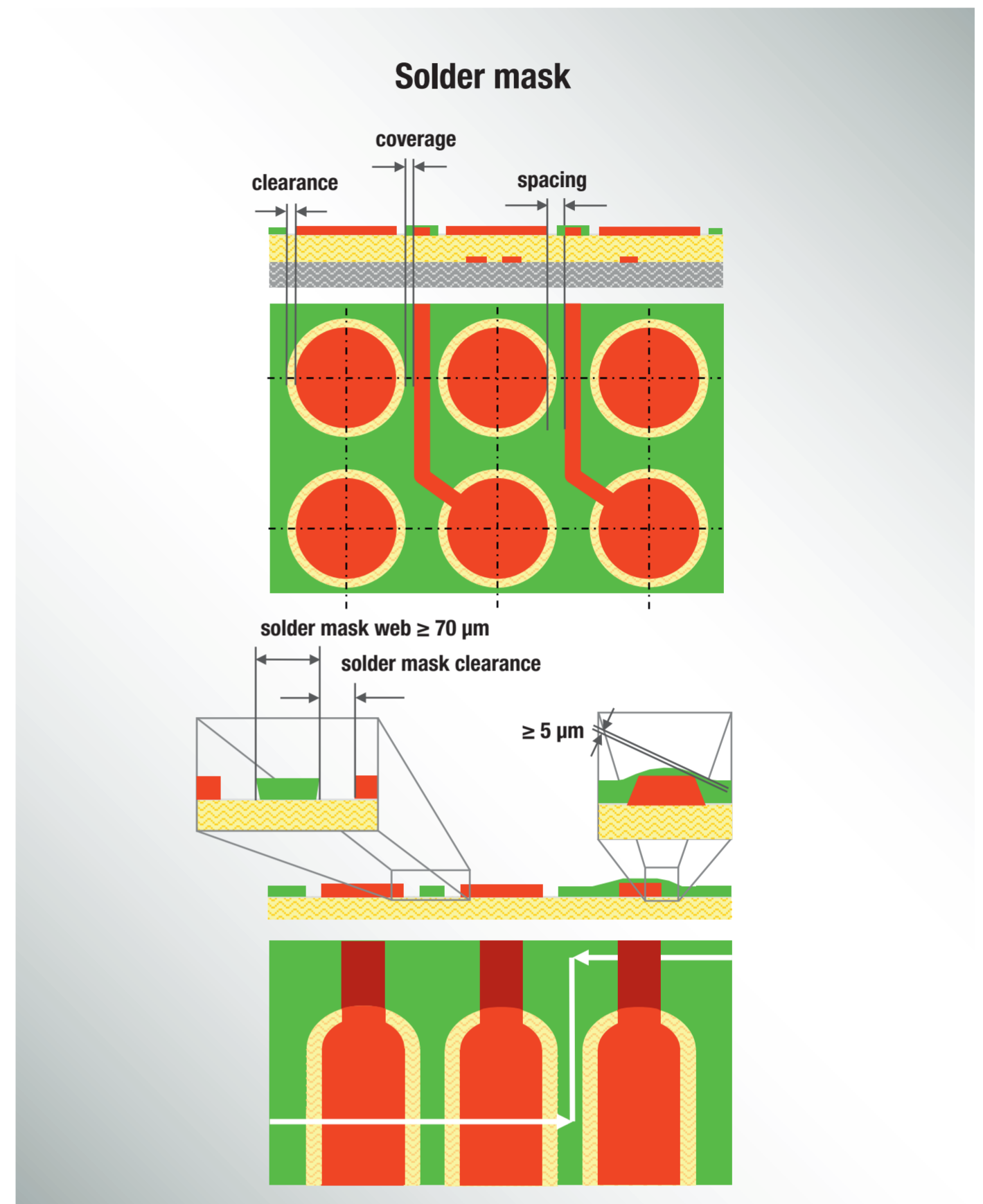
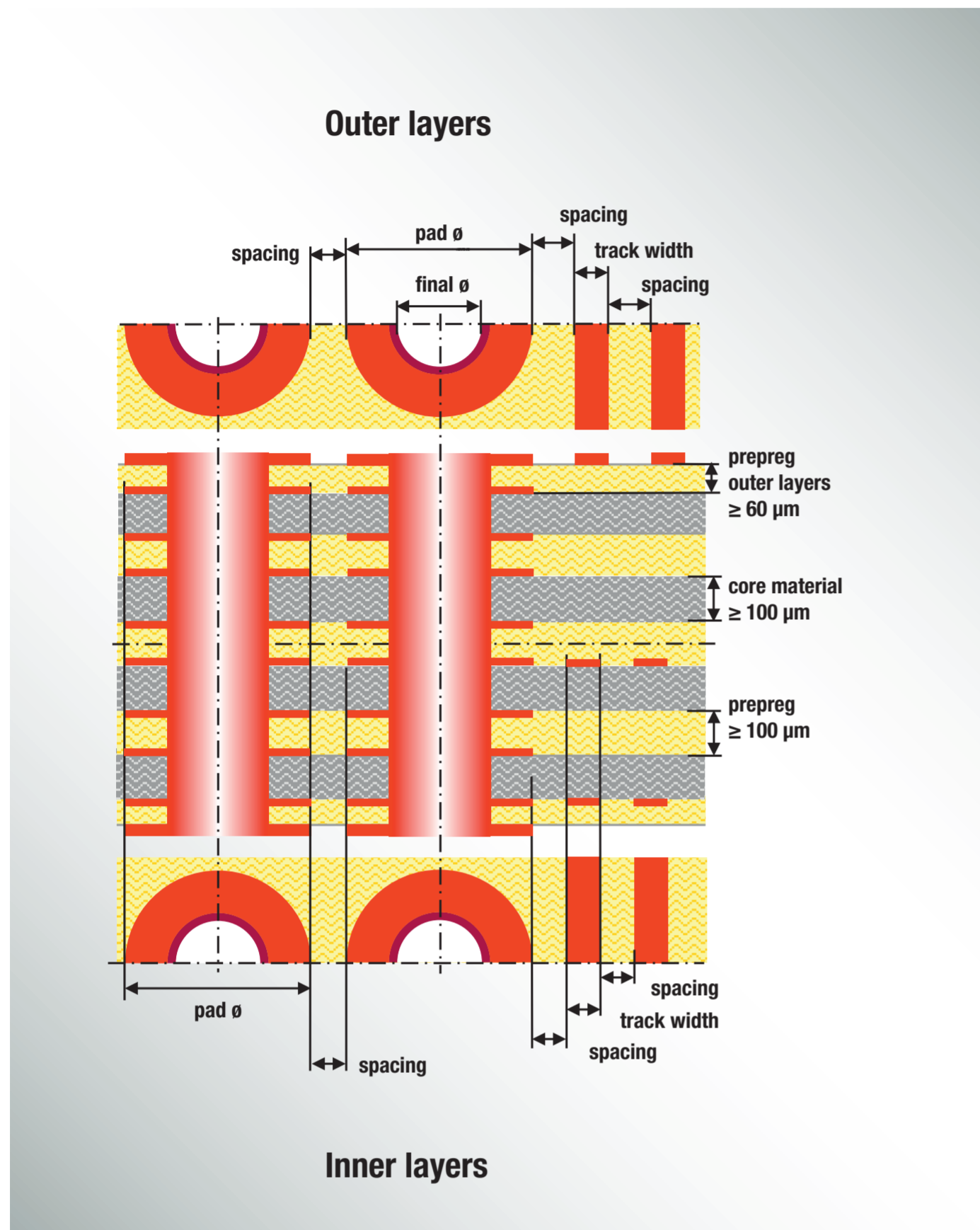


Basic Design Guide



Outer layers – Track width and conductor spacing		
Final copper thickness	Track width	Spacing
ca. 50 μm <small>> 33.4 μm (PC-6012)</small>	100 μm	100 μm
70 μm	125 μm	160 μm
105 μm	150 μm	225 μm
ca. 25-30 μm ¹⁾	75 μm ¹⁾	75 μm ¹⁾

Inner layers – Track width and conductor spacing		
Final copper thickness	Track width	Spacing
17.5 μm / $\frac{1}{2}$ oz/ft ²	100 μm 75 μm ¹⁾	100 μm 75 μm ¹⁾
35 μm / 1 oz/ft ²	100 μm	100 μm
70 μm / 2 oz/ft ²	125 μm	150 μm
105 μm / 3 oz/ft ²	175 μm	225 μm

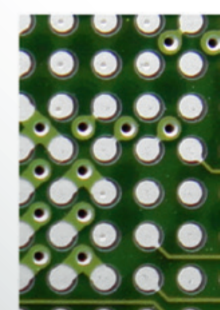
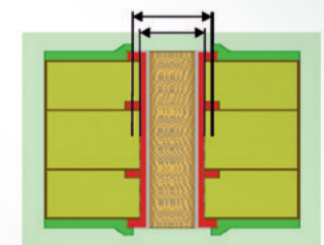
¹⁾ Technically possible. Due to cost reasons only advisable when absolutely necessary.

Solder mask		
	Standard	Advanced
Clearance	$\geq 50 \mu\text{m}$	35 μm
Coverage	50 μm	40 μm
Solder mask web	$\geq 70 \mu\text{m}$	–
Via-opening	See table below	

Manufacture without solder mask clearances involves additional effort and is not recommended due to quality reasons.

Solder mask opening for PTH vias

$$\text{solder mask clearance} = \text{MC drill tool diameter} + 0,15 \text{ mm MC}$$



Plated through hole vias						
Pad size	Note	Drill tool	Final hole diameter	Tolerance (Standard)	Copper clearance inner layer plane without pads	Solder mask opening
0.60 mm	Preferred	0.35 mm	0.25 mm	+0.10/ -0.05 mm	$\geq 0.80 \text{ mm}$	$\geq 0.35 \text{ mm}$
0.55 mm		0.30 mm	0.20 mm		$\geq 0.75 \text{ mm}$	0.45 mm
0.50 mm (Cu max. 35 μm)	Max. 12 layers Max. ca. 1.80 mm board thickness	0.25 mm	0.15 mm		$\geq 0.70 \text{ mm}$	0.40 mm
0.45 mm (Cu max. 35 μm)	For stack-ups with lower complexity	0.25 mm (0.20 mm)	0.15 mm		$\geq 0.70 \text{ mm}$	0.35 mm

General Note: Enhanced design rules are often possible with consultation!

Further design parameters	
Conductive pattern	
Copper clearance to routed board edge	$\geq 0.23 \text{ mm}$
Copper clearance to scored board edge	$\geq 0.45 \text{ mm}$ for board thickness 1.60 mm
Copper clearance to NPT hole	$\geq 0.25 \text{ mm}$ circumferential

Further design parameters	
Legend print (Cu max. 70 μm)	
Line width	100 μm
Font size	1.50 mm
Distance to solder mask opening	100 μm