

## THIRD GENERATION WATER REDUCING & RETARDING ADMIXTURE

### PRODUCT

EPSILONE WR 220 is a synthetic polymer complex. It interacts chemically with cement particles in freshly mixed concrete, resulting in improved cement distribution throughout the mix. This reaction transforms the low slump characteristics of low water/cement ratio mix designs into mildly set retarded; highly workable (high slump) mixes without changes to the designed water/cement ratio.

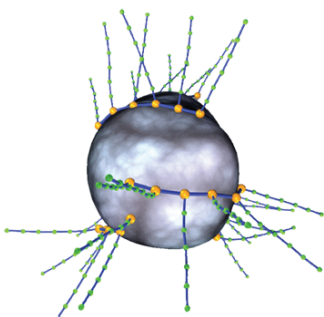
### WORKING MECHANISM

Sulphonated naphthalene- or melamine-based superplasticizer is adsorbed onto the surface of cement particles at a very early stage of the cement hydration process.

These polymer chains adsorbed to the surface increase the negative charge on the surface of cement particles, and dispersion is obtained by electrostatic repulsion.

In addition to the previous process, EPSILONE WR 220 is specially designed with MultiCarboxylate Ether with long lateral chains that improve greatly the dispersion of cement particles.

Therefore, in addition to the electrostatic repulsion which occurs at the start of the mixing process, the presence of these lateral chains generates a steric hindrance which greatly enhances the capacity of cement particles to separate and disperse. This property enables the production of concrete with extended workability retention.



Schematic shows cement particle with polymer backbone and the long lateral chains linked to it.

### PROPERTIES

Simultaneously gives increased slump without extra mixing water and retards the set of concrete, allowing more time for placing and finishing in hot weather conditions.

- Increases concrete strength at all ages and improves workability and durability.
- Excellent surface appearance in high workability
- Ease of placing and compaction without segregation
- Reduced risk of cracking

### SCOPE OF USE

EPSILONE WR 220 is recommended for all areas of use of high-performance concrete in the ready-mix industry:

- Super slump retaining concrete with equal or less water content than conventional admixtures
- Concrete mixtures containing silica fume, GGBS, or PFA
- Concrete with high resistance against aggressive media
- Long distance transport
- Hot weather concreting
- Highly durable concrete
- Mass concrete
- Pumped concrete

### CHARACTERISTICS

Appearance	Liquid (PAle Yellow)
Specific gravity @ 25°C	1.020 ± 0.02
Chloride content	NIL- BS 5075/EN 934-2

### STANDARDS

ASTM C 494 Type B & D  
BS EN 934-2  
BS 5075: Part 3

### INSTRUCTION FOR USE

EPSILONE WR 220 should be dispensed after all concrete constituents are charged in the central mixer, preferably after approximately 60% of mixing water addition.

### DOSAGE RATES

Range of dosage rates: from 200 to 1200ml per 100 kg of cementitious content.

Dosage above the recommended values can be employed. Still, the required dosage for a specific job with controlled delay in setting and workability should



be determined by in-situ trials

Admixture demand varies with w/b of the concrete, cement type, pozzolanic materials and ambient temperature.

Trials are to be conducted prior to use in order to determine required performance, including workability retention, setting, and strength development.

### EFFECT OF OVERDOSE

Overdose of EPSILONE WR 220 may result in the following:

- Delay of initial setting
- Higher workability
- Impair consistency & cohesion

Dependant upon the level of overdose, concrete mixture details and conditions involved.

### COMPATIBILITY

EPSILONE WR 220 can be used in mixtures containing:

- Silica fume
- Fly Ash
- GGBFS
- Pozzolanic Binders

EPSILONE WR 220 is not compatible with naphthalene sulfonate- and melamine sulfonate-based superplasticizers.

Consult SODAMCO's technical dept. for advice.

### PACKAGING

EPSILONE WR 220 is supplied in:  
1000 liter containers.

### STORAGE

EPSILONE WR 220 can be stored up to 1 year 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 msystem 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 application are beyond its control. It is recommended to verify with the company that the product is suitable for the intended use, and that this 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.

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