V-MAR® 3

Rheology-modifying admixture for self-consolidating concrete

Product Description

V-MAR®3 is a high efficiency, liquid admixture designed to enable production of Self-Consolidating Concrete (SCC) by modifying the rheology of concrete. V-MAR 3 works by increasing the viscosity of the concrete while still allowing the concrete to flow without segregation. V-MAR 3 is based on a unique, patented biopolymer and is manufactured under closely controlled conditions to provide uniform, predictable performance.

V-MAR 3 complies to AS 1478 as a Type SN admixture. V-MAR 3 admixture is supplied as a readyto-use milky white liquid. One litre weighs approximately 1.02kg. V-MAR 3 contains no intentionally added chlorides.

Uses

V-MAR 3 is recommended for use in conjunction with ADVA®superplasticisers to produce SCC. V-MAR 3 is recommended for use in precast and prestressed concrete.

V-MAR 3 enhances the ability to manufacture SCC by allowing for variations in aggregate gradations and moisture contents. This can greatly reduce the time required to develop SCC mixes, and time required to update and test new mix designs if raw materials change. In addition, V-MAR 3 allows for the production of SCC in applications where mix designs and materials can not be modified for SCC properties, such as exposed aggregate concrete.

Product Advantages

SCC produced with V-MAR 3 has unique advantages over conventional flowing concrete:

- Self Placement: Vibration can be eliminated because SCC is highly flowable and will change shape under its own weight to self level and self consolidate within formwork.
- No Segregation: SCC is a flowable yet highly cohesive material that will not segregate, and has significantly reduced bleeding.
- No Blocking: SCC can pass freely through narrow openings and congested reinforcement without aggregate "blocking" behind obstructions that stop the flow of concrete.

V-MAR 3 is an easy-to-dispense liquid admixture. Dosage rates can be adjusted to meet a wide spectrum of SCC performance requirements.

Benefits

SCC produced with V-MAR 3 and ADVA superplasticisers is designed to eliminate the need for vibration and manual compaction in precast and cast-in-place concrete.

For precast/prestressed concrete producers SCC provides the following benefits:

- Reduced labour and improved productivity through faster and easier concrete placement with no vibration.
- The highest quality surface finish, eliminating/reducing the need for surface touch ups.
- Improved labour safety, reduced plant noise levels and improved work environment.
- Reduced wear and tear on forms by eliminating vibration.
- Achievement of complete consolidation throughout concrete elements, even in thin walled, highly reinforced units.
- Increased production flexibility by enabling use of form geometry and form orientations in which placement of conventional concrete mixes would be difficult or impossible.

Compatibility with Other Admixtures

V-MAR 3 can be used to make SCC with all ADVA Superplasticisers, i.e. ADVA CAST 620, ADVA 142 and ADVA 485. V-MAR 3 is compatible with all WRDA®PC-based water reducers, retarders and MIRA®PC mid-range admixtures from GCP Applied Technologies. DARASET®333 may be considered for SCC precast applications that require high overnight compressive strengths. Each admixture is to be added separately to a mix.

Addition Rates

V-MAR 3 is typically used at an addition rate of 500 to 2,000 mL / m3 of concrete.

Dosage requirements are based on water content in the mix. As water content increases, the V-MAR 3 requirement will increase. Typical water contents for SCC mixes are 165 to 190L / m^3. At lower water content, use V-MAR 3 at the lower dosage range, at higher water content, dosage rates will be higher.

V-MAR 3 dosage requirements may also be affected by mix design, cementitious content, aggregate gradations and SCC application. Please consult with your local GCP representative for more information and assistance.

ADVA series of superplasticisers is highly recommended for use in SCC production. Dosage rate requirements for superplasticisers are typically slightly higher for SCC than for conventional concrete mixes.

Pre-placement testing is recommended to determine the optimum admixture addition rate. Factors that influence optimum addition rate include other concrete mix components, aggregate gradations, form geometry, and reinforcement configurations. Please consult your local GCP representative for assistance with developing mix designs, admixture combinations and SCC production.

Dispensing Equipment

Please contact your local GCP representative for further information regarding the dispensing equipment for this product.

Packaging

V-MAR 3 is available in bulk, drums and pails. It will freeze at about -2°C but will return to full functionality after thawing and

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