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Waxing

To properly wax your skis you need three basic things:

1. Proper Base Prep
2. A good waxing iron
3. The proper wax, a good scraper and a brush

1. Proper Base Prep

Before you can get your skis to accept wax, you need to be sure your ski bases are **flipped**. Luckily, you will probably only have to do this once every couple of years, depending on how much you **flip** them.

You need Open Bases

Are the "pores" on your skis open or have they been sealed up by an overheated waxing iron? P-Tex (polyethylene) bases melt at around 275°F. Most glide waxes melt at around 210°F, and the goal is to warm your bases up to around 235°-248°F to allow the wax to penetrate deeply.

The trouble is most household irons have a wide temperature range they travel through before the thermostat kicks on to reheat the iron. You let the iron warm up, you drip wax on the ski then start to iron it on. What you may not know is the base will "suck" a large amount of heat out of the iron and suddenly it seems like the wax is more a paste than a liquid. So you turn the iron up a little, the thermostat kicks on and pretty soon the temperature zooms up past 275°F, the wax starts to smoke and you have just melted the top layer of P-Tex, effectively sealing your bases. You have just turned an expensive pair of skis into a cheap pair of skis.

But there's a way to salvage your bases. Take 80 or 100 grit aluminum oxide sandpaper and using a good sanding block run the sandpaper along the ski from tip to tail about 100 times. This will take off the top, melted layer of the base, opening the base back up. This also works with old skis that have been exposed to the air for a long time, drying out and oxidizing the bases (they will look dry and whitish).

You need Structured Bases

Glide is created by a microscopic amount of water being melted by the friction of the ski on the snow and providing lubrication. But if you put water between two sheets of glass it would be nearly impossible to pull the two pieces apart due to the suction of the water. The same thing happens between your skis and the snow. The wetter (warmer) the snow, the greater the suction. To break this suction we want to add structure (texture) to the base of the skis -- which are **like** the treads of a car tire. This structure can be added by expensive stone grinding (the best), using structure tools or by roughing up your bases with coarse sandpaper -- like we did in the above step while opening the base pores. You want to create tiny linear grooves or rills along the length of the ski.

You need to get rid of the Hairies

The catch with using the sandpaper method describe above is it also creates thousands of microscopic polyethylene hairs. Tests have shown these hairs will slow your glide down more than any other single thing. You get rid of the hairies by scraping the bases after you have sandpapered them. The goal is to keep the small grooves and rills of the structure, yet remove any loose hairs. After you have scraped off as much loose P-Tex as you can, take a Fibertex (or 3M Scotchbrite pad) and rub the bases thoroughly. Rub, rub, rub. You will also continue to get rid of these hairies every time you wax your skis. Wax, wax, wax.

A nordic team race coach took a brand new, factory fresh pair of skis and waxed, scraped and brushed them 60 times. On race day they were the fastest skis around. Most of us can't afford the time or money to wax our skis that many times, but it shows how important waxing and scraping is to make your skis glide better.

2. A good waxing iron

Now that you have prepared your bases by opening the pores and giving the base some structure, you are ready to wax. But before you wax, you need to learn about your waxing iron, because that's probably what sealed your bases up in the first place. Or will shortly seal your bases up if you aren't careful.

The more I learn about waxing, the more I realize the SINGLE MOST IMPORTANT THING about the entire waxing process is to have a good iron. This doesn't mean a \$2.00 iron from a garage sale can't be used, but you better be real sure you calibrate the iron before you even think about using it. My advice is to buy a Coverite dial thermometer. You can get one for around \$8.00 from Tognar Toolworks (800.299.9904 or www.tognar.com).

Turn your iron on, place the thermometer on the base and watch the thermometer as the iron goes through several warming cycles. Household irons have a large temperature range they span before the thermostat will click on. More expensive waxing irons (which can run from \$50-\$130) have thermostats that are constantly checking the iron temperature, so the temperature range is much smaller. Use the dial thermometer to test the iron often.

Once you get a feel for your iron, make sure the temperature does not exceed 250°F. When you first start to warm the wax into your ski base, the cool base may tend to "suck" heat away from the iron. Resist the temptation to turn the iron up and instead trade time for temperature. Better waxing irons also have thicker iron plates which hold the heat better while bringing the ski bases up to temperature.



3. The proper wax, a good scraper and a brush

Okay, so we have prepped bases, opened the pores, added a nice structure and have an iron we feel comfortable with. Let's talk about wax. There are lots of wax companies out there and my advice is to pick one company and stick with them for all of your waxes. There are also different types of waxes -- hydrocarbon, lo-fluoro and hi-fluoro waxes. Start with the cheaper hydrocarbon and work up if you feel the need (see the note below about wax prices). Luckily, our California temperatures are pretty consistent, which means we usually only need two glide waxes -- one for most of the winter (23°-32°F) and one for the warmer Spring months (+32°F). I personally use Swix waxes because I can use #8 in the winter and #10 for the Spring in any of their waxes -- hydrocarbon (CH), lo-fluoro (LF) or hi-fluoro (HF) formulas (CH-8, LF-8 or HF-8 and CH-10, LF-10 or HF-10). Again, pick a wax company and stick with it.

Start by dripping a line of dots along the base of the ski. If you are using kick-wax, don't ever apply glide wax in the kick zone (you can determine the kick zone by having someone help you by sliding paper under the skis while you stand on them and mark the limits with a permanent marker on the side of the ski).

Use your iron to warm the wax into the bases. The goal is to warm the ski bases up to around 250° F and this could take 3 to 5 minutes of moving the iron back and forth to bring the bases up to this temperature. Once you get the wax warmed into the base, set that ski aside and work on the other one.

The next step is to scrape the excess wax off of the base. You want the wax hard, but the base still warm to the touch. Take a sharp plastic scraper (you can rub the edge of the scraper on a fine metal file or sandpaper to get a good edge) and scrape off as much wax as you can. Then scrape a little more. Scrape, scrape, scrape.

Once you get most of the wax off, you still need to get the wax out of the grooves of the structure -- otherwise you really won't have any structure, just a nice smooth ski to create a great suction with the snow. Use a stiff nylon brush to get the wax out of the structure. Brush, brush, brush.

Finally, use your Fibertex (3M Scotchbrite) pad to rub the bases, removing yet more hairies from the bases.

Now go back and re wax, scrape and brush your skis at least three more times. Later you will only need to wax your skis once as they need it, but since you just finished sanding the bases, they need more help.

Misc. Notes:

The brush you use to clean out the structure doesn't have to be expensive, but you will probably find it builds up a static charge and small particles of wax will cling to the base. There are a whole range of brushes designed for skis so as you start waxing more often, consider picking some up. Good brushes will last you many years.

The different types of waxes (hydrocarbon, lo-fluoro or hi-fluoro) relate to how well they resist water, how well they resist icing up and how well they glide. By comparison, a 60 gram tub of hydrocarbon wax costs around \$7⁰⁰; a 60 gram tub of lo-fluoro runs about \$18⁰⁰ and only a 40 gram bar of hi-fluoro runs about \$58⁰⁰ and 100% fluoro wax will set you back \$110⁰⁰ for a 30 gram bar! Stick with hydrocarbon waxes until you really feel the need for speed. If you are mainly a weekend skier, one or two tubs should last you a season.