Oxidation process and its effects

Oxidation starts once polyethylene base makes contact with oxygen and solar irradiation. It speeds up with the rise of the temperature and continues during storage. These two factors lead to the production of oxygen containing free radicals and capable to pull out hydrogen atoms from hydrocarbon structure of polyethylene. This is a chain reaction and it lasts all the time while the base is in contact with oxygen, thus, leading to the formation of decomposition products, such as ester, acids and acetone. This structural change strongly deteriorates physicochemical characteristics of polyethylene (its tensile strength and modulus, density, flexibility and coefficient of friction). At the same time, it reduces crystallinity a lot and forms **white micro-cracks on the surface**. This reaction is irreversible, leading to the creation of “sterile” zones.

Oxidation can be limited and slowed down in two ways:
By adding anti-oxidants aimed at preventing radicals’ activity during the process of base fabrication.

By applying an air and UV proof film to protect ski base, which is WAXING!

Thus, the role of waxes consists in protecting the surface of your ski base against air oxygen and in preventing the above oxidation process. Waxes preserve mechanical properties of your ski base, that’s why you should always wax your skis after skiing, be it a training session or a competition.