HYDRAMAX 1609 Technical Note

Architectural

Precast concrete elements are often used to provide an aesthetically pleasing finish to a structure. The inclusion of Hydramax 1609® within a mix design can aid in the production of a consistent finish to a precast product, reducing the risk of flaws that can often occur in 'standard' concrete.

Consistent and Uniform Colour

By using Hydramax 1609® within a particular mix design, the improved efficiency of the hydration process, where up to 95%+ of the cement particles are hydrated, results in a more consistent and uniform colour to the finished product. The reduction of the free calcium hydroxide within the mix results in fewer white ‘patches’ appearing on the surface of the concrete. This means that the colour of the finished article is determined by the other components within the mix, rather than being ‘lightened’ by the calcium hydroxide.

Depth of colour

Coloured precast concrete, created by the use of oxides, often produces lighter results than expected. This is as a consequence of the presence of calcium hydroxide within the hydrated concrete. The use of Hydramax 1609® improves the efficiency of the hydration process, significantly reducing the presence of "free" calcium hydroxide and thus resulting in a more enhanced, consistent colour to the final product.

Pin Hole Reduction

Pinholes are a consequence of air and water being trapped within a concrete mix, that ultimately find their way to the surface. Hydramax 1609® reduces the amount of water in the mix to such an extent that nearly all is used in the hydration process. In addition to this, the Hydramax 1609® changes the consistency of the mix, thus reducing the amount of air trapped within the concrete.

Reduction of Efflorescence

Efflorescence in concrete occurs when the calcium hydroxide and salts in concrete dissolve and come to the surface of the concrete. The improved efficiency of the hydration process, where 95%+[(1)] of the cement particles are hydrated by the inclusion of the Hydramax 1609®, results in little to no deposits of efflorescence appearing on the concrete surface. The significant reduction in bleed tracts as a result of the majority of the water being used in a more efficient hydration process, also result in restricting salts from rising to the surface.

[(1)] Based on a Hydramax 1609® dosage rate of 2.5% of OPC by weight, added to a comparable mix containing no admixtures.

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