Wheels and their effect on Slides

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While reading through the numerous posts on this topic on the Silverfish Forum it is evident that there is more to this topic than just hardness of wheel material. Having read and tried to contribute to many of the posts I have been formulating an over all picture of what does and does not work in a wheel for sliding.

I should point out at this time that my sliding abilities are average, but can do them however badly. What I have found over the years I that I am quite good at thinning out the facts from copious quantities of drivel. The intention of this article is to try to bring all those facts into one place based purely on my interpretations/ understanding.

Durometer Rating

For those of you not aware a durometer is a method to measure the hardness of a substance, in this case wheels the bigger the number the harder the wheel (high = Rock hard, low = marsh mallow)

This seems to be the place that most people start at… I have a 78a wheel and can’t slide if I get a 90a all will be easy?

While it is true that the harder the compound the easier the wheel will slide this is not the only factor. All wheels will slide if pushed hard enough or with sufficient speed, just watch out for high siding on real soft wheels when they finally regain traction.

Wheel Side Wall Shape

I would say that this is as important is not more so than the material the wheel is made out of. The simple fact here is the amount of contact area between the wheel and surface being ridden on. A large contact patch will offer greater grip than on a wheel with a smaller patch.

For the purpose of this example in the diagram below please assume that all wheels are 70mm and that the overall max width is the same irrelevant of wheel profile.

The side wall shape being critical to total contact patch also has relevance to the wheels’ ability to release or break away from traction. A wheel like the 70s Flashbacks from Abec11 with no side wall radius will hang on until the last moments and then snap away very fast, great if you are expecting this but a bit of a surprise if it happens on a fast corner.

A wheel with a single radius on the outside of the wheel, like a Kryptonics classic K for example will break away smoothly, but may not glide best through the slide. This is primarily due to the inside edge of the trailing wheel offering up a good degree of resistance due to its square profile.

At the other end of the spectrum we have the double radius wheels like the Gravity Super G for example, these wheels have a radius on both the leading and trailing edges of the wheel during a slide. Both edges of this style of wheel are able to absorb discrepancies in the surface and to allow the slide to continue, but slides will come easier even when you don’t want them due to smaller contact patch.

Surface Condition

There are two factors that will influence the ability of a wheel to slide that have absolutely nothing to do with the board, trucks or wheels. This is the surface condition, how smooth it is and weather or not the surface is lubricated by water or other undesirable liquid.

Most surfaces as I am sure you have all discovered by now vary a great deal in smoothness. Skate parks and Shopping centres / offices tend to have the best surfaces be they ultra smooth concrete, ply or marble. Road surfaces on the other hand vary from smooth to gravel stuck to a hard surface. Your local riding area should be taken into account when picking a wheel for sliding. If you have a perfect surface you can you a rock hard wheel (>90a) because you will have

maximum grip as well as a surface that wont turn your spine into splinters for every crack and ripple you ride over. Most of us unfortunately do not live in areas where the surfaces are perfect and we have to choose a softer wheel (75a – 82a) just to be able to stand a chance of walking again after a session.

Surface condition also has a bearing on the traction available to wheels. A rough surface offers less grip than a smooth surface. In the drawing below you can see that a bad surface greatly reduces grip over the perfect, and as such a softer wheel will break away on a poor surface just as easily as a hard wheel on a smooth one.