

# 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.

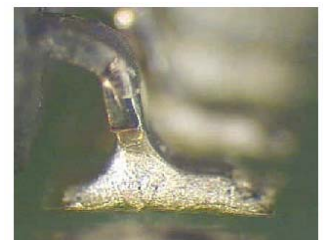
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### For your Lead-Free process contact us for:

- 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*