



Plastic Properties



A Natural Pozzolan for High Performance Concrete



Microsilica 600

Plastic Properties

The addition of Microsilica 600 to concrete mixes will impact on both the plastic and hardened properties of the concrete. Rheology, heat generation, temperature differential and concrete setting characteristics are considered the most important issues faced by today's concrete practitioners.

Moderate Concrete Bleed

Microsilica 600 concrete bleeds less than a conventional concrete, leading to higher surface strength and improvement in abrasion resistance. The high bleed of conventional concrete can lead to plastic settlement cracking over reinforcing bars and a high water content/low durability surface. By contrast, plastic shrinkage cracking in very low bleed concrete, such as obtained with silica fume concretes, occurs when there is insufficient bleed water to replace water that is evaporating. Microsilica 600 provides the optimum solution; concrete with high durability and strength but with just the right bleed to minimise the risk of plastic cracking.

Lower Heat Generated

GP cement and Microsilica 600 have similar heat generating properties (e.g. approx 13°C rise per 100kg cement). However, for a given strength, Microsilica 600 concrete will have a lower binder content, resulting in lower temperatures. In thicker slabs, it's possible to reduce temperature differentials and maximum temperatures by 10°C.

Normal Concrete Mixing Times

Microsilica 600 particles do not agglomerate. As with silica fume powders, there is no need for extended mixing times to break up the agglomerates, nor to ensure wetting of the silica to loosen agglomerates to aid dispersion. However, if Microsilica 600 is added to the concrete mix in a "concrete ready" paper bag, it is necessary to ensure that the paper totally degrades by thorough mixing.

Formwork Finish - High Quality Texture

Where formed walls, columns and deep beams require a quality finish, Microsilica 600 concrete mixes result in less drag than silica fume mixes. Reducing drag is more likely to produce a fully compacted surface, free of blow holes, honey comb and other imperfections.

MICROSILICA 600 APPLICATIONS & INFORMATION

Other Microsilica 600 applications for specialist concretes and high performance concrete are detailed in the following brochures:

- Industrial & Commercial Floors
- Marine Concrete
- High Strength Concrete
- Water Proof Concrete
- Shotcrete

Reference should also be made to the operational and safety requirements in the following documents:

- Chemical Resistant Concrete
- Health & Safety Data Sheet
- Concrete Mixing Instructions
- Concrete Placement & Finishing Procedures

Product Note

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