WE diamond stropping pastes - part 2 (or 3)

Posted by mark76 - 15 Apr 2012 10:51

I didn't want to ruin the stunning end of the previous thread on stropping compounds (and substrates, as it appeared). So I decided to start a new topic.

In my experiments with the Wicked Edge stropping pastes I had seen that they were very effective in smoothing scratches by means of burnishing. In this way they were amazingly effective after the 1600 grit stones, creating a very smooth surface.

A question I still had was where the pastes would fit in in a progression of stones/strops not based their burnishing power, but on the amount of abrasion they cause. In a previous blog post I had already seen that the 14 micron paste works fine after the 1600 grit stones (2.85 microns) and doesn't ruin the edge. However, the paste is abrasive, does cause scratches and at some point it will not improve the edge anymore. I wanted to know where that point was: what is the width of the scratches made by the Wicked Edge diamond pastes?

To determine this width, I took the best photographs of edges after stropping with the diamond pastes I could find. Then I cut out a tiny portion of each photograph, magnified it a number of times and counted the number of scratches on this area.

This appeared to be quite tricky, mainly because the scratches are so small. So if you conclude that it is just silly what I did, I won't argue with you. (Ok, not a lot :)

Nevertheless, I think the Wicked Edge pastes fit in nicely in a progression after the 1600 grit stones. Not only on the basis of their burnishing qualities, but also on the basis of their abrasive qualities.

You can read the full story here .

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by wickededge - 15 Apr 2012 11:45

Mark,

This is a great post and great idea, thanks for sharing it! For anyone wondering, visiting Mark's blog for the full write up is well worth the time.

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by Rlb - 19 Apr 2012 23:28

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Mark I was considering the same experiment! Thanks you save me some time, but maybe I missed out on a little fun? haha big ups man!

I also wanted to test out the conversion factor for diamond micron pastes to girt. I have heard a lot of things and I wanted to test the accuracy of them. Any thoughts or consensus on the conversion factor for pastes to girt?

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by mark76 - 22 Apr 2012 09:18

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Hey Rib, not a bad idea to do the same experiment! This is all so finicky that I wouldn't want to draw any strong conclusions from a single experiment.

The idea of a conversion factor from stropping compounds grits to stone grits sounds good, but I am afraid it is going to be difficult to realize.

First, some strops do more than simple abrade the edge of a knife. Due to their stiction they may also burnish it, i.e. smear out metal over a larger area.

Second, no two stropping compounds seem to be made the same. Some contain diamands, whereas others contain a less aggressive abrasive, like aluminium oxide. And even when they do contain diamonds, the concentration of these diamonds may vary largely. Or the specifications of the particle sizes may be incorrect. Ken has dome some extensive blog posts on this.

And even if the specs are the same and correct, the stropping pastes may work differently. I am just in the process of testing another one and boy, they continue to surprise me

An idea I have played with myself is not so much a “conversion factor”, but an abrasion comparison chart. This would be much like the grits comparison chart . However, it should better take into account the abrasion the various stones, strops and stropping compounds cause. After all, it is their effect on the edge we are doing all this sharpening work for, not the various diamonds, oxides, carbides or whatever are in the stones/strops/compounds.

However, I don’t know yet how to do this . So if you’ve got any ideas...

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by mark76 - 25 Apr 2012 15:37

I managed to get my hand on some 15 micron diamond stropping paste by 3M. I tested it in the same way I had tried other diamond pastes.

I expected some new suprises... And what do you think? The stuff did exactly what I did (not anymore) think it would do! A 15 micron diamond paste causing about 15 micron wide scratches. That did surprise me .

You can read about it here .

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by wickededge - 25 Apr 2012 16:24

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mark76 wrote:

I managed to get my hand on some 15 micron diamond stropping paste by 3M. I tested it in the same way I had tried other diamond pastes.

I expected some new suprises... And what do you think? The stuff did exactly what I did (not anymore) think it would do! A 15 micron diamond paste causing about 15 micron wide scratches. That did surprise me .

You can read about it here .

Nice work and write up Mark! It's very interesting how the different components combine to create different results e.g. balsa vs. leather; paste vs. spray et... Ken has some really nice, very concentrated 15um CBN gel I've been enjoying. It might make for a another fun study.

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Re: WE diamond stropping pastes - part 2 (or 3)

Posted by KenSchwartz - 30 May 2012 22:38

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Clay you might also enjoy putting a TINY amount of that 15 micron CBN on a 1k waterstone of your choice 😊
Think of it in terms of adding a little nitroglycerin to your carburetors for it's effect. Here you are using the stone as partially a substrate and partially adding to the rate of slurry formation and partially to abrade the abrasion resistant steel faster. Also LISTEN to the change in sound.

Ken

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