Production

Hydramax 1609® alters the way Portland cement hydrates. It typically raises the amount of Portland cement that is hydrated, at 28 days, from 60 - 70%, to 95%+[1]. This positive increase can dramatically improve the performance of the concrete, as well as enhance production processes and efficiency.

The early strength gains detailed in the "Technical Note - Performance" document gives additional benefits other than having stronger, harder, denser concrete. Depending on the facility, production capacity and output can increase.

Increased Output

Mould reuse - The reduced time to achieve early strength means that moulds can be struck within 4 to 7 hours, depending on mix design and type of concrete product.

Reduction in breakages - The increase in flexural and tensile strengths that can be experienced following the inclusion of Hydramax 1609® within a mix design, results in fewer breakages when moulds are struck.

Less Storage Space

With 7-day strengths of a concrete element potentially being achieved within 3 days, and 28- day strengths being achieved in 7 days, the impact on logistics can be significant. Dependant on the production facility, the possibility to despatch finished product earlier can "free up" valuable storage space and enable greater throughput of products in the production process.

Less Failures

The reduction in breakages during mould striking, detailed in the 'Increased Output' section of this technical document, are not the only occasion where the inclusion of Hydramax 1609® within a mix design can help reduce failures. The overall potential strength gains can aide with the reduction of damage that can occur during transportation.

If consistent and uniform colour are an important aspect in the promotion of a particular concrete element, the inclusion of Hydramax 1609® within the mix design can significantly enhance the consistency and uniformity of the end product. Hydramax 1609® reduces the amount of "free" calcium hydroxide within the concrete, often the source of white ‘patches’ that appear on the surface of new concrete.

An additional benefit of incorporating Hydramax 1609® is that pinholes and unsightly efflorescence are significantly reduced as a result of the improved efficiency of the hydration process. The reduction in excess free water and "free" calcium hydroxide, together with an overall densification of the concrete, reduce the likelihood of final products being rejected before despatch.

(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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