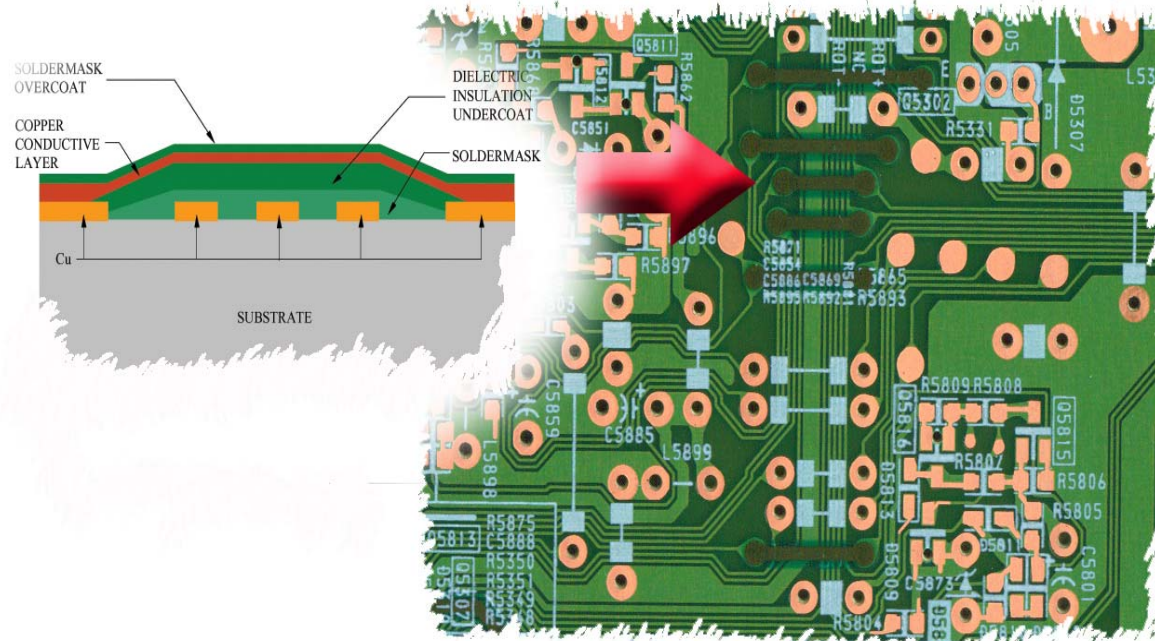
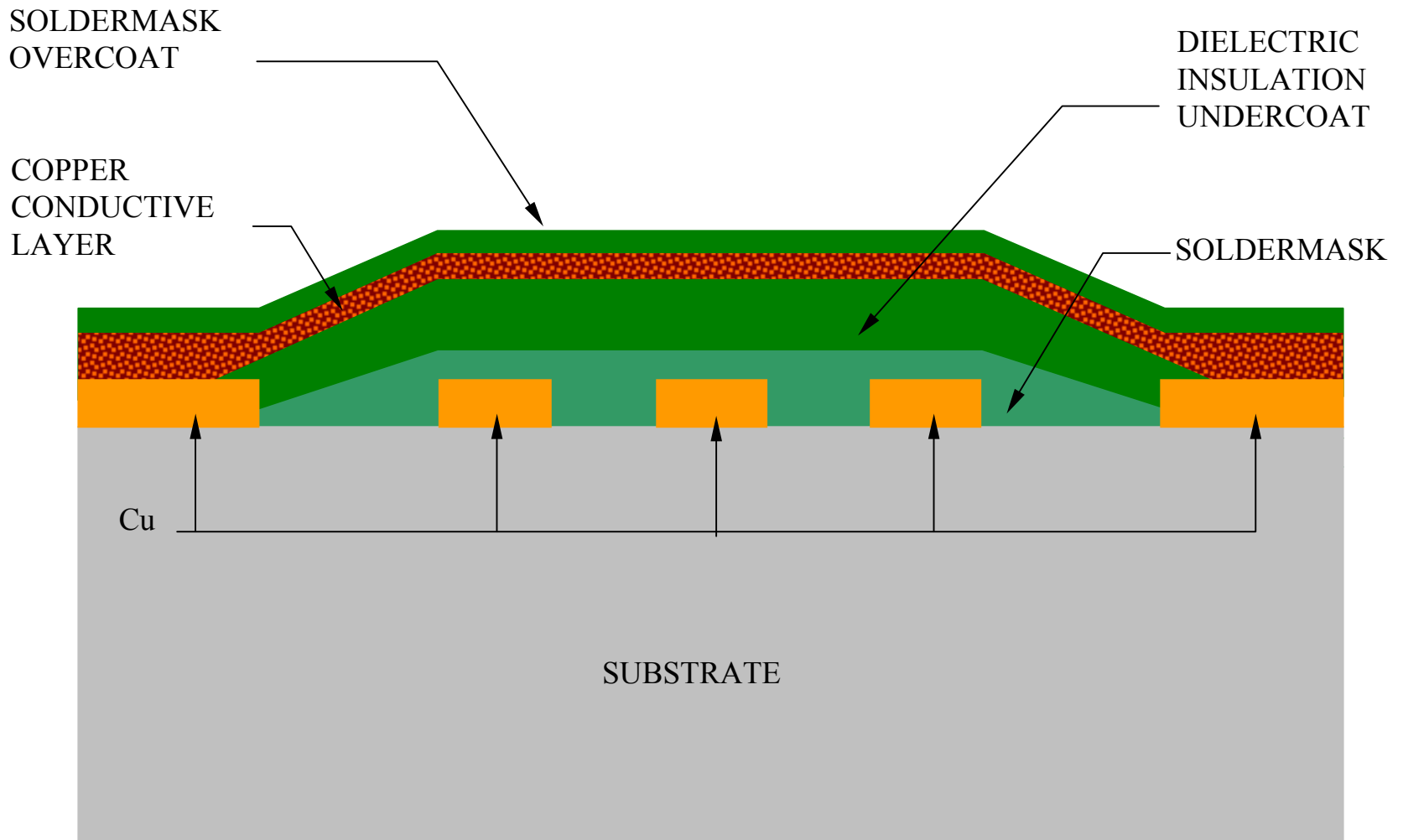
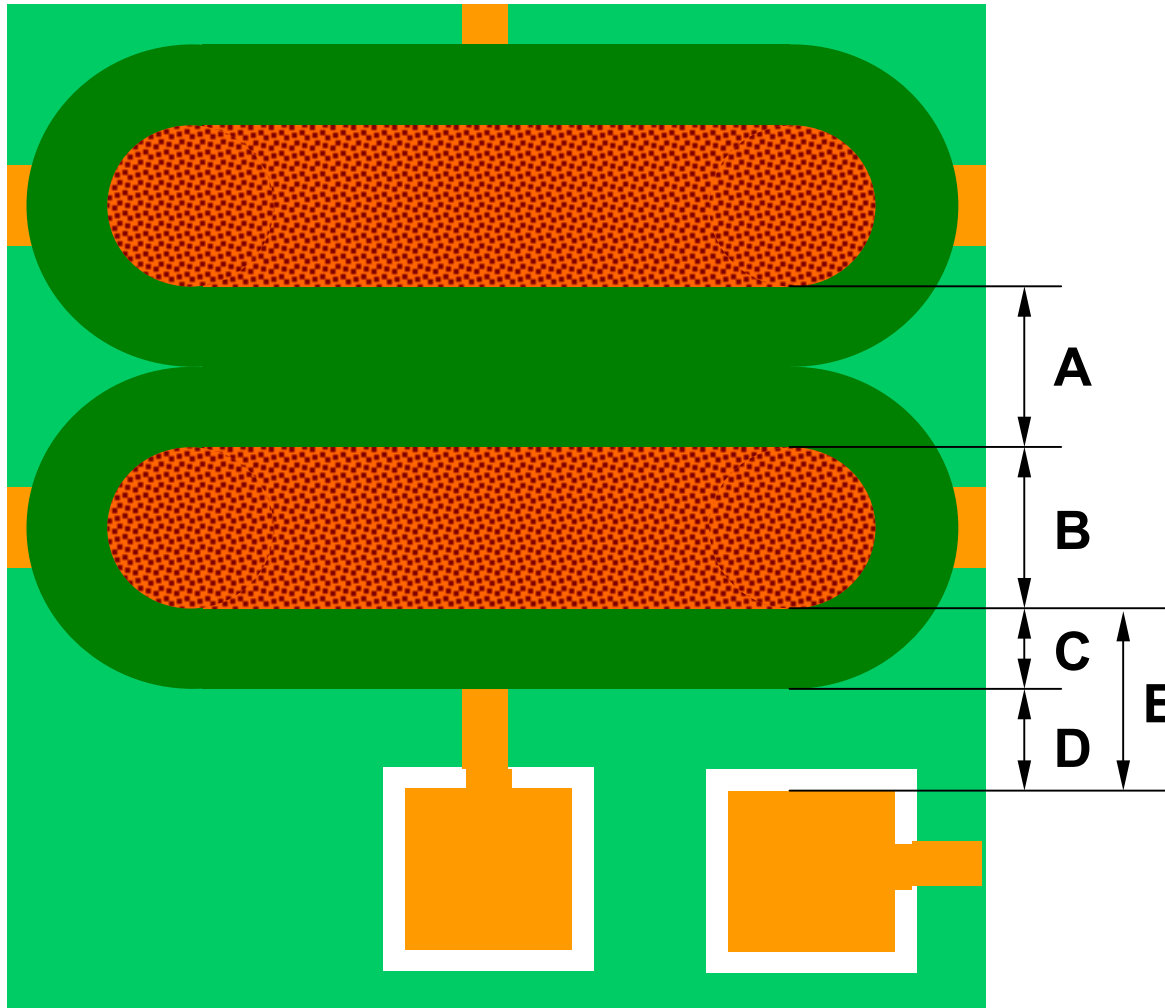


GUIDE LINES FOR COPPER CROSS OVER PCB TECHNOLOGY

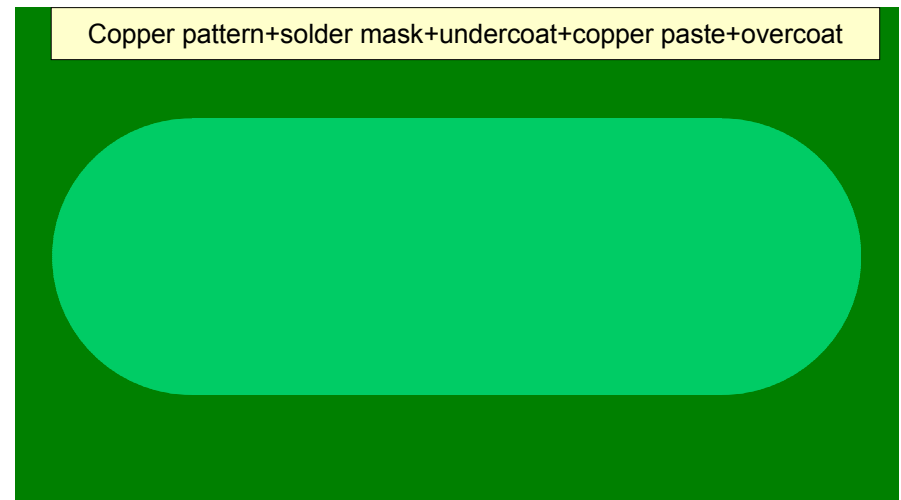
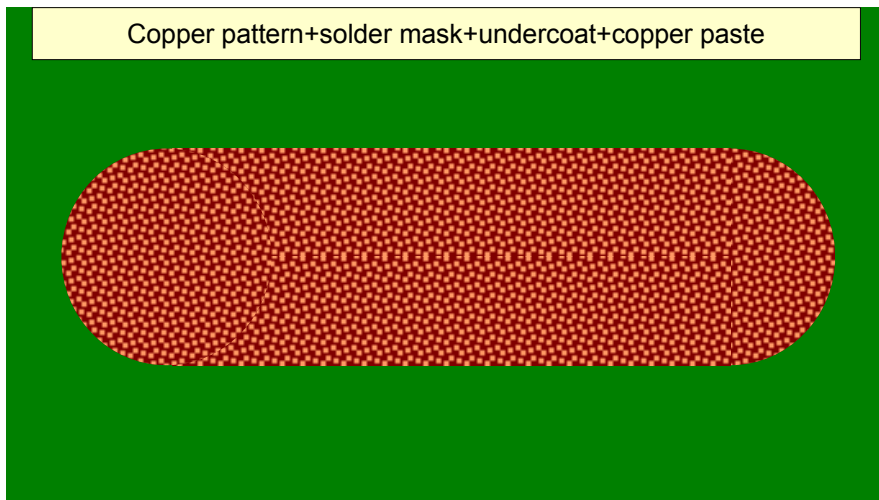
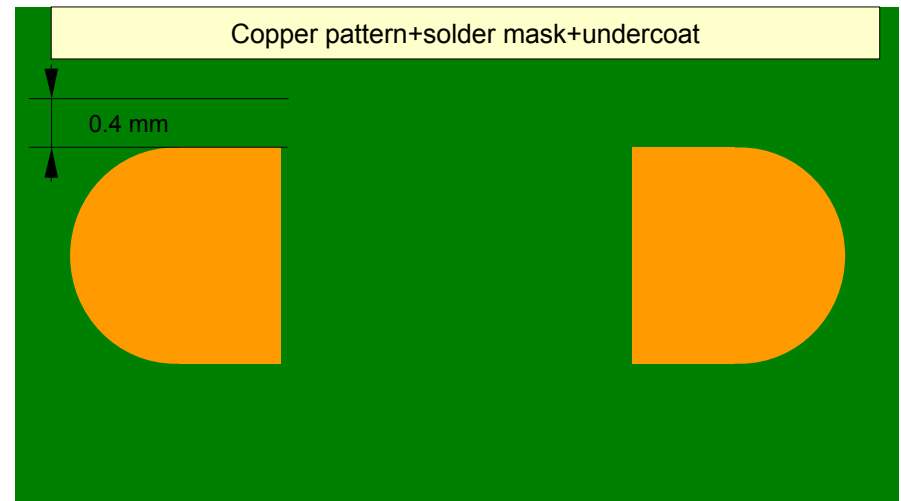
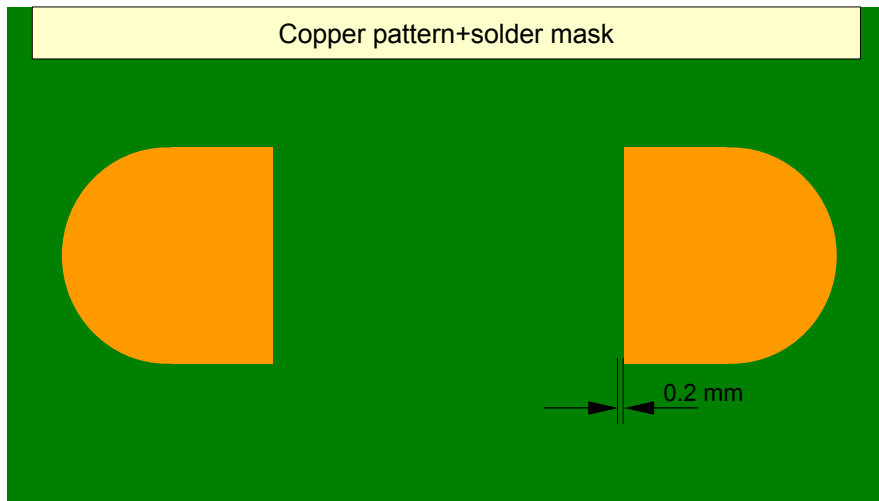


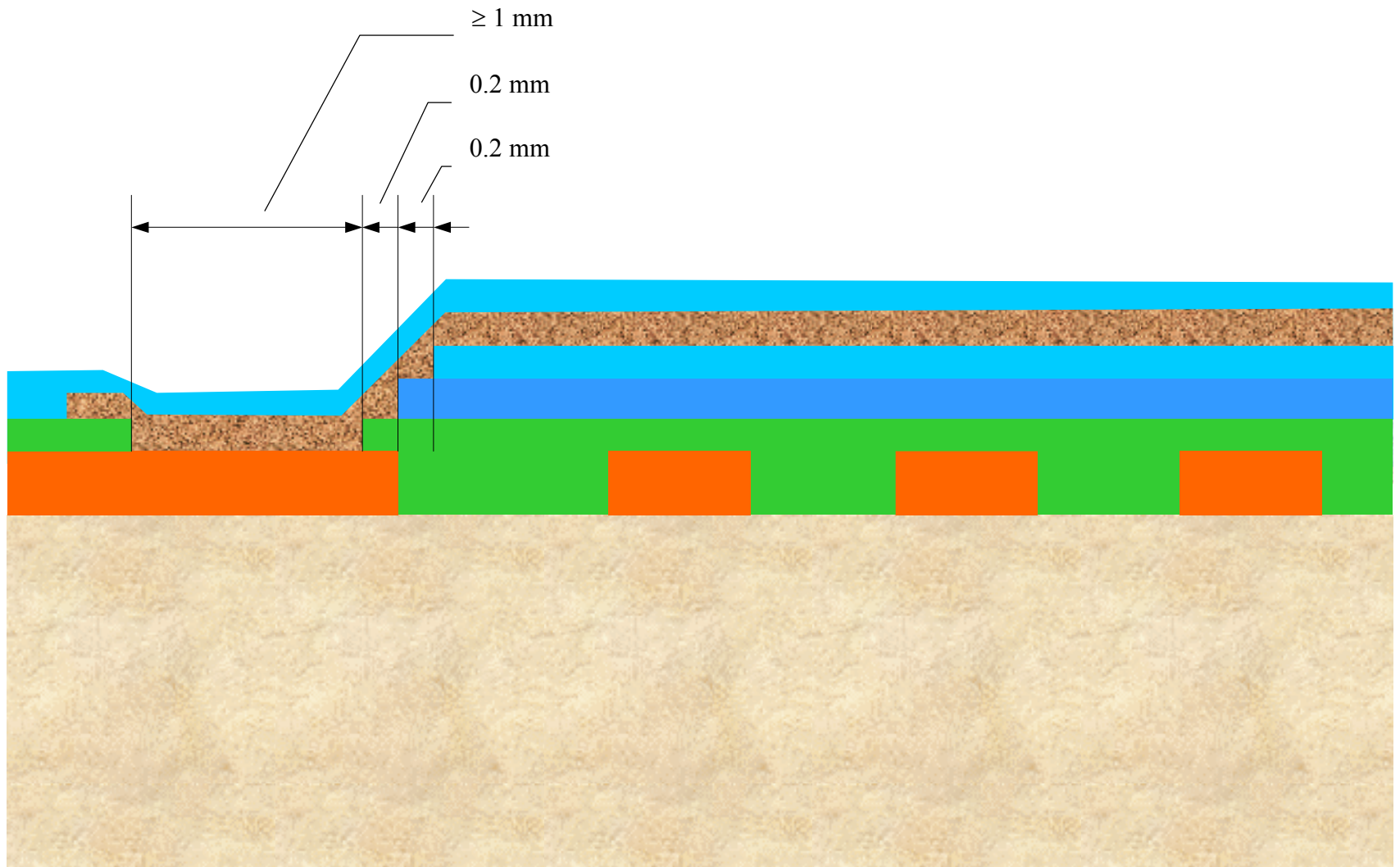
TECHNICAL DESIGN RULES

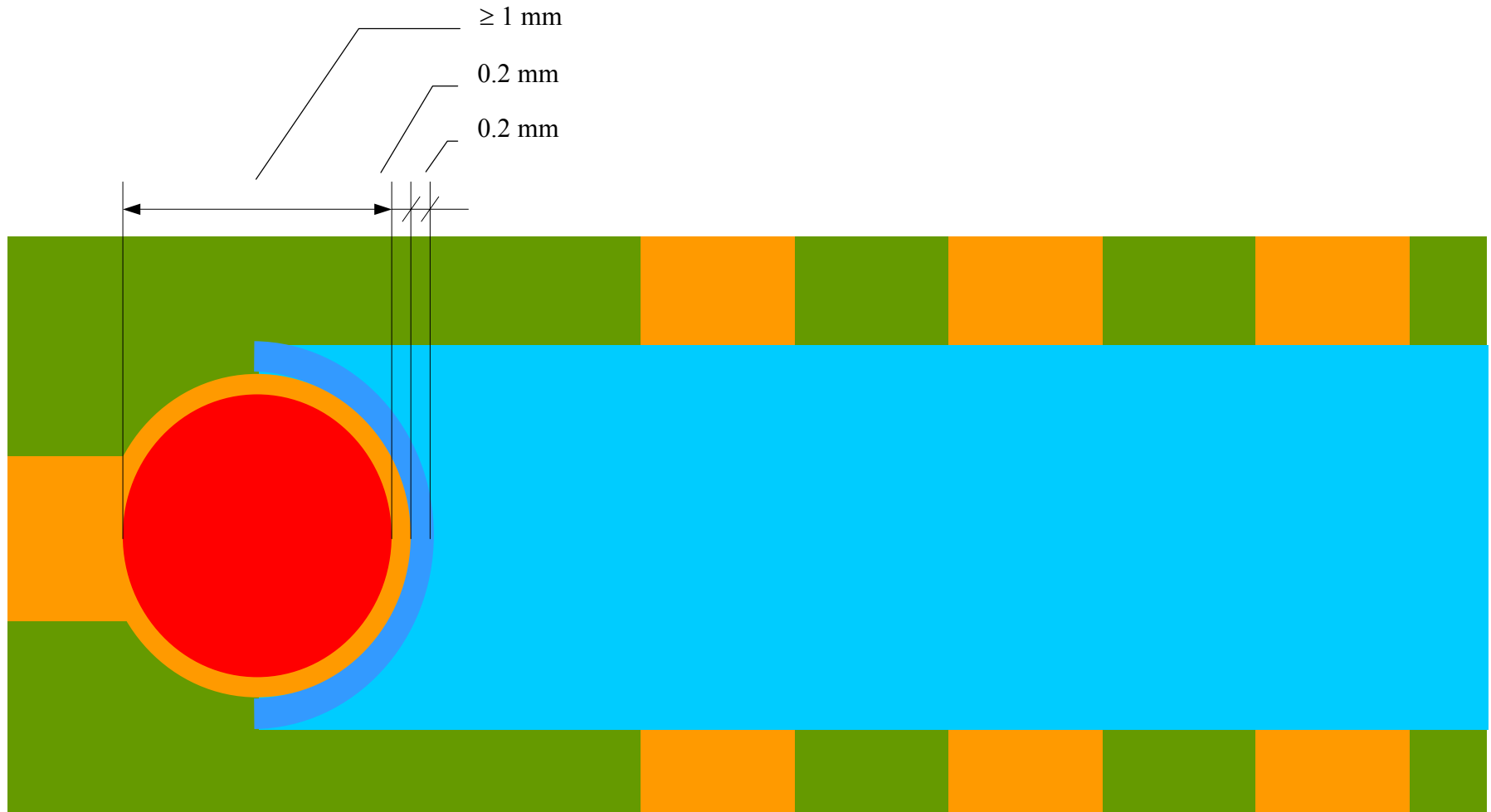


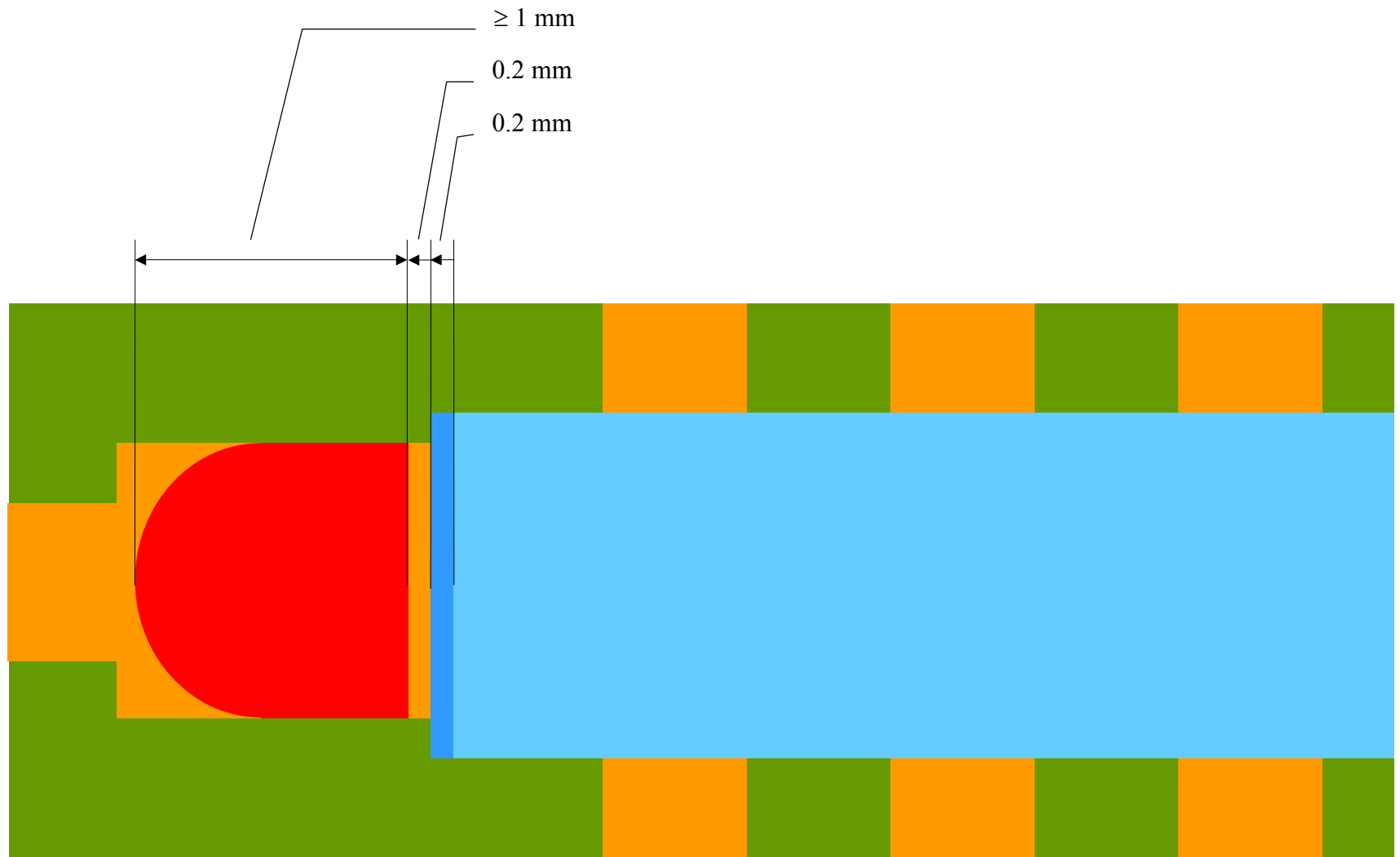


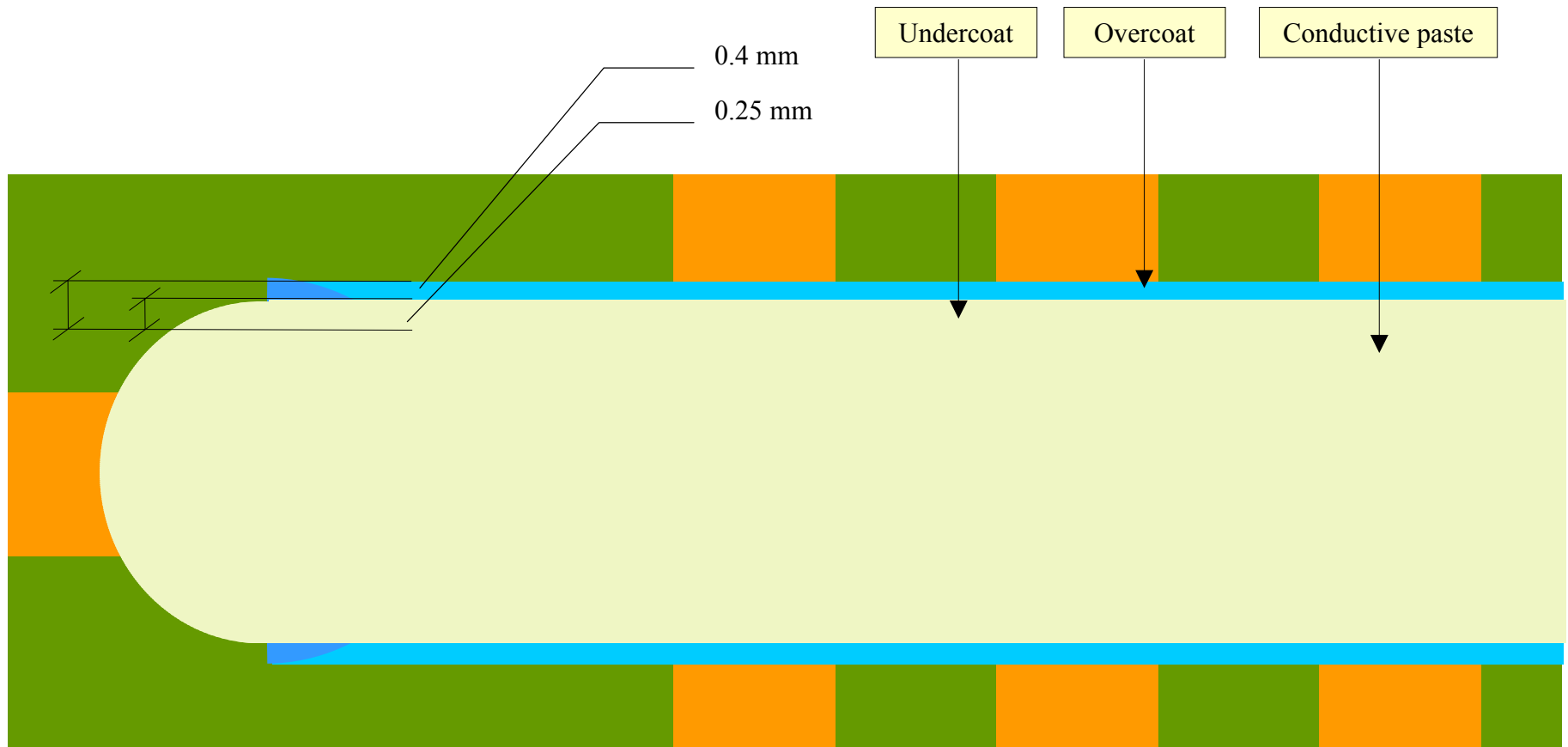
MINIMUM DIMENSIONS		
CODE	DESCRIPTION	DIMENSION (mm)
A	$CCO \div CCO$	1
B	WIDTH CCO	1
C	$CCO \div UNDER COAT$	0,4
D	$UNDER COAT \div Cu$	0,25
E	$CCO \div Cu$	0,7

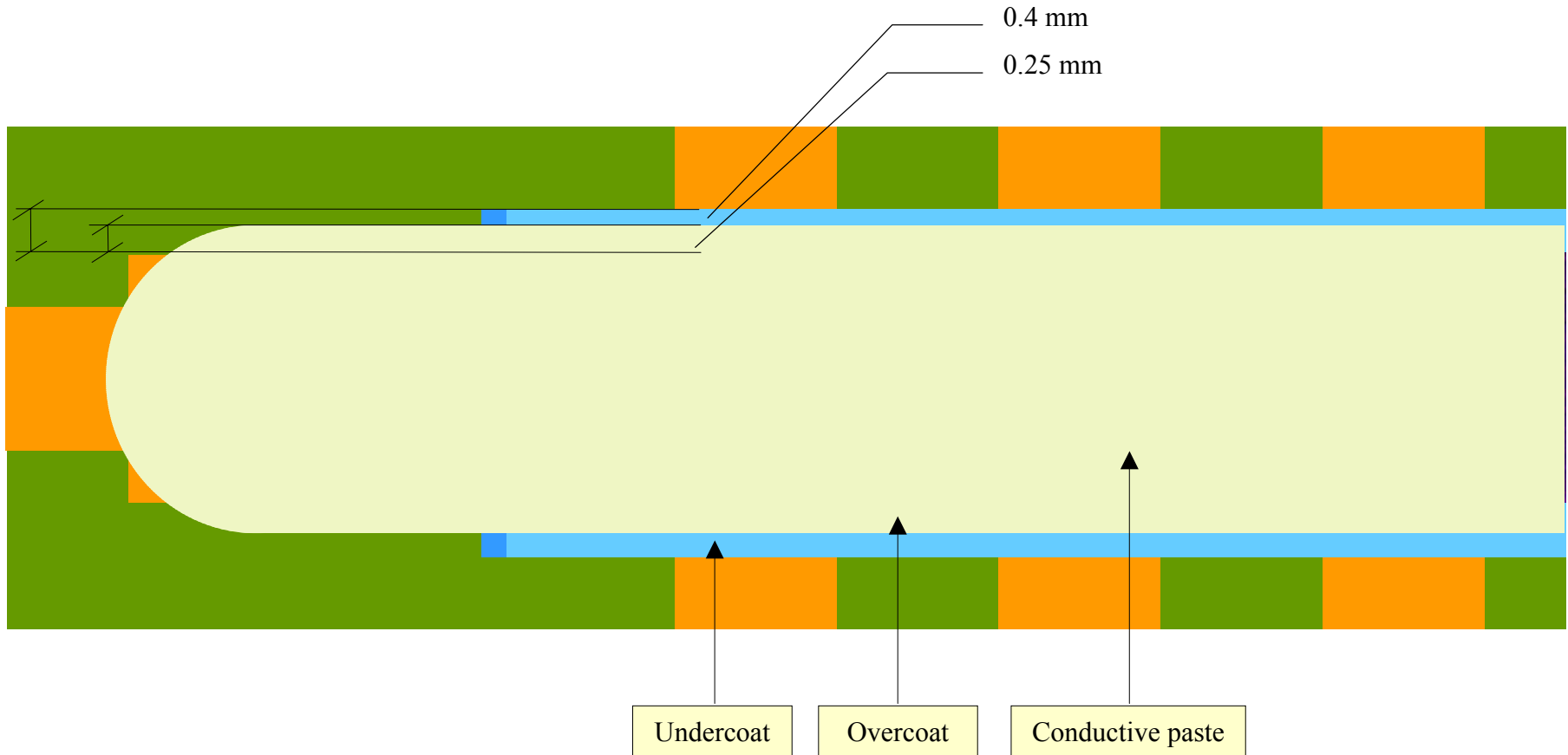


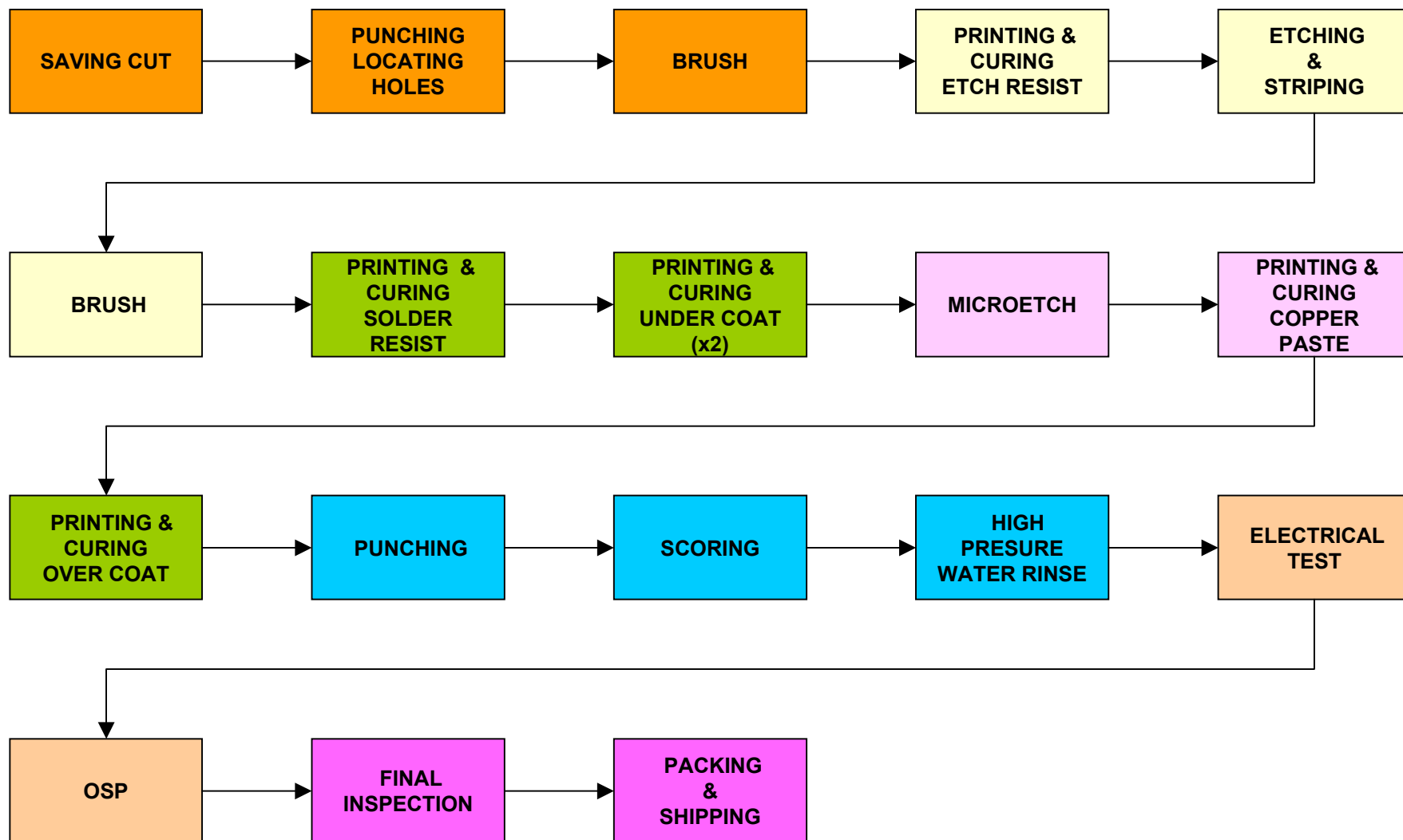












- **Raw material**
 - **ANSI grade**
 - FR-2, FR-1 : Ok.
 - FR-4, CEM-3, CEM-1, FR-3 : Possible but not recommended.
 - **Thickness**
 - 1.2 ÷ 1.6 mm
 - **Copper thickness**
 - 35 µm
- **Lay out**
 - **Screen printing + UV curing**
- **Solder resist (under & over coat)**
 - **Screen printing + UV curing**
- **Copper paste**
 - **Screen printing + hot air oven**

- **Electrical**

- **Solder mask**

- Thickness: $15 \pm 2 \mu\text{m}$
 - Insulation resistance: $> 1\text{E}9 \Omega$
 - Dielectric Breakdown: $> 650 \text{ VAC}$

- **Copper Paste**

- Thickness: $20 \pm 5 \mu\text{m}$
 - Resistivity: $\leq 35 \text{ m}\Omega / \text{Square}$
 - Current capacity: $A = 1 / (2x\Omega)$

- **Environmental**

- **Solder dip**

- 260°C , 20 sec., 10 cycles $\Delta R < 40 \%$

- **Boiling test**

- 100°C , 2 hours $\Delta R < 10 \%$

- **Pressure cooker**

- 121°C , 100 %RH, 2 atm, 8hours $\Delta R < 4 \%$
 - 121°C , 100 %RH, 2 atm, 24hours $\Delta R < 24 \%$

- **Thermal aging**
 - 85°C, 2000 hours $\Delta R < 30$
%
- **Heat humidity**
 - 60°C, 95 % RH, 2000 hours $\Delta R < 45$
%
- **Thermal cycling**
 - (-60°C, 10 min + 120°C, 10 min) x 300 cycles $\Delta R < 30 \%$
- **Mechanical**
 - **Adherence**
 - Tesa Tape **GT 0 (100 %)**
 - Pencil scratch **> 5H**
 - **Bending**
 - Specimen 100 mm long
 - Bend ± 5 mm up&down x 10 times $\Delta R < 5 \%$