Guidelines/recommendations
“Drying of PCBs before soldering”
(Setting parameters subject to user-specific processing operations)

ZVEI: Die Elektroindustrie

Objective:

- Drying = reducing the humidity in PCB before soldering
- Preventing delamination caused by thermal stress after moisture absorption

Methods:

- Drying in convection and/ or vacuum oven
- Parameters subject to material type, soldering surface, layer count, time to soldering, layout (copper-plated areas)

Parameter recommendations:

- Drying in convection and/or vacuum oven, not in stacks
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Material	Parameter	Time to soldering
FR4 (Tg 135 °C)	120 °C, ≥ 120 min	24 hrs max.
FR4 (Tg > 135 °C), ceramic, PTFE, ML ≥ 6 layers	130 °C, ≥ 120 min	8 hrs max.
Polyimide rigid-flex, flex PCB	120 °C min, ≥ 240 min	4 hrs max.

(See also the guidelines/recommendations “Storage conditions for bare PCBs“)

- The actual drying temperature and duration must be adjusted to the layer construction, layout and previous storage time.
- Vacuum drying (e.g. 50 mbar) is recommended for thermally sensitive surfaces (e.g. immersion tin) since the temperature and drying time can be reduced if necessary.
- Drying of OSP surfaces must be agreed between customer and supplier (AABUS).