

## NEW GENERATION POLYCARBOXYLATE ETHER SUPERPLASTICIZER "EXTENDED SLUMP RETENTION"

### PRODUCT

EPSILONE HW 380 is a highly effective superplasticizer based on modified synthetic carboxylated polymers specifically designed to produce ready mix concrete with low water binder ratio and excellent workability. It can help the ready-mixed concrete industry, where more than normal slump retention and durability are required. The ability to work over a range of water binder ratios including low w/b ratios and still obtain extended slump retention allows for the manufacture of high quality concrete.

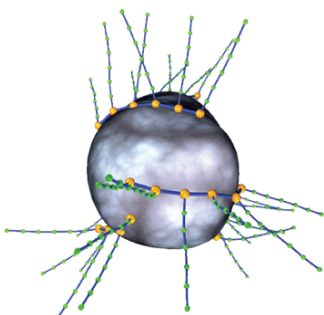
### WORKING MECHANISM

The superplasticizer based on sulphonated naphthalene or melamine is adsorbed onto the surface of cement particles at a very early stage of the 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 HW 380 is different from these superplasticizers being based on a MultiCarboxylate Ether with long lateral chains that improve greatly the dispersion.

So in addition to the electrostatic repulsion which occurs at the start of the mixing process, the presence of the lateral chains generates a steric hindrance which stabilizes the capacity of cement particles to separate and disperse. This property helps the ready mix operators with extended workability retention.



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

### PROPERTIES

- High water reducing
- Superior slump retention. Ease of delivery to point of placement
- High workability-ease of placing and compaction without segregation
- Reduced risk of cracks

- Good adhesion - ease of pumping. No bleeding
- Good workability - excellent surface appearance
- Minimal bleed water - excellent concrete quality
- High elastic modulus-superior load bearing capacity

### SCOPE OF USE

EPSILONE HW 380 is recommended for all areas of use of high performance concrete in ready mix Industry:

- Super slump retaining concrete with equal or less water content than conventional admixtures
- Concrete mixes 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
- High strength concrete

### CHARACTERISTICS

Appearance	Liquid (white yellow)
Specific gravity	1.050 ± 0.01
	1.055 ± 0.03 (KSA)
Chloride content	NIL- BS 5075/EN 934-2

### APPLICABLE STANDARD

ASTM C 494 Types D, F & G  
BS EN 934-2  
BS 5075: Part 3

### INSTRUCTION FOR USE

EPSILONE HW 380 should be dispensed after all concrete constituents are charged in the central mixer preferably after approximately 60% of water addition.

### DOSAGE RATES

Range of dosage rates: from 600 to 2200 ml. ml per 100 Kg of cementitious content.

Dosage above the recommended values can be practiced. Still, the required dosage for a specific job with controlled delay in setting and workability should be determined by in-situ trials

Dosages varies dependant on water/cementitious ratio of the concrete, cement type, pozzolanic



materials and ambient temperatures.  
Trials are to be conducted prior to determine required performances.

### EFFECT OF OVERDOSE

Overdose of EPSILONE HW 380 may result in the following:

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

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

### COMPATIBILITY

EPSILONE HW 380 can be used in mixes containing:

- Silica fume
- Fly Ash
- GGBFS
- Pozzolanic Binders

EPSILONE HW 380 is not compatible with NSF & MSF superplasticizers.

Consult SODAMCO's technical dept. for advice.

### PACKAGING

EPSILONE HW 380 is supplied in:  
1000 liter containers.

### STORAGE

EPSILONE HW 380 can be stored up to 1 year from manufacturing date, out of direct UV light 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 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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