More stones/plates for the WEPS - please weigh in!

Posted by razoredgeknives - 27 Jul 2012 00:25

So while I am in the process to find a good sharpening wheel to go on my variable speed bench grinder, I came across this.... (found here)

"Diamond and CBN wheels come in several bond types: Resin (most common), vitrified, metal and electro-plated. Resin is used in most tool room and production applications. Vitrified and metal bonds are newer bond types with specific applications (We won't go into a lot of detail with these as they are somewhat rare and more expensive and almost always are custom made special order items). Electro-plated wheels are very common and are typically found in cutoff wheels and low demanding abrasive grinding such as for plastics.

Resin wheels are made much like a traditional grinding wheel with a thick bond/grit layer usually between 1/16" and 1/4". Electroplated wheels are a much thinner thickness. In both cases, the bond layer is applied to a hub which is either aluminum or steel made to the specific profile required.

Like traditional grinding wheels, Diamond and CBN wheels are used in a variety of processes and with a variety of materials. Typically, diamond wheels are used strictly on carbides and CBN is used on steels. Some manufacturers produce a 'hybrid' wheel which is a special grit that will grind both steels and carbides (Typically used on parts that require grinding of carbide and steel at the same time). Plated diamond wheels are used on non-ferrous materials such as plastics, rubbers, nylons, fiberglass, etc."

So I guess my question is, why do we use diamond plates instead of some type of CBN plates... what is the difference? Would it make any practical difference in longevity of the plates or the actual edges themselves? Or does this only make a difference on a high speed wheel?

Those of you with experience in metallurgy, engineering, or just plain know how to do research (anthony... *ahem*) please weigh in on this and try to explain weather it would be a good idea to get some CBN plates mounted to the WEPS paddles or not... I found a company who can do it anyway =)

PS. i have seen some info lately on the atoma 140's mounted on WEPS paddles... it appears as if they work much better than the stock 50 grit, does anyone have any experience with this? I myself have noticed that even the 50's take a while on a knife that really needs to be re-profiled.

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Re: More stones/plates for the WEPS - please weigh in!
Posted by iamtwon - 27 Jul 2012 00:54

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www.gearsolutions.com/article/detail/549...oices-diamond-or-cbn

Super interesting read. According to this article, it seems CBN is better for high speed grinding because of thermal energy dissipation by the crystals of CBN that get micro-chipped off, exposing "new" and cooler material. Diamond seems better as a slower speed abrasive not having to worry about temperatures.

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Re: More stones/plates for the WEPS - please weigh in!
Posted by razoredgeknives - 27 Jul 2012 01:03

Thanks Anthony! Reading it now...

That makes a lot of sense though! Thanks for digging this up.

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Re: More stones/plates for the WEPS - please weigh in!
Posted by KenBuzbee - 27 Jul 2012 08:29

It's been discussed before, but I'd like to see mounted glass plates for PSA diamond lapping films.

Ken

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Re: More stones/plates for the WEPS - please weigh in!
Posted by StevenPinson - 27 Jul 2012 18:21

Hey Ken,

I am in the process of having just what you are asking for made. Here are some shots of the samples I have in house, two styles clear and a matte. I expect to have them for sale about this time next week

(August first or so). Contact me at sp36@yahoo.com for any questions you may have.

i1133.photobucket.com/albums/m599/SPIN1963/DSCN0156.jpg

SPIN

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Re: More stones/plates for the WEPS - please weigh in!

Posted by KenSchwartz - 13 Sep 2012 01:39

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Ken,

I already have glass plates for the WE. Just send me a PM regarding this.

Regarding CBN plates, The issue is when running wheels at high temperature vs diamond is that you get a reaction with diamond (which is a form of carbon) in that it can change the carbon concentration of the steel. For hand applications, this particular virtue of CBN as an advantage over diamond is not really an issue. For these applications you typically use monocrystalline diamond, simply because it doesn't break down showing fresh sharp edges like poly, but maintains it's shape so it is less likely to drop out of it's metal bond (nickel) matrix.

If any of you have a specific interest for CBN either in film form or plate form, please let me know as I do have a supplier for these. In general, I have a LOT more products than are displayed on the net and do custom applications for customers all the time. This includes a vast array of synthetic and natural stones, stops, etc.

Also note that CBN is more expensive than monocrystalline diamond and Poly is the most expensive of the three.

Ken

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