# BBG Tech Tip #7

## PCBs & Moisture

It is highly recommended to bake the bare boards prior to any assembly operation especially as the demand for lead-free materials increase.

Once the printed circuit board fabrication is complete, the bare board will begin to immediately absorb moisture. The amount of moisture absorbed will depend upon the base material used and the environment in which it was manufactured, shipped and the method used for storage. The length of time product sits idle on the storage shelf will also have an affect on the amount of moisture absorbed. Vacuum sealing plus desiccant will only delay or lessen, ***not prevent*** moisture absorption. The longer the storage time the greater the chance for moisture absorption to manifest itself as delamination in the assembly operation.

Delamination occurs by either moisture or inadequate manufacture of the bare board. If you have experienced board delamination during the assembly process, stop the operation and verify that a moisture bake-out did occur just prior to assembly. If not, please bake the bare boards and once complete continue with the assembly operation.

If delamination occurs again after the immediate bake cycle, then stop the assembly process and send one or two unassembled bare boards with the same date code immediately to the vendor to verify in-house or through an accredited government testing laboratory that will determine if the boards are structurally sound.

If structurally sound, meaning a there is most likely moisture related problem, then the bake-out process used will have to be reviewed along with the profile of the assembly operation. Requirements for base materials may also come into question as it relates to being compatible with the operation.

*Research for the above information may be from, but is not limited to, IPC reference manuals, the PCB Handbook, the Bare Board PWB Design Manual and consultation with industry professionals. Please consult a process engineer familiar with your company's PCB assembly process before making any procedure changes.*