

HIGHLY EFFICIENT VISCOSITY ENHANCING AGENT

PRODUCT

EPSILONE VEA is a highly efficient and robust liquid admixture based on macro-copolymers designed to enable the production of highly cohesive and pumpable HPC or SCC.

EPSILONE VEA improves the stability and the segregation resistance of various type of concrete. It enhances the thixotropic properties of cement based materials.

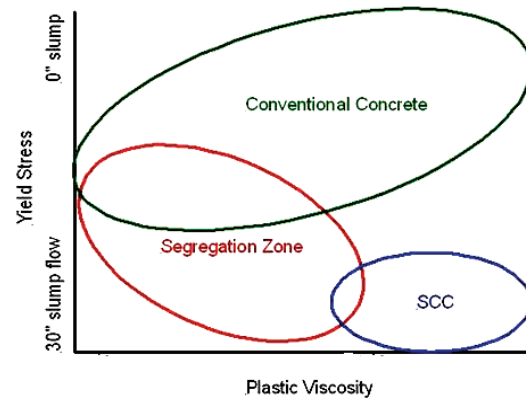
WORKING MECHANISM

EPSILONE VEA first dissolves in the cement paste and adsorb free water molecule. Therefore, active macro-copolymer swells. Adjacent polymer chains develop attractive forces, resulting in the formation of a gel like network. At low shear rate and especially at high concentration, the polymer strangles causing an increase in the apparent plastic viscosity. Moreover, active copolymers will adsorb on the neighborhood particles forming a three dimensional bridge structure.

The rheology of fresh concrete can be mainly described by its yield point and plastic viscosity:

- The yield point describes the force needed to start the concrete moving. Yield point is related to the workability of the concrete and may be assessed by tests such as the slump or flow value.
- Plastic Viscosity describes the resistance of a concrete to flow under external stress. Viscosity is caused by internal friction. The speed of flow of concrete is related to its plastic viscosity and may be assessed by the T500 time during a slump flow test or by the time to flow through a V Funnel.

The balance between the yield point and the plastic viscosity is the key to obtaining the appropriate concrete rheology. EPSILONE VEA changes the rheological properties of concrete by increasing the plastic viscosity but usually cause only a small increase in the yield point. HRWR Admixtures which decrease the yield point are used in conjunction with EPSILONE VEA to optimize the yield point.



PROPERTIES

EPSILONE VEA is designed for specific applications. It is used to:

- Reduced segregation in highly flowable/self compacting concrete
- Reduced washout in underwater concrete
- Reduced friction and pressure in pumped concrete
- Compensates for poor aggregate grading, especially a lack of fines in the sand
- Allows reductions in powder content in self compacting concrete
- Reduced bleeding in concrete
- Improves green strength in semi-dry concrete
- Less sensitive to variations in the moisture content of the aggregate– Improves concrete robustness
- Provides stability to more fluid mixes without the risk of segregation Reduced formwork pressure by thixotropic effect
- Better surface appearance
- A more durable concrete
- Reduces environmental risk caused by the wash out of cement particles
- Prevents blockages by allowing the concrete to remain fluid, homogeneous and resistant to segregation, even under high pumping pressures

SCOPE OF USE

EPSILONE VEA is recommended for all areas of use of high-performance concrete in the concrete industry:

- Standard concrete
- Self-Compacting Concrete
- High Performance/High Strength Concrete



- High Durability Concrete
- Precast Concrete
- Mass Concrete
- Underwater concrete
- Pervious Concrete
- Lightweight aggregate concrete
- Sprayed concrete
- Shotcrete
- Manufactured Concrete Products
- Semi-Dry Concrete
- Screeds & Renders
- Repair Mortar
- Sustainable concrete
- HVFA concrete
- Architectural concrete with exposed coarse aggregate surfaces.
- Low cementitious SCC concrete mix designs.

CHARACTERISTICS

Appearance	Light Grey
Specific gravity @ 25°C	1.02 ± 0.02
Chloride content	NIL– BS 5075/EN 934-2

STANDARDS

EFNARC - VMA Guidelines 2006
 CAA – VMA for SCC Guidelines
 BS EN 480
 BS EN 934-2
 ISO 649-2

INSTRUCTION FOR USE

EPSILONE VEA should be dispensed and well mixed at the end of the batching sequence after all other ingredients have been thoroughly mixed.

For the best efficiency, it is highly recommended to deduct the added amount of VEA from the total water. It is preferable to stir, shake or agitate the product before usage especially when kept intact in the store for a long period.

DOSAGE RATES

Range of dosage rates: from 400 to 2000 ml per 100 kg of cementitious content.

Various concrete materials, slump, ambient air temperature, additions of pozzolanic materials, mixing time, and type and brand of cement will affect dosage rates. It is suggested that trial mixes be conducted in order to determine the required dosage for optimum performance with available concrete

components.

At optimum dosage a right balance between fluidity, passing ability and resistance to segregation is achieved.

EFFECT OF OVERDOSE

Overdose of EPSILONE VEA may result in the following:

- Loss of initial workability
- Increase in concrete mix cohesiveness
- Slowing the placing rate

This effect can usually be overcome by increasing the superplasticizer content.

COMPATIBILITY

EPSILONE VEA can be used in mixtures containing:

- Silica fume
- Fly Ash
- GGBFS
- Pozzolanic Binders

EPSILONE VEA is compatible with all types of SODAMCO's concrete admixture.

Consult SODAMCO's technical dept. for advice.

PACKAGING

EPSILONE VEA is supplied in:

1000 liters containers.
 200 liters drum.
 20 liters Jeriken

STORAGE

EPSILONE VEA can be stored up to 6 months from manufacturing date under cover, out of direct sunlight and protected from extreme temperatures.

In case of frost, the product recovers its properties after progressive thawing and homogenizing by agitation.

HEALTH & SAFETY

In case of contact with skin or eyes, rinse thoroughly with water. If irritation persists, seek medical attention.

If swallowed, do not induce vomiting and seek medical attention.



QUALITY STATEMENT

All our products are manufactured to comply with our internal QA/QC program and quality management system to ensure consistency and quality

DISCLAIMER

While the company guarantees its products against defective materials, the use and application of these products are made without guarantee since the conditions of their applications are beyond its control. It is recommended to verify with the company that the product is suitable for the intended use, and that the Data Sheet version is the latest one. The company may modify it without prior notice. Technical characteristics are listed for guidance only. For more information, please contact the company's office in your location.

NOTE

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