

Recommendation for baking of Rigid PCB

This recommendation is for baking of rigid PCB's, constructed using epoxy resin (FR4.0, FR4.1, FR15.0 & FR15.1). Epoxy resin is not so hygroscopic, and normally there is no 'automatic' need for baking. However, if the boards are old (> 6 month), the packages have been broken/open or whenever there is a suspicion of moisture within the boards, it might be needed to bake prior to assembly/soldering to prevent delamination.

Below is a baking recommendation for different surface treatments, and it is important to note that baking should be kept to a minimum to prevent excessive oxidation and/or intermetallic growth.

HASL Lead-free, HASL Leaded, ENEPIG and ENIG

- **2 hours at 120° C**
Dwell or hold time between baking and soldering is dependent upon the storage conditions. Ideally it should be kept to a minimum, however it is worth mentioning that at 75% relative humidity, the recommended maximum hold time is 24 hours.
- **Oven conditions**
Baking should take place in clean oven to prevent any form of contamination during the process. The boards should also be placed in the oven in such a way that the air can circulate freely around the boards during the baking time.
- **Solderability concerns**
All baking can be considered as ageing and may affect the solderability negatively. Given time and temperature above must be seen only as recommendations. The responsibility to approve their baking process is up every customer and case.

Immersion Tin, Immersion Silver and OSP

Since all of these surface treatments are very sensitive finishes, normal baking is **not** recommended. If needed, do trials at a lower temperature and secure the performance with solderability tests.

Baking in vacuum oven (below 50 mbar) may be performed at lowered temperatures and reduced times. In all such cases the customer has their own responsibility to approve their process.

For further reading on surface finishes please visit www.ncabgroup.com and download the PCB Surface Treatments presentation