

PROBE TESTABILITY

NC-SMQ®92J Solder Paste



Introduction: To be considered a probe testable solder paste, the residue must have a high *probeability* and easy *penetrability*. These terms are defined as follows:

- Probeability – The percentage of total probing tests that result in successful electrical contact.
- Penetrability – The force required to pass through the flux residue and make electrical contact.

Indium Corporation has determined that the best way to achieve these results was to formulate a solder paste that possessed a soft post-reflow flux residue. NC-SMQ92J solder paste possesses these traits.

High Probeability

60,000 consecutive successful probe hits

Four-point crown probes penetrated NC-SMQ92J's residue 60,000 times with no clogging or failed electrical contact.

Additional probes tested with no clogging

For this test a board was coated with flux and reflowed. Results were evaluated visually. Lab personnel determined that 1,000 hits through this residue coating were adequate for indicating the likelihood of clogging.

- Waffle probes hit 1,000 times with no indication of clogging. The probe surface remained clean.
- Chisel probes hit 1,000 times with no indication of clogging. The probe surface remained clean.

Easy Penetrability

Minimal probe force required to penetrate residue

- Penetration of NC-SMQ92J residue requires 17 grams of force (0.6 oz) using a spear probe (QA 100-PRP4041) at via locations. The probe made electrical contact almost instantaneously.
- Penetration of typical RMA flux residue requires 190 grams of force (6.7 oz) using a spear probe (QA 100-PRP4041) at via locations. The probe made electrical contact in less than 10 seconds.

NC-SMQ92J provides unsurpassed probe testability.