

Solder Mask Repair

Procedure: The procedure described below is used to replace solder mask on printed circuit boards. The repair uses the brushing technique to apply the repair material.

IPC Referring Document: IPC 7721 2.4.1

Cleaning Solvent*	Utility knife*
Drill bits or ball mills *	Microscope*
Solder Mask	Oven*
Epoxy Wipes*	Kapton tape*

(* not included with std repair kit)

Procedure

1. Clean the damaged area with an approved solvent



NOTE: This repair method can only be used for surface damages or those into the base board material. However, this method should not be used when the damage is completely through the board.

2. Remove the laminate or any sharp edges or exposed fibers on the corner of the laminate



NOTE: In order to make sure all of the damaged laminate and PCB solder mask are “seen”, flood the area being repaired with alcohol. If any of the PCB internal fibers are damaged, then they will likely show up at this time.

3. Clean the area with an approved solvent
4. Apply Kapton tape to protect the parts of the PCB that need protection and brush the “solder mask” to the area being repaired and bake the PCB with 150 °C around 15-20 minutes.



Note: Step 4 is for repairing the little scratch for the PCB solder mask

5. Prepare the two-part epoxy resin supplied as per the instructions.
6. Mix the epoxy per the specified instructions
 - a. Before mixing, prepare surfaces to be clean, dry and free of oil, grease or wax.
 - b. Mix both resin and hardener on a clean, dry, flat surface which can later be discarded.
 - c. Squeeze an even amount of Resin and Hardener parallel to each other onto the mixing surface.
 - d. Prepare the color of the epoxy using the color agents provided (if required)
 - e. Mix thoroughly until both the Resin and Hardener blend into one uniform color
7. Apply adhesive within 50 minutes after mixing.
8. Cure the epoxy as per the O-Leading instruction's guidelines. It will dry somewhat concave (protruding from the surface of the circuit board)



NOTE: Step 4 to Step 8 is for repairing the material and solder mask. Protect heat sensitive components or remove them

9. Remove the Kapton tape
10. If there was previously a surface coating, re-apply the same coating
11. Visually examine the repair. Tape test as per per IPC-TM-650 (ANSI/IPC-FC-250A) test method
12. Make appropriate electrical