Minimum Through-Hole Solder Joint Requirements • Class 3

Association Connecting Electronics Industries

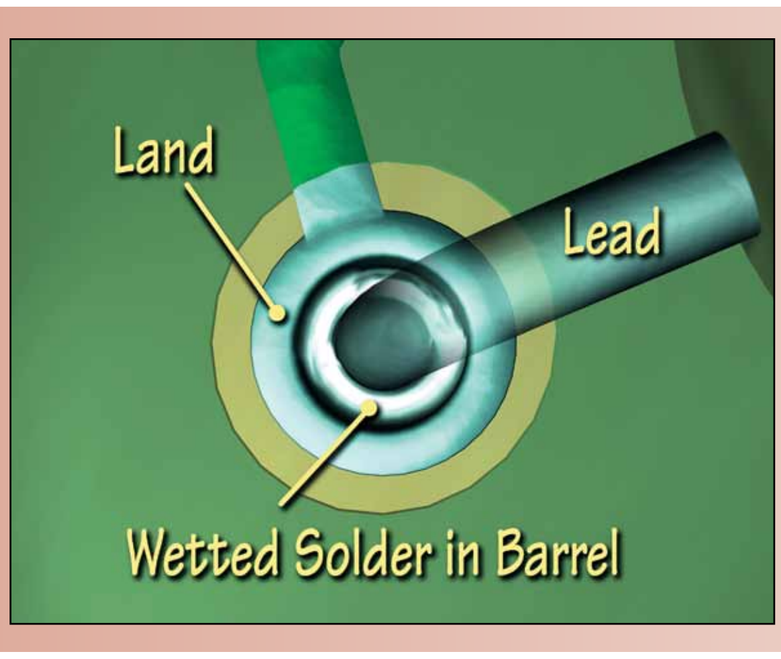
IPC®

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.

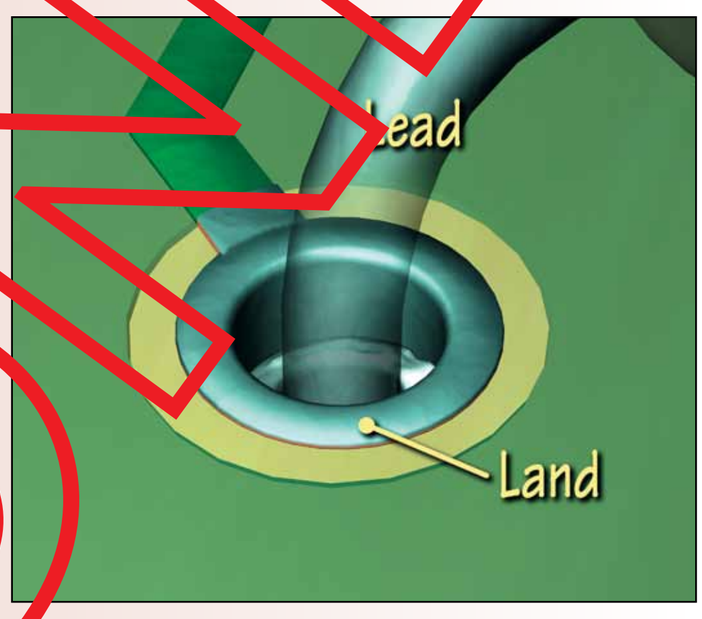
*References: IPC-A-610**E** and J-STD-001**E***

COMPONENT SIDE (PRIMARY, TOP) SOLDER DESTINATION

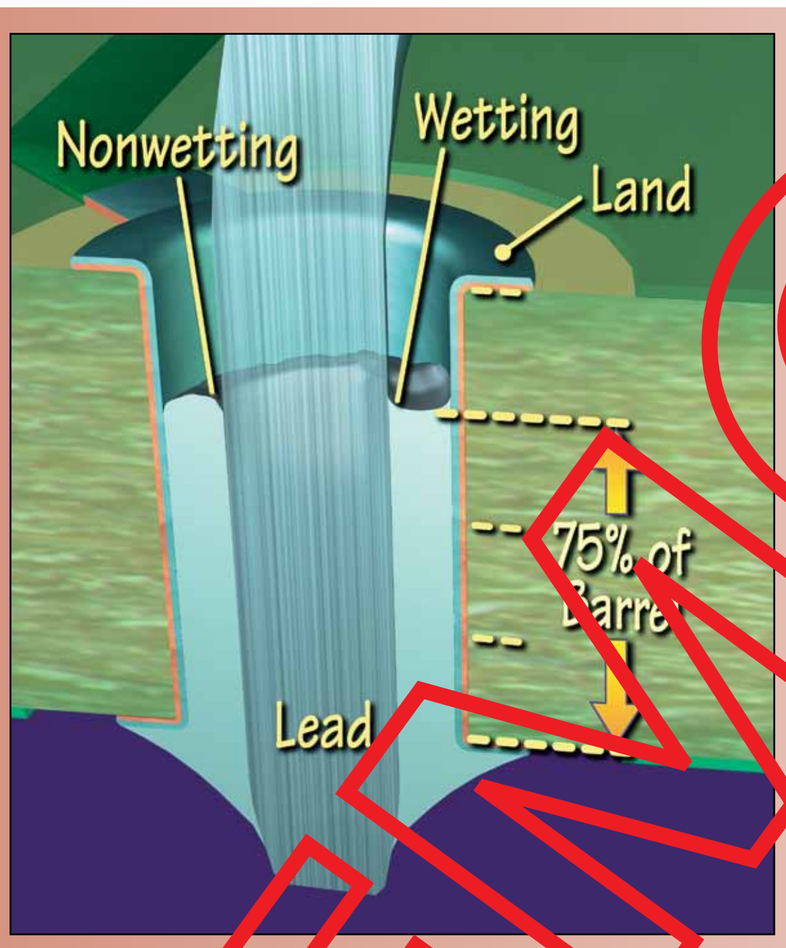


Wetting of component side land = 0%

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



CUTAWAY VIEW (BARREL)



Vertical fill of barrel = 75%

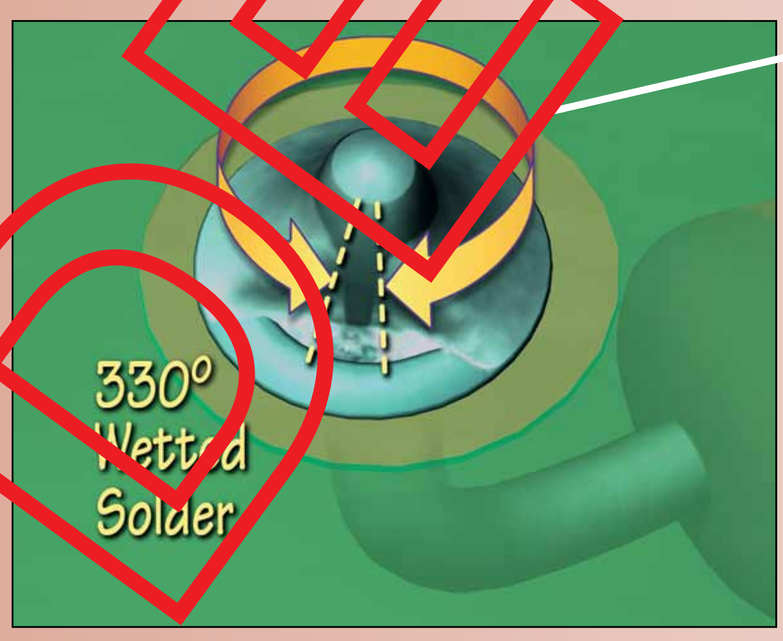
Solder must fill at least 75%, or 3/4 the height of the hole.

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

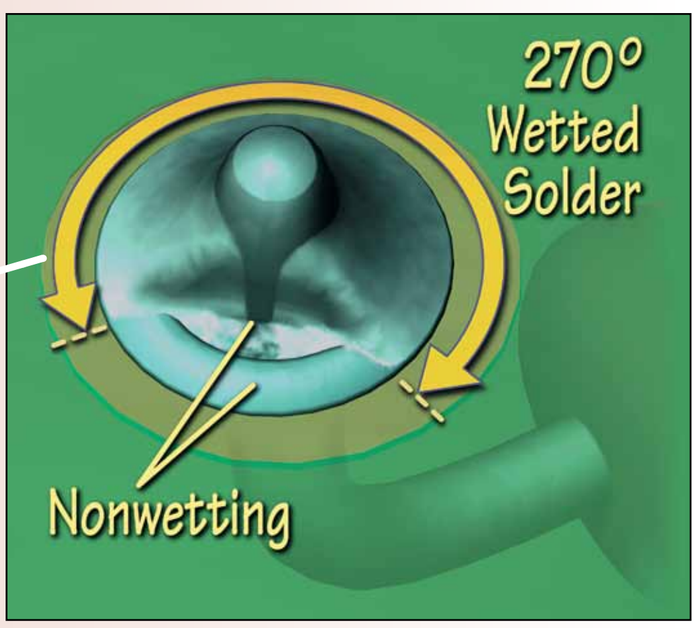


Wetting of solder side lead & barrel = 330°

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.



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