

# Minimum Through-Hole Solder Joint Requirements • Class 3



Shown below are the minimum acceptable conditions for a Class 3 Plated-Through Hole Solder Joint. All of the illustrations show the same solder connection from three different views: top, barrel (cutaway), and bottom.

Any Class 3 solder connection failing to meet these minimum requirements should be considered unacceptable.

References: IPC-A-610D and IPC J-STD-001D

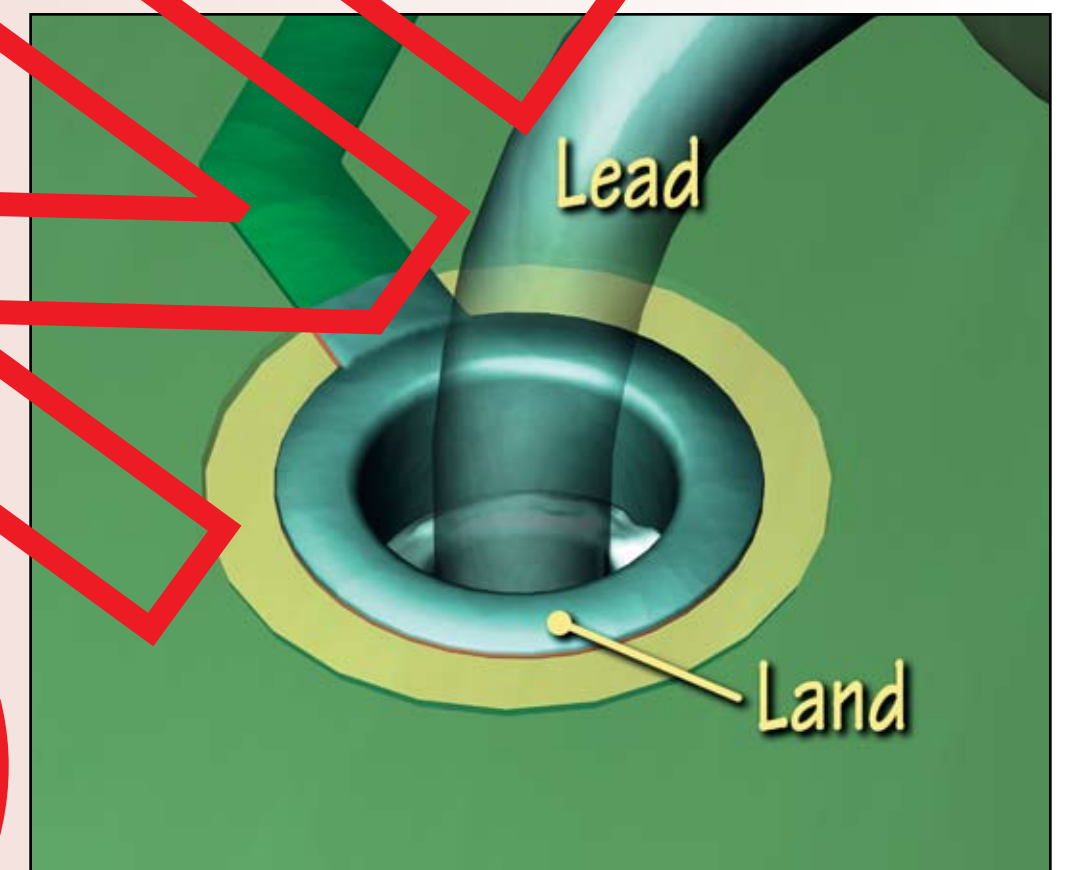
**COMPONENT SIDE**  
(PRIMARY, TOP)  
SOLDER DESTINATION



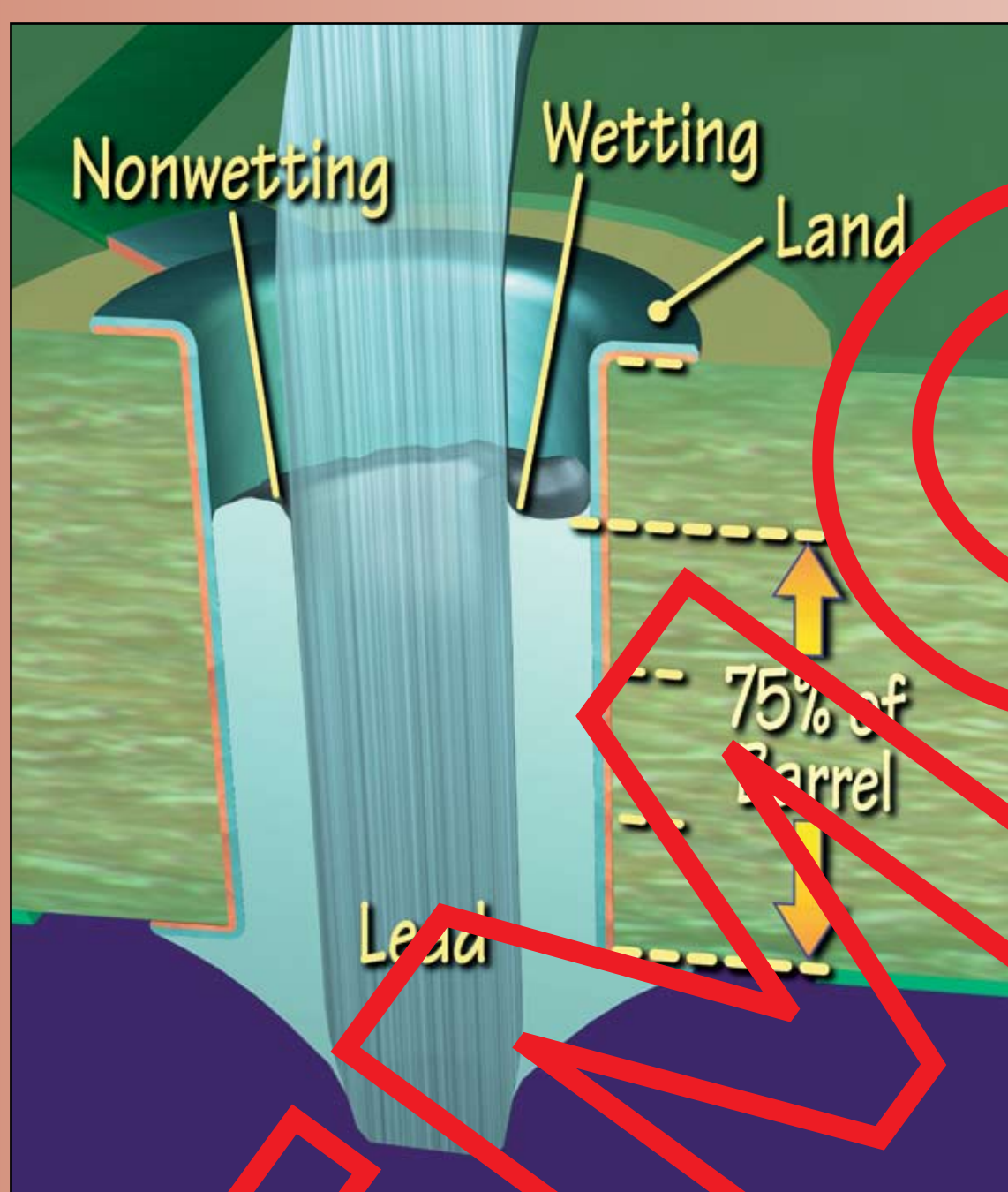
**Wetting of component side**

**land = 0%**

A properly wetted solder joint on the top or component side land is not required.



**CUTAWAY VIEW**  
(BARREL)



**Vertical fill of**

**barrel = 75%**

Solder must fill at least 75%, or 3/4 the height of the hole.

**Wetting of component side**

**lead & barrel = 270°**

A properly wetted solder fillet must circle at least 270° (or 3/4) of the way around the lead and barrel.

The remaining 90° of the solder connection may exhibit non-wetting, but it must fill the hole to the same height (75%) as the properly wetted solder.



**SOLDER SIDE**  
(SECONDARY, BOTTOM)  
SOLDER SOURCE



**Wetting of solder side**

**lead & barrel = 330°**

The wetting on lead and barrel must be at least 330° (approx. 90%).

**Wetting of solder side**

**land = 270°**

A properly wetted fillet must extend at least 270° (or 3/4) of the way around the land on the bottom or solder side of the board.

