

Applications Lab

Process Update - Tip Life Tips

Solder tip life is highly dependant on the soldering application, the flux type used and operator technique. This technical note provides best practice information to extend tip life.

Cracking / Application / Operator Technique:

- Select the largest tip possible for the lead being soldered.
- Do not apply excessive pressure when soldering. To maximize heat transfer, tin the tip.
- Take care not to bang the solder tip against the metal workstand when inserting the tool.
- Do not use tips as a screwdriver or a prying tool.

See Dewetting or resize tip if operators are pushing too hard.

Corrosion:

- Select lower activity fluxes where possible. RMA flux is best for maximum tip life.
- Use only sulfur free sponges for cleaning tips.
- Use only clean sponges. Discard dirty sponges.
- Use RMA solder to tin tips during storage. Minimize use of organic, aqueous or high activity flux solders.

Heater Care:

- Do not use pliers to change tip cartridges. Use a Cartridge Removal Pad.
- Do not drop tip cartridges onto hard surfaces.
- For surface mount tips, do not bang the tips to dislodge components. Use a sponge.

No Clean Solders:

- Use the lowest possible temperature. Low temperature reduces thermal oxidation, solvent volatilization, and polymerization (black residue).
- Turn iron off when not in use.
- If allowed periodically use an RMA wire solder or solder paste to tin the tip.

Excessive Wear:

- Select the largest tip possible for the lead being soldered. Blunter tips carry more plating.
- Do not apply excessive pressure during soldering.
- Do not "scrub" the lead. To maximize heat transfer, tin the tip and create a solder bridge.
- If drag soldering be aware the abrasion will shorten tip life.
- Do not use commercial tip tanners for routine tinning. Use a flux core solder wire or paste.
- Use a clean, wet sponge to clean the tip. Do not use a dry sponge, rag, or any abrasive.
- Feed solder to joint and not onto tip.

Dewetting — oxidation of the tips plated surface due to carbonized flux residue, high temperatures or inter-metallic compound build up.

- Regularly clean tip and re-tin.
- Turn the system off when not in use for 10 minutes or more.
- Use the lowest possible temperature when soldering. Low temperature reduces oxidation.
- Keep tips tinned when in use and during storage. This keeps air from the tip. If using thin gauge solder wire use a thicker gauge for tip tinning prior to storage in the workstand.
- Use a flux with suitable lower activity (organic and high activity fluxes react faster and cause a residue build up).
- Use only clean sponges. Use deionized water to wet the sponges.

For your Lead-Free process contact us for:

- Lead-free evaluation support
- Thermal requirement assessment & tip recommendations:
- Send your PCB's and solder to us for tip & process recommendations
- Seminar information and training support.
- Your main rework issues: our experts work with the major solder and flux manufacturers for solutions.



Eutectic solder joint



Lead-free solder