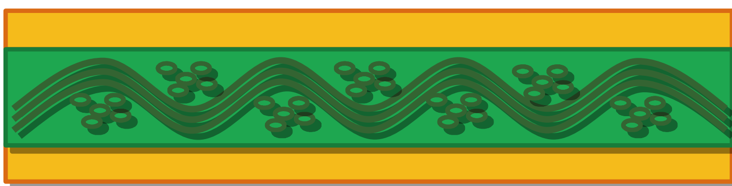
Producing Method of Printed Circuit Board

Build Up Board（BU)

In this structure, vias are formed one at a time and built up. Although there is an increased risk of defects due to misaligned vias during stacking, the number of layers and via positions can be greatly increased, such as “L2-L3 only” or “L1-L3”.

◆4-layer 1-2-1 BU substrate

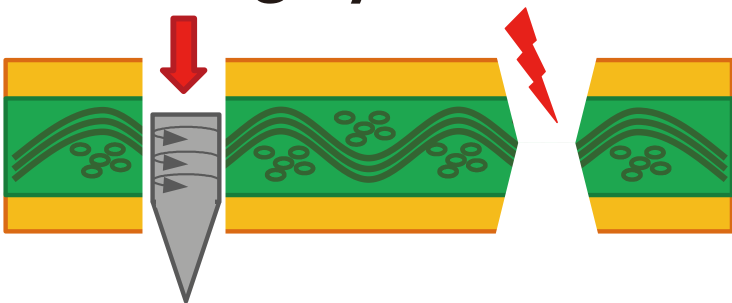
1. Prepare a copper clad laminate with Cu foil on both sides.



Cu Foil

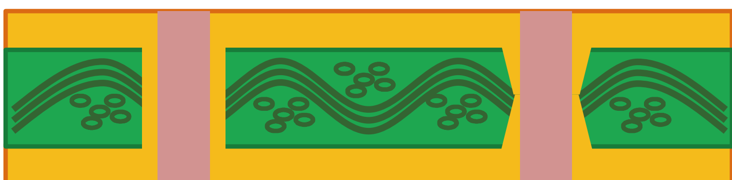
Core

2. Drilling by NC drill or laser.



In the case of laser vias, drilling from the top and bottom results in an “hourglass” shape.

3. Plating is formed on the inner wall of the via and filled with hole filling material.

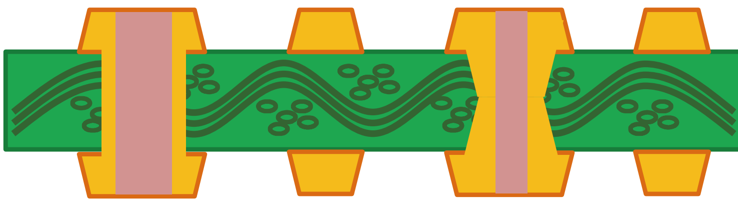


Producing Method of Printed Circuit Board

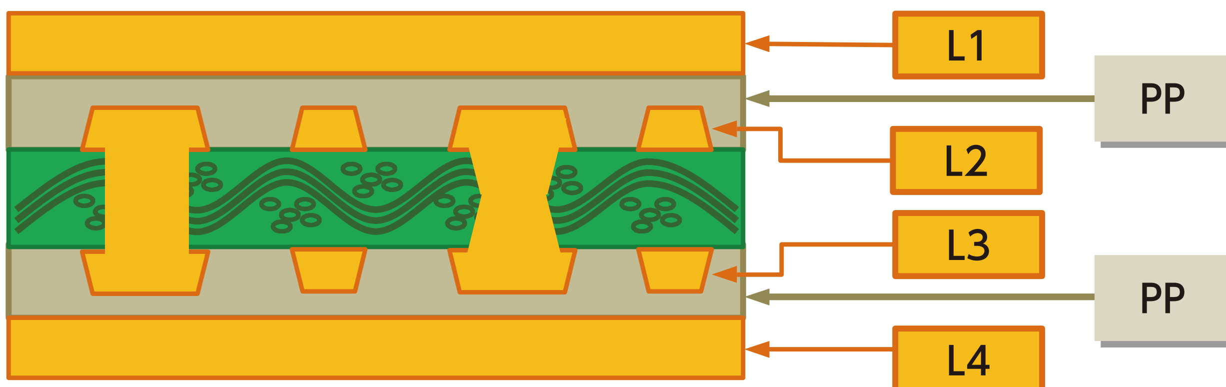
Build Up Board (BU)

Cu Foil | Core | PP

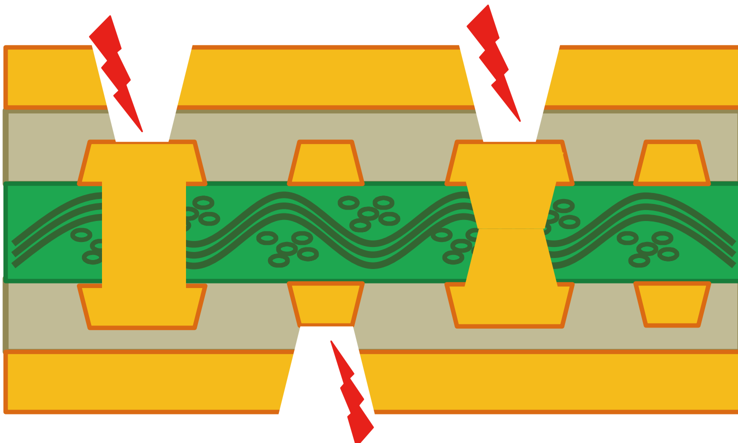
4. Form the pattern for the inner layer (L2-L3).



5. Prepreg (PP) and Cu foil (L1 & L4) are laminated under high pressure and temperature.



6. Laser vias are formed on the outer layers (L1 & L4).

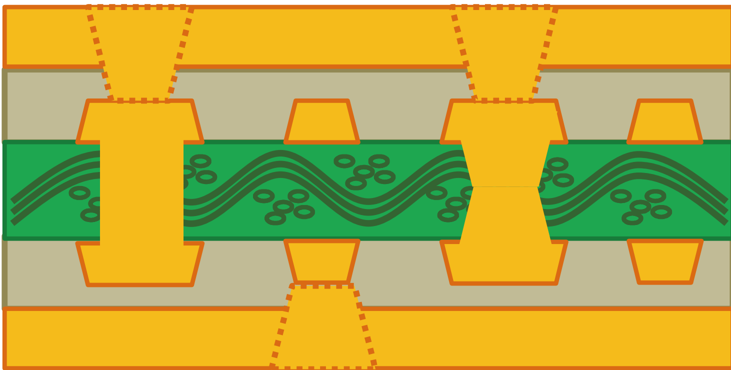


Producing Method of Printed Circuit Board

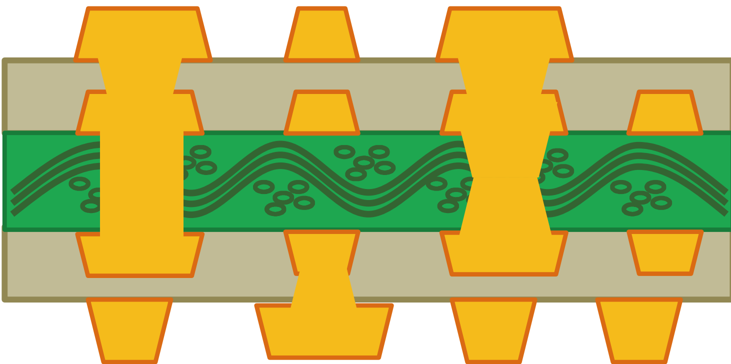
Build Up Board（BU)

Cu Foil | Core | PP

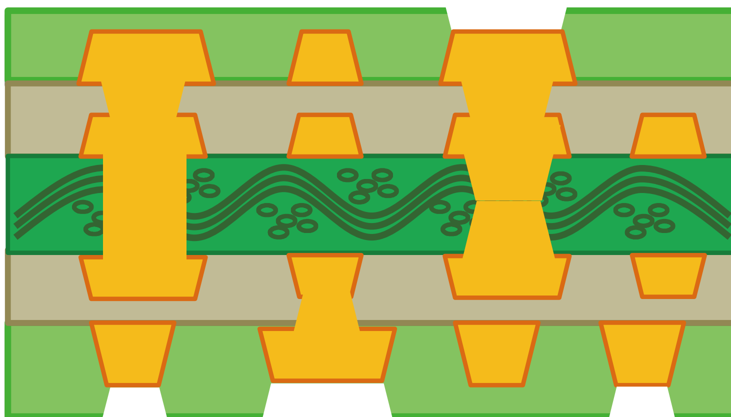
7. Fill the formed laser vias with copper plating.



8. Form the pattern for the outer layers（L1 & L4).



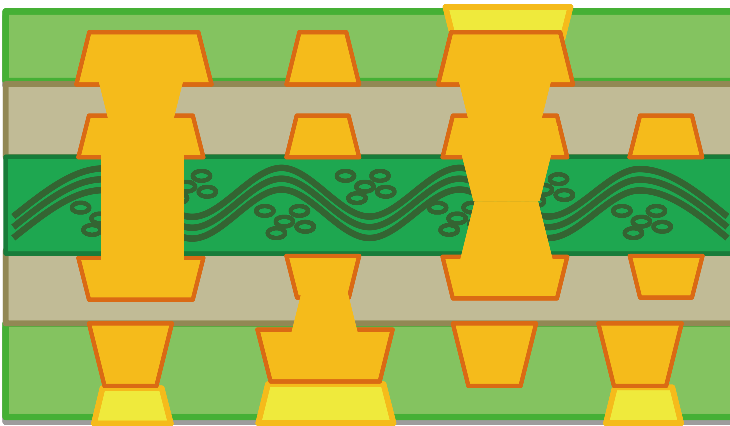
9. Forming SR.



Build Up Board（BU）

Cu Foil	Core	PP	SR	Au Plating

10. Form the Au plating.



11. Outer Routing ～ Shipping is almost same as the penetrated board.

In order to check for abnormalities in patterns and connections in the inner layers, it is necessary to use **electrical testers（Open / Short testers)** to check for electrical continuity since visual inspection is not possible.

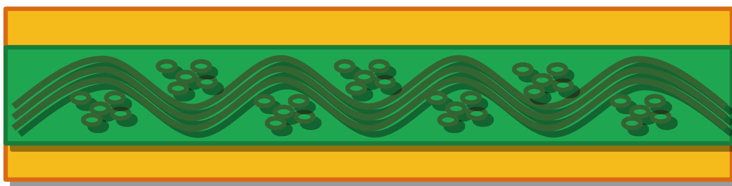
基板のつくりかた

ビルドアップ基板（BU基板）

ビアを一段ずつ形成し積み上げ（ビルドアップ）していく構造です。積層の際にビアの位置がずれてしまい不良となるリスクも増えますが、「L2-L3のみ」や「L1-L3まで」などビアの位置や層数の選択肢が大幅に増やせます。

◆4層1-2-1BU基板の場合

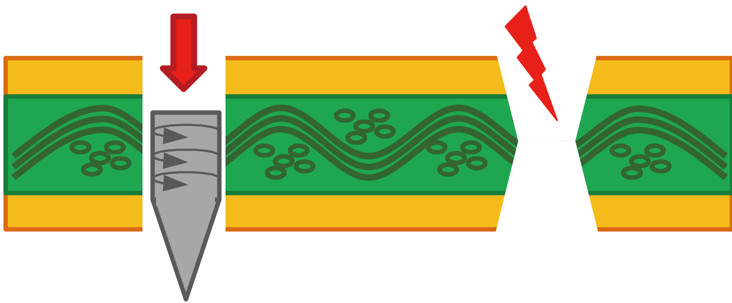
1. 両面に銅箔が張られた銅張積層板を用意。



銅箔

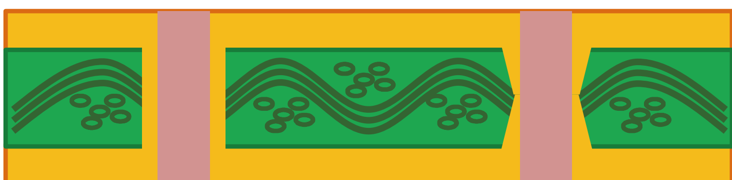
コア材

2. ドリルまたはレーザーにて穴あけ。



レーザービアの場合、上下から穴あけを行うと砂時計のような形状となります。

3. ビア内壁にめっきを形成し、穴埋め材を充填。

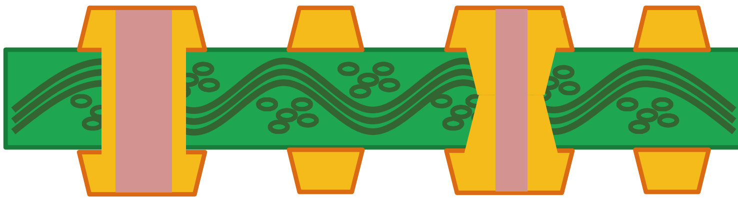


基板のつくりかた

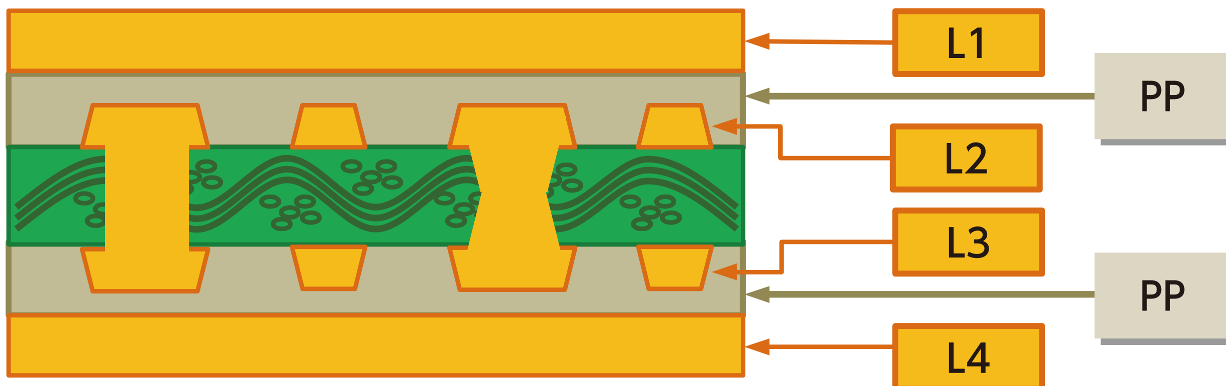
ビルドアップ基板(BU基板)

銅箔　コア材　PP

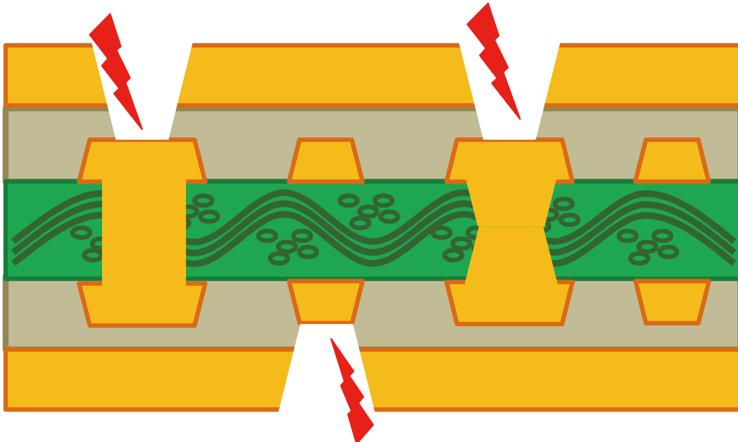
4. 内層(L2-L3)のパターンを形成。



5. プリプレグ(PP)と銅箔(L1&L4)を高圧と高温にて積層。



6. 外層(L1&L4)にレーザービアを形成。

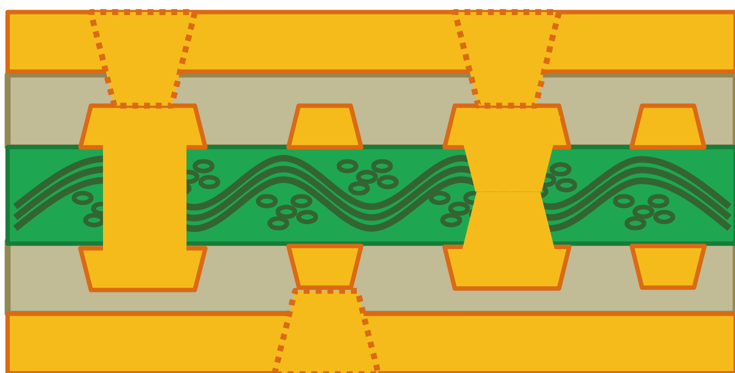


基板のつくりかた

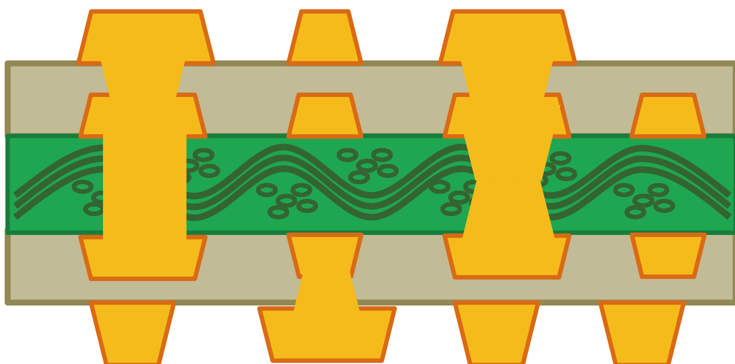
ビルドアップ基板(BU基板)

銅箔　コア材　PP

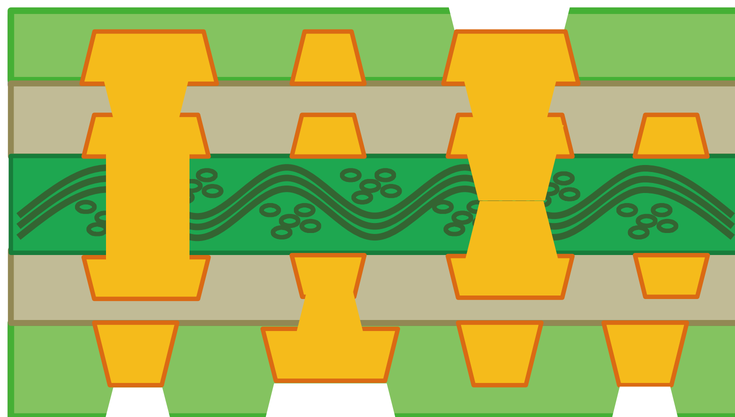
7. 形成したレーザービアを銅めっきにて埋める。



8. 外層(L1&L4)のパターンを形成。



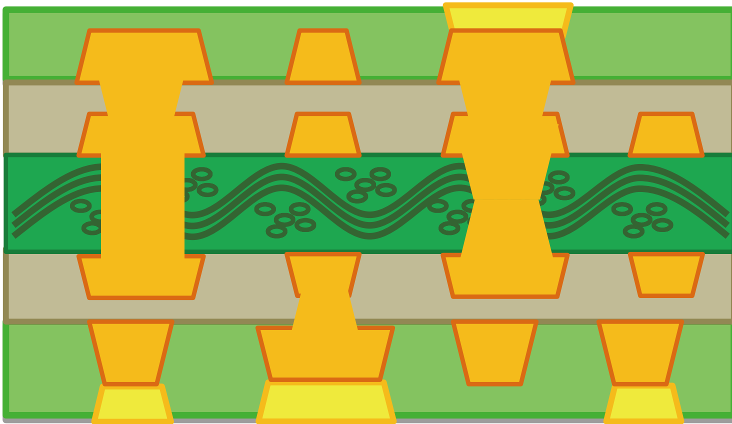
9. SRを形成。



ビルドアップ基板（BU基板）

銅箔	コア材	PP	SR	金めっき

10. 金めっきを形成。



11. 外形、後工程～出荷は片面板とほぼ同様。

内層のパターンや接続に異常がないか検査するためには、目視検査では確認が不可能であるため、電気の導通にて検査を行う**電気テスター（Open/Short テスター）**の適用が必要です。