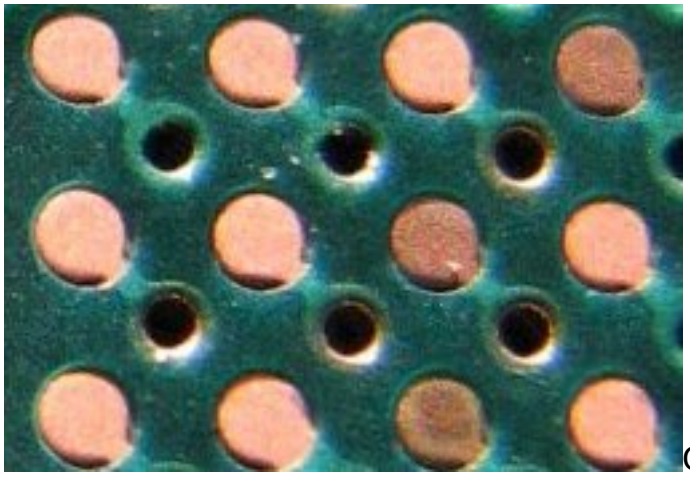
And What Is Wrong Is...

Screaming Circuits



Quick. If you haven't had your chance to answer the question, go back [1] and read it first.

Done? Okay.

#1. This is an OSP (Organic Surface preservative [2]) finished PCB. That in itself isn't a problem. However, take notice of the two different colors of pads. The darker pads are oxidized or otherwise contaminated - not a well preserved surface. And that means that this board isn't going to work.

#2. Oops. I already answered #2 in with my answer to #1. It's got some oxidized/contaminated pads. Perhaps the PCBs weren't stored properly, were kept too long or the OSP finish wasn't well applied at the fab house.

#3. Planet ten

#4. Real Soon.

And, no it can't be used as is. The solder most likely just wont take on those bad pads.

A couple of other notes: The mask registration isn't bad. Not perfect, but not bad. Big pitch BGAs like this do tend to work best with NSMD (non solder mask defined) pads like this. That allows the BGA ball to sag down a bit and grasp the side edges of the copper pad for improved adhesion. (Note that for extra fine pitch BGAs [3], like 0.4mm pitch, you need soldermask defined pads) And, note that there is a good web of soldermask between the pad and the via. This will keep the solder from being sucked down the via.

Duane Benson
I've been ionized, but I'm okay now

SOURCE [4]

Source URL (retrieved on *06/18/2013 - 2:46am*):
http://www.ecnmag.com/news/2010/07/and-what-wrong

Links:
[1] http://blog.screamingcircuits.com/2010/07/whats-wrong-with-this-picture.html
[2] http://blog.screamingcircuits.com/2008/02/osp-pcb-finish.html
[3] http://blog.screamingcircuits.com/2010/06/extra-fine-pitch-bga-pads.html
[4] http://blog.screamingcircuits.com/2010/07/and-what-is-wrong-is.html