

## 1. General Information

All printed circuit boards ordered by SIEB & MEYER must meet the acceptance criteria according to **IPC – A 600F, Class 2**. In addition the requirements described points mentioned in this document apply.

## 2. Substrate

Substrate used for the manufacturing of printed circuit boards must have a softening temperature of at least 150°C and the flame class UL94 V0.

## 3. Drill holes

All hole diameters programmed in the drilling program are final diameters. Contrary to the IPC directive the following applies:

- Final diameters of plated through holes allow tolerances of up to +/-0.085mm.
- Tolerance values of not plated through holes:  
The required diameter tolerance is +/- 0.05mm.

## 4. Routings

The tolerance values for the dimensions and offsets of external dimensions and internal disruptions are +/- 0.10mm.

## 5. Offset of the conductive pattern to the drill holes and the external profile

The allowed offset values of the conductive pattern and the external profile to the drill holes are +/- 0.10mm, as far as permitted by the annular rings.

## 6. Thickness of the copper layers in the plated through hole

The thickness of the copper layers shall be tolerated with a minimum of 0.020mm and an average of 0.025mm.

## 7. Final surfaces

SIEB & MEYER accepts unleaded hot-air surfaces and chemical nickel / gold. The technical description of the printed circuit board provides information about the required final surface.

## 8. Thickness of the solder resist

The solder mask thickness should be min.0.008mm on the edges and at least 0.01mm and max. 0.045mm on the surface.

## 9. Expansion and shrinking

The allowed tolerance value for expansion of the conductive pattern compared to the original layout is +/- 0.10mm.

## 10. Layer offset

The allowed tolerance value for the offset of the layers is +/- 0.10mm, as far as permitted by the annular rings.

## 11. Dimensional tolerances

The tolerance value for length and width dimensions is +/- 0.10mm.  
Deviations of +/-10% of the total thickness from the required total thickness are tolerated.  
Measurement is carried out over the complete board (incl. solder resist).

## 12. PCB bow/twist

According to IPC, a maximum deviation of 0.75% applies to PCBs with SMD assembly and 1.5% to PCBs with pure THT assembly.  
The PCB bow is evaluated on the basis of the edge length, while the PCB twist is evaluated on the basis of the diagonal of the PCB.

## 13. Copper surface under the solder resist

The copper surface under the solder resist must be free from contaminations.

## 14. Inadmissibility of repair and delivery of printed circuit boards with defects in solder resist

Printed circuit boards must be free from faults or defects in solder resist. Reworking of the solder resist, even to a small extent, is not permitted and will not be accepted.

Thus the exceptions to the repair and requirements after repair of the solder resist, which are described in IPC-6012, chapter 3.7 et seq. or derived thereof will not apply for deliveries to SIEB & MEYER AG.

## 15. Layer structure

The layer structure specified by SIEB & MEYER AG is mandatory and shall not be modified. The layer structure shall only be modified after the prior written consent of SIEB & MEYER AG.

## 16. Code

All PCBs must be labeled with a consistent *production code* and the *UL File Number* of the manufacturing plant allowing clear product identification and traceability of the order.

For this purpose a 10-digit alphanumeric production code and a 7-digit UL File Number code is printed into the solder resist mask on the solder side of the PCB according to the layout specification by SIEB & MEYER AG (The position of the code is determined by the data set).

Modification or creation of the codes must be done by the supplier/manufacturer. In the data set, the codes are replaced by variables and look like this:

Production code    **XXXX/YYYYYY**

**XXXX** The four "X" signs stand for the calendar week and the calendar year when production begins.

Example: Beginning of the production: calendar week 11 in the year 2018 → 1118

**YYYYY** The five "Y" signs following the slash sign must be replaced by the last five numbers of the order number.

Example:	Order no.	→	45023568
	Code	→	23568

Example:        **1118/23568**

UI File Number:    **EZZZZZZ**

**ZZZZZZ**    The six "Z" following the E stand for the UL File Number of the manufacturing plant.

Example:        **E227899**

If no position is provided for the UL file number in the data set by SIEB & Meyer AG (e.g. in old data sets), the position can be chosen as required. If no free space can be found, for example on small boards, use the panel edge.

The board labeling is mandatory.

## 17. Packaging

All orders with more than 20 panels or single boards shall be delivered in vacuum-packed packages of 20 units each. If the weight of the packaging unit increases 5 kg, the order or residual amount of less than 20 boards per panel must be packed in units of 10 boards per panel each. Residual amounts of less than 10 units shall be delivered in an extra packaging unit.

A visible label must be placed on every packaging unit showing the SIEB & MEYER AG order number (450...), the material number with board version, the quantity in panel, the quantity in pieces and the delivery date.

Alternatively, this information can be printed on a product leaflet enclosed in the packaging and visible from the outside.