BETONAC®-BVF

HIGH RANGE WATER REDUCING SUPER PLASTICISER CONCRETE ADMIXTURE

DESCRIPTION

BETONAC®-BVF is a super plasticiser for use as a concrete admixture in all types of construction work. It is based on modified Naphthalene Sulfonate and Melamine condensate. When added to concrete mixes it acts as a powerful dispersing agent for the cement particles, which would otherwise tend to agglomerate. This effect, which is more powerful than conventional plasticizers, may be used either to improve workability to produce "flowing concrete "or to increase strength by enabling the water content to be substantially reduced.
BETONAC®-BVF is available with retardation effects for Hot Seasons concreting and for Cold Seasons as a non-retarding admixture.
The use of BETONAC®-BVF depends on the project requirements and the type of cement, sand and aggregate used in the project.

USES

BETONAC®-BVF is ideal for use in any concrete mix where it is desired to keep the water / cement ratio to the minimum to achieve a degree of workability necessary to provide easy placement.

ADVANTAGES

- **Speed construction -** increased workability speeds handling, filling of formwork and placing around congested reinforcement. Labor times reduced to minimum.
- **Increased strengths -** without increasing the cement content or reduction in workability.
- **Improved quality -** reduces shrinkage by lowering w/c ratios. Denser, closer textured concrete for improved durability and surface finish. Bleeding and segregation are minimized.
- **Easier pumping -** lower pumping pressures prevent clogging and reduce friction in the pipeline.

STANDARD

BETONAC®-BVF complies with ASTM C 494 Type D, F and G, DIN EN 206-1, 3.1,10.
BETONAC®-BVF with retardation (used for hot seasons) is Type D, and G.
BETONAC®-BVF without retardation (used for cold seasons) is Type F

(ASTM C 494 requirements: Type D: water-reducing and retarding admixture, Type F: High water-reducing admixture, Type G: water-reducing, high range, and retarding admixture)

APPLICATION

1. Add BETONAC®-BVF to the mixer, thoroughly mix the ingredients with 25%-30% of the mixing water and immediately discharge . Avoid delays during placement to obtain full benefits.
2. For ready mix concrete, BETONAC®-BVF should be added to the mixing drum on site and the batch should be mixed for a minimum of 5 minutes at maximum revolutions before placing.
3. **Important Note: We highly recommend adding the additive at the final stage of the mixing process. No water to be added once the additive is used. Water will not increase the mix workability but will negatively affect the compressive strength of the mixture.**

Dosage

The optimum dosage should be determined by site or laboratory trials with the particular concrete mix, which enables the effects of workability, strength and / or cement reduction to be measured accurately.
As a guide, the rate of addition is generally in the range of 0.8 % to 1.8 % of cement weight. **Trial mixes are recommended.**

Effect of overdosing: An overdose in the recommended amount of BETONAC®-BVF can result in more set retardation. The ultimate strength and properties of the concrete will not be impaired.

Curing

Retarded concrete must be prevented from drying out. The use of LEYCO® CURASIN curing agent is strongly recommended.

Compatibility

BETONAC®-BVF can be used with all types of Portland and slag cement.

PHYSICAL PERFORMANCE

Workability

The addition of BETONAC®-BVF without reduction in the water content and with only minor mix re-design, produces “collapsed slump concrete” which will flow to fill formwork completely and produce denser hardened concrete without decrease in compressive strengths.

Compressive Strength/Density

Substantial reduction in the water / cement ratio results in early compressive strength increased up to 100% while maintaining original workability. This is an obvious advantage for precast / pre-stressed concrete where Calcium Chloride for acceleration purposes is unacceptable.

Bleeding/Segregation

Despite the high liquid consistency of collapsed slump concrete, little bleeding takes place and the likelihood of aggregate segregation is reduced to minimum. It should be noted, however, that the pressure developed by the flowing concrete on the formwork is slightly increased.

Reduced Shrinkage Cracking

Flowing concrete does not have the disadvantages of concrete which has been plasticized by increasing the amount of cement paste or water and the incidence of shrinkage cracking is therefore, reduced. Where water or cement reducing properties of BETONAC®-BVF are used, shrinkage cracking is also greatly reduced.

Durability

Increased density and uniformity produced by the workability of the plasticized concrete increases durability and resistance to aggressive agents. Research indicates that the long term effects of creep are unaffected and where water reducing properties are used, creep is reduced.

TECHNICAL DATA

Density: 1.13 gm/ml ±0.02

Color: Brown

Setting time: Negligible effect at normal dosage rates

Air entrainment: Does not entrain air

Calcium Chloride: Nil

Packaging: BETONAC®-BVF is available in 220 kg drums or 1100 kg IBC's

Storage/Shelf life: Minimum of 1 year when protected from direct sunbeam, extreme heat and frost. Cool storage is recommended.