



## Finishes - Colour pigments in precast

Coloured precast is popular for use in architectural building panels, infrastructure projects, bridges, paving and street furniture. Colored concrete can be surprisingly affordable, even on large precast structures.

Pigments have been used to permanently colour concrete for about a century. The use of pigments in concrete enables architects and builders to emphasize the character, enhance the form, complement the natural hues of the landscape, and add life and value to a project.

Naturally occurring pigments are found in mineral rocks and range in colour from red, brown to yellow. Synthetic oxide pigments were developed to make additional colours and to create a more homogeneous particle size with a more uniform bulk density and water absorption. Synthetic pigments are generally preferred for all architectural concrete work and are more intense in colour than their organic counterparts, with excellent long-term colour stability. Green and blue

Pigments are processed from copper oxides and cobalt deposits, and can be very expensive.

Integral concrete colouring using pigments involves adding a powder, granule or liquid pigment into the concrete mix so that the colour is bound into the concrete matrix. Pigment particles are finer than cement particles, so once added to the mix, will surround and coat the cement particles, giving the concrete its colour. The amount needed is typically 1-3% of the cement weight, although some projects may require as much as 6%. Any more and the colour becomes saturated.

The cement base will affect the final colour; a white cement base will give a lighter, brighter colour, a greyer cement will result in more muted tones. A consistent water: cement ratio must also be maintained to produce colour consistency in the finished product.

# FACT SHEET

Coloured concrete will not fade over time if pure iron oxide pigments are used from reputable suppliers. Years of surface effects such as efflorescence, pollution, dirt and traffic take their toll on the concrete surface giving a faded appearance, however this can be avoided by regular cleaning and re-sealing.

Pigments have labour and materials' advantages over surface coatings such as paint. The use of coloured concrete means greater savings over the life cycle of the building as surface coatings don't have to be replaced; also eliminating the environmental burden of multiple coats of paint.

Marcel Linssen from Lanxess has the final word: "For best results the pigment dose should be adjusted according to the cement content. If used correctly, pigments will not fade and provide colour for life".