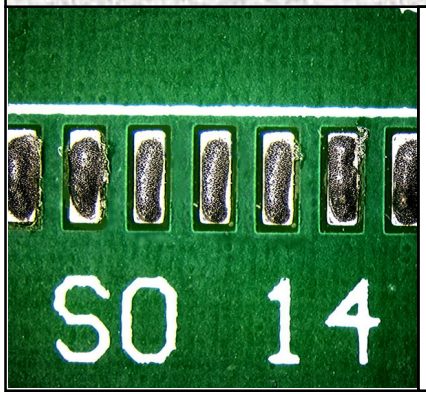
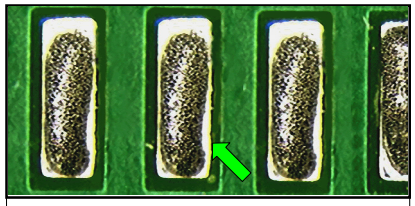


SOLDER PASTE / PREFORM APPLICATION

Solder paste is a mixture of solder alloy particles, flux, and other materials, for use in reflow soldering (oven, vapor phase, or infra-red) of surface mount technology (SMT) components.

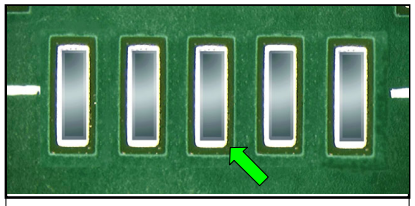
Solder preforms are generally made from solder alloy wire or stamped from solder alloy sheet material, and formed into specific shapes (typically toroids, washers, or donuts) for use in reflow soldering (oven, vapor phase, or infra-red) of plated through hole (PTH) components and some surface mount technology (SMT) components.



ACCEPTABLE
SOLDER PASTE APPLICATION

The paste is applied in a uniform thickness, with proper alignment and placement. There is no bridging, bubbles, crusting, separation, or smearing.

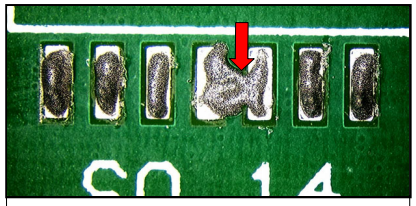
NASA-STD-8739.2 [8.2], [8.6]



ACCEPTABLE
SOLDER PREFORM APPLICATION

The preforms are applied with proper alignment and placement.

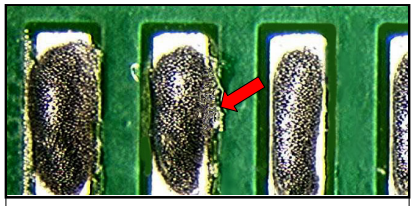
Best Workmanship Practice



UNACCEPTABLE
BRIDGING

Bridging of lands is an indicator of improper screen alignment / paste application.

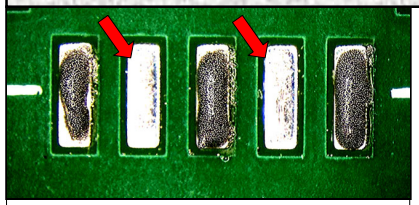
NASA-STD-8739.2 [8.7.4.f], [12.6.1.a.1]



UNACCEPTABLE
BUBBLES

Bubbles in the paste are typically caused by over-mixing, and can affect solder joint formation.

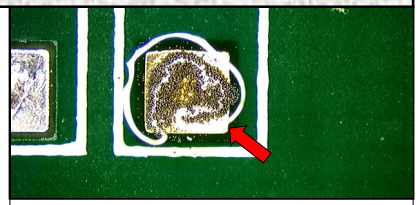
NASA-STD-8739.2 [12.6.1.a.3]



UNACCEPTABLE
MISSING DEPOSIT / PREFORM

Missing paste deposits or preforms are an indicator of an improper process.

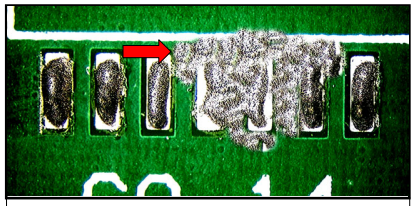
NASA-STD-8739.2 [8.2]



UNACCEPTABLE
PASTE SEPARATION

Paste which exhibits separation shall be rejected.

Best Workmanship Practice



UNACCEPTABLE
SMEARING

Smearing that bridges conductors or lands is an indicator of an improper process or handling and shall be rejected.

NASA-STD-8739.2 [8.7.4.f], [12.6.1.a.6]

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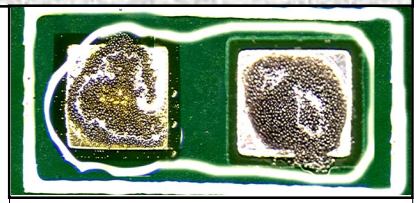
UNACCEPTABLE
CRUSTING

Crusting of paste is an indicator of improper curing or use of expired material.

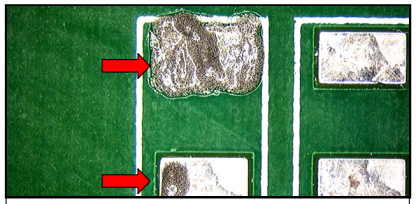
NASA-STD-8739.2 [6.12.2.d.6]



UNACCEPTABLE
EXCESS FLUX

Excess flux can degrade the formation of the solder fillet, leading to porous or rosin solder joints.

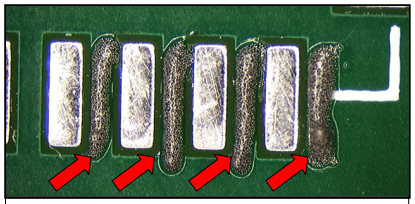
Best Workmanship Practice



UNACCEPTABLE
INCORRECT COVERAGE

Solder paste coverage, which exhibits properties less than those specified by engineering documentation shall be rejected.

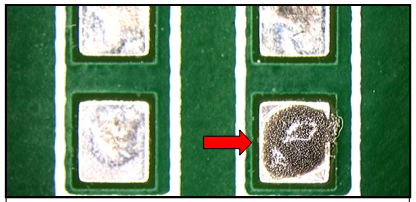
NASA-STD-8739.2 [12.6.1.a.4]



UNACCEPTABLE
INCORRECT PLACEMENT

Incorrect placement of solder paste / preforms is an indicator of an improper process parameter.

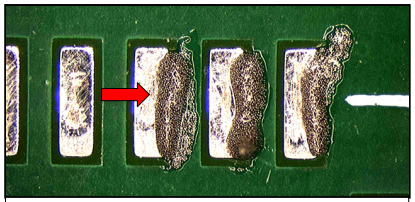
NASA-STD-8739.2 [12.6.1.a.5]



UNACCEPTABLE
ISOLATED DEPOSIT

Isolated deposition of solder paste is an indicator of a process control problem.

NASA-STD-8739.2 [12.6.1.a.2]



UNACCEPTABLE
MISALIGNMENT

Solder paste misalignment shall not be in excess of 25% of the spacing between lands.

NASA-STD-8739.2 [12.6.1.a.5]