YELLOWING OF RUBBER CRUMB SURFACES

Aromatic binders (moisture curing) create a yellowing effect on all surfaces. This phenomenon is the result of the formation of transparent crystals during the curing process, which cause light to refract when passing through them in the same way as a simple prism. It is the light refraction when viewing the finished surface that gives the appearance of a yellow tint, the actual colour of the granule does not change as can be seen by cutting a cross section. The appearance of the surface will also vary depending on the position, the angle or the sunlight conditions from which it is viewed.

The yellowing effect is most noticeable with colours such as blue or eggshell, where yellow and blue light combine to make green. The effect on the other colours is to make them appear darker. There is no way to completely avoid this effect with aromatic binders and care must be taken by specifiers and designers to ensure that the client is fully aware of how the finished surface will look.

Blending another colour, such as black, to produce a variegated finish can mitigate the impact of yellowing by reducing the visual impact. Large areas of blue should be avoided, as work lines will show up on this colour more than any other colour. Sections of a single colour should always be completed in one work session, without a break in spreading if possible.

True aliphatic binders can greatly reduce this effect initially but cannot claim to offer permanent protection or enhanced physical properties. However, aliphatic binders are three times more expensive than aromatic binders. Some binders marketed as being aliphatic do not use IPP isocyanates as a base and consequently cannot claim to be truly aliphatic.

Through several years of experience and constructive installer consultation and feedback, this phenomenon occurs to all moisture curing polyurethane binders regardless of manufacturer.