



Ski Waxing

Regular use of wax allows you to glide and turn easily and protects your base. Wax in a ski base is as important as oil in your auto engine. Bases soak up wax like a sponge. Gliding over snow slowly releases wax to give a lubricating layer between your base and snow. Lubricant is needed for performance as well as protection from "base burn" which is a fuzzy base texture caused by abrasive snow.

Wax also protects from oxidation. Bases exposed to oxygen oxidize and become rough similar to roughness created when steel oxidizes in the form of rust. Wax seals your base to prevent harmful oxidation that slows glide.

How To Wax

Waxing is easy and you need only a few basic supplies. Clean base by scraping with a plexi scraper to remove old wax or dirt from the surface. (Use base cleaners sparingly as they "dry out" and deteriorate the base material.) Use brass or bronze brush aggressively from tip to tail to further clean the base and remove oxidized base material. Follow with fiber pad to remove any "base burn fuzz" caused by abrasive snow.

1. CLEAN BASE

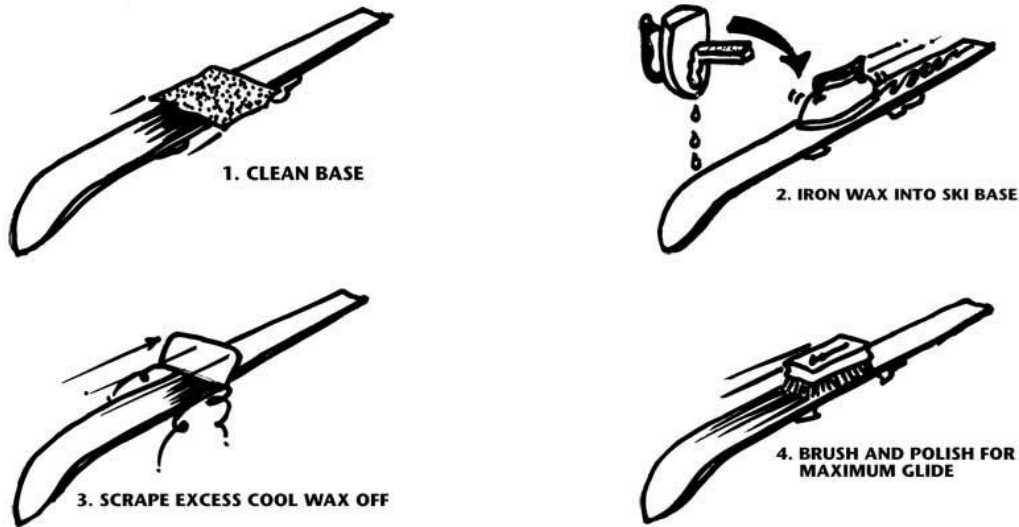
Liquid or paste waxes may increase glide for a short time, however they quickly wear off and don't protect your base. Hot waxing is best. Simply hold wax bar on iron allowing melted wax to drip on base. Set heat so wax flows easily, but don't "smoke" the wax. Iron base for a minute or two to spread and penetrate wax into base.

2. IRON WAX INTO SKI BASE

Cool wax to room temp. Scrape off excess with plexi scraper leaving thin layer on base. Excess wax inhibits base from gliding easy and fills the "structure" channels in the base.

3. SCRAPE EXCESS COOL WAX OFF

4. BRUSH AND POLISH FOR MAXIMUM GLIDE



Base Structure

This is a texture in the base with a pattern of channels to dissipate moisture between the base and snow to prevent "suction". A structure is best done in a competent ski shop with stone grinding. Final step is to brush surface wax out of structure with nylon, horsehair or bronze brush to clear moisture channels and break suction and enhance glide. Final cleaning of base with fine fiber pad removes any excess wax and polishes base for max glide.

Wax Types

Hydrocarbon

Hydrocarbon is the basic bar wax for skis and boards. Melt into base as an excellent lubricant for most snow conditions. It's inexpensive and used at all levels of skiing from beginner to top levels of racing.

Fluorocarbon

When humidity is above 50% or there is excess moisture in the snow you should use a fluorocarbon wax. It's a hydrophobic substance that's blended into hydrocarbon wax. Fluorocarbon is also available in "pure" form and applied as an overlay for top acceleration in wet snow.

Wax Colors

Dye is added to designate hardness of wax. Soft waxes are a better lubricant for wet and warm snow. Hard waxes lubricate and protect your base better in cold or abrasive snow.

Frequently Asked Waxing Questions

WAX PRINCIPLES

Waxes are lubricants applied into a base to reduce friction between base and snow. Three types of friction require specific lubrication.

Dry Friction

Occurs when dry snow granules come in contact with the ski base. The solution to enhance glide is to use a hydrocarbon wax that is slightly harder than the snow particles. If a wax is too soft the snow crystal will penetrate into the wax causing a grippy base. However, if the wax is too hard the coefficient of friction will be higher and the base will be less slippery.

Wet Friction

Wet friction occurs with a high moisture content snow creating suction between base and snow. A fluorocarbon additive is necessary to reduce the wet friction. However, it's important to not use too much fluorocarbon as it will increase the dry friction and reduce glide.

Electrostatic Friction

Static electricity is generated when a base runs on snow creating an electrostatic attraction between the ski and snow. Visualize the attraction of socks that have been in a clothes dryer. Graphite is commonly introduced into the base to reduce static electric.

What Wax Brand is Fastest?

Each major brand proclaims victories, but they are really quite similar in their basic formulation. It's usually best to select one top brand and learn the characteristics of each of their products so you will make the correct choice for the particular conditions of the day.

Bouncing around to find a "miracle" wax is usually self defeating. We often hear of a chemist who has developed a "secret formula". Don't you believe the entire race world be using it if there were such a wax?

The vast majority of waxes used in international racing in alphabetical order are: Dominator, Swix and Toko.

Choosing one and following their recommendations will help to simplify your waxing program.

What Iron Temperature?

Set iron as cool as possible, but warm enough so wax easily melts. The iron will initially cool when coming into contact with the base as the cooler base material draws the heat from the iron. A high quality ski wax iron will hold a specific temperature much better than a household iron and make for more efficient waxing.

WAX TEMPS	
Swix recommends these ideal iron temperatures by category of Swix wax.	
Category	Temp
4.....	300°F
6.....	280°F
7.....	275°F
8.....	245°F
10.....	230°F
Dominator and Toko use a similar range of 300° to 230°F for cold to warm waxes.	

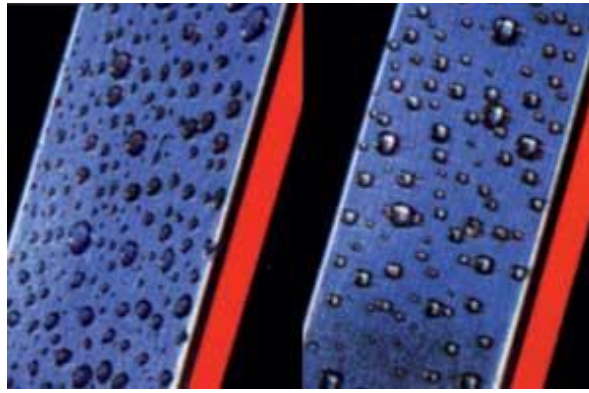
Is Fluorocarbon Faster?

While fluorocarbon is used in the most expensive waxes a tech must not fall into the trap of expecting more expense to always be faster. Fluorocarbon is a hydrophobic material to repel moisture. In low humidity or low moisture a high fluorinated wax may reduce speed as it increases dry friction. Use a low or mid-fluoro wax if in doubt.

Fluorocarbon is added to hydrocarbon wax in varying proportions to suit the conditions. Wax companies don't list the exact amount of fluorocarbon, but the chart below is a general approximation.

Fluorocarbon Chart

Type	Flouro Amount	Humidity Range
Lo-Flouro	2-3%	under 35%
Mid-Flouro	3-7%	35-70% +
Hi-Flouro	8-15%	70% +



Left ski is treated with basic hydrocarbon wax. Right ski has a high fluorinated wax that illustrates how the water "beads" and is repelled.

What is Base Prep Wax?

Base prep waxes were developed to quickly penetrate a base during initial ski preparation. They are a hydrocarbon based wax to condition and lubricate the base to prevent it from drying out. New skis normally come from the factory with insufficient lubrication and should definitely be prepped before use.

Base prep wax is also used as travel wax to iron into your base preventing exposure to air for extended periods that causes oxidizing. Leave wax unscraped until you are ready to prep for use.

How do I Prevent Base Burn?

Base burn is caused when abrasive snow rubs on a base with insufficient lubrication. The base becomes fuzzy and will not glide well. Remove fuzzy material by ironing in a hard wax and scraping with sharp scraper after wax has cooled.

Prevent base burn by fully saturating base with multiple waxing of medium to hard waxes and applying an extra cold powder in base near edges.

What is Hot Scraping?

Preferred method to clean race ski bases. Iron on soft hydrocarbon or Base Prep wax and scrape while wax is still liquid or soft. Impurities in base float to the surface and are removed by scraping. Repeat several times to purge all contamination and old wax.