

This work instruction describes the requirements to be met by PCB manufacturers for panel design.

1. Specifications for Panel Design

The size of the panel and the arrangement of the individual patterns within the panel are defined by SIEB & MEYER AG via the Gerber File.

1.1. Panel Surfaces

The free panel surfaces on outer layers shall be flooded completely with copper. A grid with lines and points is allowed for inner layers.

1.2. Panel Edge

The panel edge shall remain free of copper in a width of 0.5 mm (see figure 1)

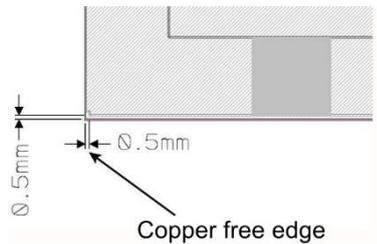


Figure 1 (copper-free edge)

1.3. Panel Corners

The panel corners shall be rounded with a radius of 1 mm (see figure 2).

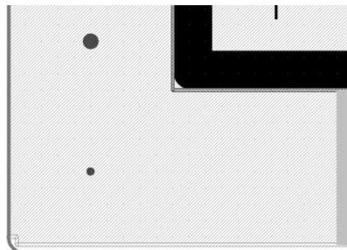


Figure 2 (rounded edge)

1.4. Panel Contour

The panel contour shall be routed.

1.5. Break-off Areas (If Routed)

The position and type of the **break-off areas** is defined by SIEB & MEYER AG. Figure 3 shows the interruption of the routing contour.

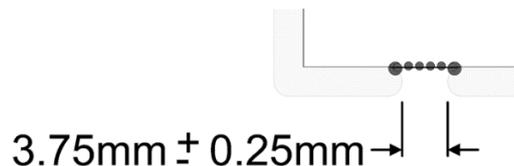


Figure 3 (break-off area)

1.6. Scoring Specifications

Observe the 1/3 rule:

Score 1/3 from the top side – leave 1/3 residual web – score 1/3 from the bottom side

Example: PCB 1.5 mm -> 0.5 mm residual web

PCB 2.0 mm -> 0.65mm residual web with a tolerance of: +/-0.1 mm each

Notch angle: $30^{\circ} \pm 5^{\circ}$

Offset between the top and the bottom score: < 0.1 mm

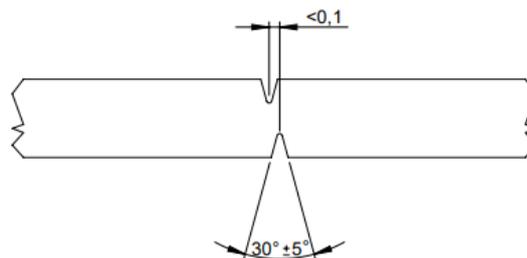


Figure 4 (Scoring PCB)

2. Check Coupons for Quality Control

2.1. Measuring Surface for the Thickness of the Metal Layer

The measuring surface for the thickness of the metal layer shall be placed somewhere in the edge of the panel. Figure 5 shows the dimensions of the measuring surface.

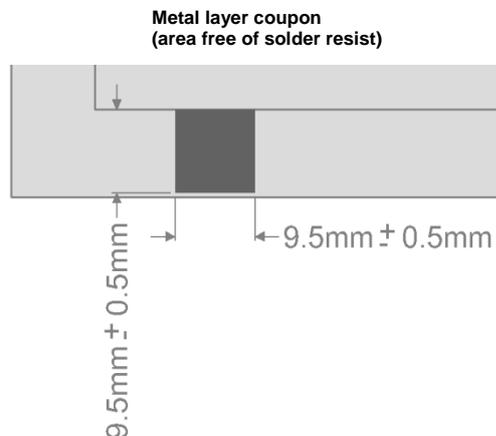


Figure 5 (measuring surface)

2.2. Check Surface for Layer Structure

The check surface for the layer structure shall be placed somewhere in the edge of the panel. For this, all layers must be guided outside the panel to allow final grinding.

2.3. PT Holes (Plated through holes = metalized holes)

All hole diameters of this type shall be done with a soldered eye (circular, with 0.3 mm diameter) into the panel edge. This row of holes shall be placed with ascending or descending hole diameters somewhere in the edge of the panel.

2.4. NPT Holes (Non-plated through holes)

All hole diameters of this type shall be placed in the edge of the panel. This row of holes shall be placed with ascending or descending hole diameters somewhere in the edge of the panel.