

## PRODUCT DATA SHEET

# PERAMIX SC-50

## CONCRETE UPGRADING CLASS ADMIXTURE

### DESCRIPTION

PERAMIX SC-50 ADMIXTURE is a concrete class upgrading liquid admixture, functioning as an inorganic oxidizer of micrometal elements contained in cementitious materials to provide extension of the cement gel surface by decay hydration of the cement grain from 100 µm to 10µm. PERAMIX SC-50 offers a cost-effective solution to transform conventional concrete into high-performance concrete without the need for additional admixtures or supplements.

### USES

- Pervious concrete;
- Waterproofing;
- Production of high-performance concrete;
- Production of liquid impermeable concrete, including crude oil;
- Fineness and corrosion resistant precast concrete;
- Abrasion and salt resistant trafficable concrete;
- Non-shrinking concrete for flat works;
- PERAMIX SC-50 can be batched with salt contaminated aggregate and seawater, producing durable concrete for docks, harbors, ports, and sea defenses.

### FEATURES AND BENEFITS

- Cost reductions. For conventional concrete mixes, PERAMIX SC-50 will solely replace the following admixtures and supplementary materials:
  - Water reducers;

- Superplasticizers;
- Pozzalons;
- Silica fume;
- Fly ash;
- Membranes;
- Fine fillers;
- Fibers;
- Density and strength gainers.
- Dosage reduction of water at the rate of 10%-30% in conventional concrete mixes;
- No surface preparation (remove loose materials);
- High cement hydration;
- Yield of mixed batch is higher by 8% to 14% of cement gel;
- Early strengthening at 3rd to 7th day;
- Compressive strength is increased by up to 25%;
- Shrinkage is lower at 2 to 3 times;
- Exothermic heat is lower at 30% to 50%;
- 100% water impermeability at 50mm concrete thick layer;
- Strong adhesion to any porous material;
- Works with concrete in ambient temperature range of -20°C to 40°C;
- Increased pumpability and workability;
- No shrinkage cracks, flakes, efflorescence, slid areas, and bleeding;
- Highest resistance to chemical and climate corrosions;
- Highest freeze-thaw resistance;
- Mixing for up to 5 hours keeps concrete batch revived with approximately 20% slump reduction; however, workability will be the same;
- No curing is required.

## ASTM CLASSIFICATION

PERAMIX SC-50 ADMIXTURE belongs to three types of ASTM C 494:

1. Type C – cement hydration accelerator;
2. Type F – water-reducing high range admixture;
3. Type S – specific performance admixture.

## TECHNICAL DATA

- Appearance: Liquid, light-lime colour;
- Density: ~ 930 Kg/m<sup>3</sup> or 58 LB/CF;
- pH: ~ 5 ±7.

## PACKAGING

PERAMIX SC-50 is packaged in 20 kg pile or 200 kg drums.

## SHELF LIFE

Unlimited, when product is stored in standard containers and in a designated industrial environment.

## PRECAUTIONS

- Test batches and sample testing must be performed by strict compliance with manufacturer's test instructions;
- PERAMIX SC-50 is not hazardous, not flammable and not explosive for applications, transportation, and storage;
- In all cases, consult the Material Safety Data Sheet (MSDS) before use

## SAFETY

Operation with PERAMIX SC-50 is similar to cement mixing jobs. Always, use rubber gloves. In case PERAMIX SC-50 is swallowed or gets in contact with eyes, rinse and wash abundantly with water. Refer to the MSDS for additional health and safety information.

## DIRECTION FOR USE

### Dosage:

1. PERAMIX SC-50 is applicable by volumetric ratio of 2 kg/m<sup>3</sup> of concrete mix.
2. PERAMIX SC-50 is applicable by weight ratio 0.75 Kg per 100 Kg of cement.

### Water Cement Ratio:

Keep the water-to-cement ratio variable for the major applications such as:

- Flat works with conventional concrete mixes at 0.40 to 0.45;
- Precast concrete mixes, liquids/gases containing structures at 0.35 to 0.434;
- Plaster, stucco, gunite, and shotcrete mixes at 0.378 to 0.417.

### Slump:

- Do not apply any other chemicals or supplementary materials;
- Slump should be at 65mm to 75mm. This slump provides stable pumpability over 45m. PCE can be added as plasticiser for better pumping longer distances added at 1/3 the normal dosage.

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