

Q & A

THE Q & A FORUM at www.shotpeener.com is the ideal place to get advice on a wide range of topics from industry leaders and colleagues from around the world that have tackled and solved your challenges.

You don't need to register to browse the forum. If you would like to post or respond to a post, however, you do need to register and it's very simple to do. The following are a sampling of the forum's posts. Maybe you will find an answer here to an issue you're facing.

Fluoro-Finder/Peenscan Assistance

Questioner: There are two types of Peenscan pens available, which stipulates Peenscan 220-2 pen for lower peening intensities and 220-6 pen for higher peening intensities.

In addition there is Fluoro-Finder III Tracer which only seems to come in one type.

We would prefer to use the latter as it enables us to get into all areas. But is there any guidance on usage based on is it is high or low intensity peening? The ranges we do are as follows:

6-9A 10-14A
14-20A 6-8C
10-16C 16-18C

Answerer #1: Nice question, the same my problem now. Could anybody give us some advice on this.

Answerer #2: Hi, I suppose you already tried the fluoro finder III by now.

My experience is that 6A is the lower limit for this and almost useless on the N scale.

I've only tried with s-110/cw14. It's possible that bigger shots remove tracer at slower rate.

Answerer #3: In my experience tracer dyes work best on materials and intensities that are easiest to visually inspect at 10x.

Even if our customers require us to use one, we still look at the part under magnification. High-intensity peening on a hard part will result in more of the tracer coming off the part than just the impact area. Some materials will literally soak up the tracer making it very difficult to remove by peening. If peening alone is done to remove the dye, then the part in all likelihood will have several times 100% coverage. Doing so could potentially debit the fatigue life of the part. In my opinion tracer dyes are great tools for original set up to see if your process is peening the correct areas. But there is no substitute for visually inspecting the part at magnification of 7x-10x.

Dark Residue on Shot-Peened Surface

Questioner: Dear all, I am facing a problem of presence of dark residue on shot-peened surface. I don't have deep knowledge of this process so I apologize if the question is very basic.

Practically we are shot peening some parts made of Fe ARMCO or Nickle, but post shot peening if we rub a cotton bud on the surface it becomes dark. We are using glass beads type AGB10. My assumption is that this is because the glass beads are getting broken and leaving their residue. I tried to change the air pressure but nothing changed. Is it normal?

The parts that we are shot peening have to be in an X-ray tube so surface cleaning is very critical to us.

Answerer: Both nickel and Armco iron must have oxide coatings. Nickel oxide as Ni₂O₃ is black as is Fe₃O₄ on Armco iron. Peening produces nascent surfaces that readily convert to these oxides when exposed to air. Post-peening removal will reduce the thickness of the black coatings.

Questioner: Thank you for your response. I have proposed to add cleaning with Acetone or pure Alcohol in the process post-peening.

Is there any way to reduce or prevent this oxidation? Because addition of this cleaning will increase lead time of product.

Currently we are using 5 bar pressure AGB10 beads, but the distance between nozzle exit and part is not controlled and operator can move and rotate the part freely.

Answerer: I do not know of any way of preventing oxidation of non-noble metals—oxides must form when exposed to air. How about reverse thinking? Is the dark coating unacceptable to your customer? If it is being formed consistently then it is useful proof of coverage!

That is the reverse of using lacquer coatings that have to be blasted off to prove coverage.

Questioner: I understand. Well that means I must add a post-peening cleaning procedure. Just to add knowledge non-related to this topic: In X-ray tubes, the presence of any kind of pollutant can cause premature failure.

So high care is taken to clean each and every part which has to be inside of the tube. Here the part being shot peened is a focalizer which is inside of the tube. ●