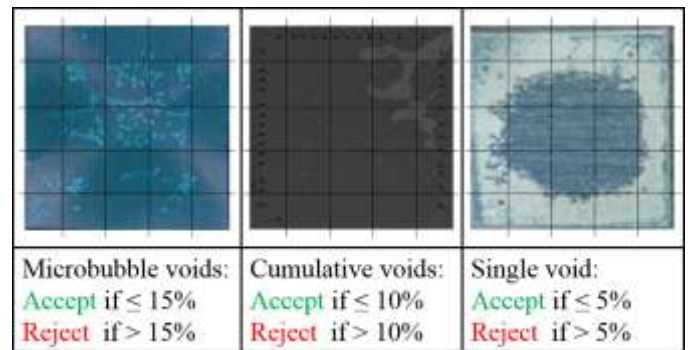
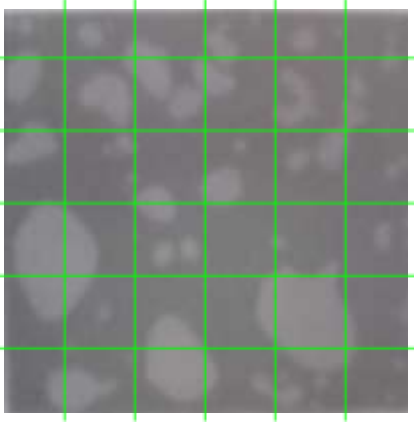



Fig. 1. Examples of epoxy glue voids that need to be measured.

III. SOLUTION IMPLEMENTATION

BEFORE	AFTER
<p>Manual Grid</p> 	<p>Epoxy Glue Voids Measurement Tool</p> 
<p>Loss: Low accuracy. Measurement is subjective, and through visual estimation.</p>	<p>Gain: Measurement is still subjective but with better accuracy. The tool calculates real-time while pin-pointing the epoxy glue voids / defect.</p>
<p>Result: Based on the manual grid estimation, the voids covered a total of 8 grid boxes out of 36. Hence, measured % epoxy glue voids is estimated at 22%.</p>	<p>Result: % epoxy glue voids is at 24.75%. The measured value is of better accuracy and credibility than the manual grid visual estimation.</p>