

## ***Different Ways to Use Polarizing Filters***

A polarizer is my favorite filter, because it seems to work magic with so many scenes. I guess it seems that way because the human eye can't distinguish polarized light, so the filter brings out effects that are not otherwise visible to the eye.

Light waves actually vibrate in some particular direction, say horizontal or vertical, and a polarizer passes only those light waves which are aligned in a particular direction. The filter can be rotated on the lens to select this angle.

Most light is non-polarized; in other words it is a mix of light waves with all different angles of polarization. The polarizer has no particular effect here, except to filter out about half the light, like a neutral density filter. But some light is strongly polarized, in other words it consists mostly of light waves vibrating in a particular direction. The polarizer either passes or blocks this light, depending on the angle to which it is turned.

One common source of polarized light is the clear blue sky. Without getting too technical, the sky is blue because of Raleigh scattering of sunlight in the atmosphere, and the light from the sky is polarized at an angle depending on the angle of the sun. Turn the polarizer to the appropriate angle, and you block some of this polarized light, thus darkening the sky and increasing the contrast between the sky and clouds.

Another source of polarized light is reflections from glossy nonmetallic surfaces, like glass or water. When turned to the appropriate angle, the polarizer can block these reflections and allow you to see better into a store window or a pool of water. It can also minimize those glossy surface reflections on shiny plant leaves, or painted surfaces. Similarly it can minimize the surface sheen on wet objects like a freshly cut piece of fruit, or bare skin glistening with sweat. Whether or not this result is esthetically good is up to you, of course.

Sometimes these reflections are a very important part of the image. For example you might be taking a picture of boats in the harbor, with their reflections in the water. If turned to one angle, the polarizer will virtually eliminate the reflections. But turned ninety degrees, it will enhance and accentuate the reflections. This is because it will pass the polarized light from the reflections, while blocking about half of the non-polarized light from everything else. This allows the reflections to stand out more strongly. So if you want the reflections, you can use the polarizer to emphasize them.

One more use of a polarizer is in photographing rainbows. The light of a rainbow is strongly polarized because it is a reflection from a glossy nonmetallic surface, namely the inside surface of raindrops. The light is also refracted as it passes through the raindrops, and chromatic aberration creates the spread of colors. If you turn your polarizer to one angle, the rainbow disappears. Turn it ninety degrees and the rainbow appears especially strong.

So don't leave home without your polarizer. You can use it in many different ways to get the photographic effect you are looking for.

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