

Artificial Snow and Swix Preparing for US Nationals in Rumford



Photo Credit: Andy Shepard/John Bernard MWSC and Chisholm Ski Club

With US XC Nationals less than two weeks away, Mother Nature has been most uncooperative. Fortunately, the organizing committee and volunteers in Rumford have picked up the slack and have the snow guns blowing at every possible opportunity. The efforts and tireless hard work of the Chisholm Ski Club organization has stockpiled enough blown snow to cover the entire racecourses for the championships.

Over the past 10 to 15 years, artificial snow has been needed and used at major international and national events. Following this trend, Swix saw the need to develop a wax line that addresses the specific and unique qualities of artificial snow.

The first version of a specifically developed artificial snow glide wax was Swix's High Fluoro Black Devil or "HFBD" waxes. Leading up to the 2002 Salt Lake games, Swix embarked on a research and development program designed to incorporate a solid lubricant to its highly successful HF glide wax line. Two plus years of testing and development led to the introduction of the HFBD line for the 2002 Games.

With further testing and development, Swix found a new additive to use as a solid lubricant that has a considerably lower coefficient of friction in comparison to its predecessor. This resulted in the formation of the new Swix High Flouro Black Wolf or “BW” waxes.



The HFBW line from Swix is ideal for artificial snow in many ways. First, artificial snow will be more aggressive and will be coarser grained when compared to natural snow due to the process by which it is created. Compressed air and cooled water are the main ingredients of artificial snow, which create snow crystals that resemble ice particles rather than fresh, sharp natural snow crystals. Thus, artificial snow crystals can create more friction compared to natural snow crystals. The solid lubricant found in HFBW waxes will reduce the frictional coefficient of the artificial snow much more than normal waxes.

Further, artificial snow will tend to have more foreign contaminants within the snow pack compared to natural snow. This is due many factors, which include but are not limited to, quality of the water used in the snow making process, dirt and other contaminants brought onto the track by skiers and additives to the water that may be used in artificial snow making process. These contaminants create “dirty snow” which increases friction between the snow surface and the ski base, creating additional dry type friction.

BW waxes reduce dry type friction created by dirty or contaminated snow due to its high compression strength and its low shear strength. The high compression strength aids in separating the two important surfaces in contact when skiing, the snow and the ski base. Simply put, dirt and foreign contaminants are harder than natural snow crystals and they create additional friction compared with natural snow by penetrating the ski base. The BW additive resists the penetration of these contaminants into the ski base and reduces this friction by acting like a deck of cards. If pressure is applied downward to a deck of cards, they remain stable and uniform, resisting deformation or movement. However, if the pressure is applied in a transverse or sideways direction, the deck of cards will slide very easily. Using this analogy, a ski base waxed with BW will resist the foreign contaminants found in artificial snow and will slide over the artificial snow with less friction compared to normal waxes.



The Cera F line from Swix is the icing on the cake when speaking about friction reduction and dirt resistance. The purity of the fluorocarbons in Cera F is of the highest degree, adding in reducing friction, increasing dirt and foreign contaminate resistance and lowers surface tension by increasing the repulsion of water molecules. Artificial snow contains all of these qualities, which make Cera F a must use for any important race.

Swix will be at Black Mountain in Rumford throughout US Nationals, testing and providing waxing information to all the teams and competitors competing. We will be located in the main wax building at Black Mountain, just look for the red Swix signs. Happy Holidays!