

## PRODUCT DESCRIPTION

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

## PRODUCT FEATURES

- Reduced segregation in highly flow able/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 the thixotropic effect
- Better surface appearance

## PRODUCT USES

VMA™ is recommended for use whenever in:

- 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.

## HOW TO USE

### DOSAGE

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, the right balance between fluidity, passing ability, and resistance to segregation is achieved.



Viscosity Modifying Admixture - VMA™

## MIXING

- VMA™ 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.

## PACKAGING

VMA™ is supplied in:  
1000 liters' containers.  
200 liters' drum.

## LIMITATIONS

- Exact dosage rates of AEA™ can be determined by air meter test in trial mixes.
- High air content will most likely have a detrimental effect on strengths. For additional information, please contact AFZIR.

## STORAGE

VMA™ admixture 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.

## 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.

## DISCLAIMER OF LIABILITY

AFZIR, LLC warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within six months of the date of purchase.

AFZIR shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory.

The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production.