PERAMIX SC-50 CONCRETE ADMIXTURE

Technical Data Sheet :**PERAMIX SC-50ADMIXTURE**

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. Performs as a gel crystalline concrete waterproofer, non - shrinking agent; increases density and strength.

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 at thermal range: 928 ÷ 1175 [Kg/m^3] or 58÷69 [LB/CF].
- Specific Gravity: 0.995 (average)
- pH: 5 ÷ 7

FUNCTIONAL RECOGNITION

PERAMIX SC-50 ADMIXTURE High Performance Concrete is recognised by Continuous Structural Density with an **accomplished structure forming Bond process,** by chemical compaction of water-soluble ingredients. Highest resistance to harsh environmental conditions **by non-reactive concrete embodiments** and complete, integral impermeability to liquids and gases.

PERAMIX SC-50 ADMIXTURE improves concrete properties in five ways:

- Provides **reduction in bleeding** and **increases workability**;
- Reacts with calcium hydroxide to produce a **greater solids volume** of new insoluble formations, providing a uniform capillarity of cement stone without hydraulic thresholds;
- Reacts with caustic alkalis (Na_2O and K_2O) and their salts of concrete to provide **new insoluble alkali** formations;
- Results in a **filler effect** in which its fine particles bridge the spaces between cement grains and the spaces between cement grains and aggregates;
- Promotes to rapidly bind chlorides of concrete to insoluble calcium hydrochloride aluminates.

PRIMARY APPLICATIONS

- Production of High performance concrete from conventional concrete mixes.
- Production of Liquid Impermeable concrete, (liquids including water, crude oil sugars and acids).
- Spalding resistant Concrete for tanks and irrigation Structures.
- Corrosion Resistant Precast Concrete.
- Abrasion & Salt resistant to trafficable concrete
- Non-shrinking Concrete for Flat Works, Overlays of Floors and Roads.
- **PERAMIX SC-50 ADMIXTURE** Can be batched with salt contaminated aggregate. Seawater can also be used for Batching water to produce Durable long-lasting concrete for Docks Harbours Ports and sea defences.

BATCH INSTALLATION

1. Minimal volume of the concrete/mortar batch is limited to 1 cu.ft (~0.03 m^3).

2. For cast in place applications, do not apply primers or bonding agents to the surface, as they will act as bond breakers. Soak the surface with water until damp, and no longer thirsty for water, then apply **concrete** made with **PERAMIX ADMIXTURE.**

3. No curing is needed.**No** plastic or membrane coverings should be used.

DOSAGE

1.**PERAMIX ADMIX** is applicable by volumetric ratio of **2 kg/m^3** of concrete mix.
2.**PERAMIX ADMIX** 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

1. Do not apply any other chemicals or supplementary materials.
2. 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.

EXPECTED RESULTS

1. Highest volume of cement hydration completes concrete formation without curing. No curing required.
2. Exothermic heat is lower at 30% to 50%. There are no shrinkage cracks or slab curling. No fibers required.
3. Yield of mixed batch is higher by 8% to 14% of cement gel.

4. Water impermeability of plaster at 19mm thick and 50mm of concrete thick is 100%, respectively. No isolation required.
5. Early strengthening on 1st to 3d day at 25%. No strength gainers and excessive

rebar required.
6. Highest resistance to chemical and climate corrosions due to complete hydration of cement grains.
7.**PERAMIX ADMIX** upgrades any conventional concrete batch to High Performance Concrete.

ESSENTIALS

1. Mixing up to 5 hours keeps the concrete batch revived with ~20% slump reduction, but workability will be the same.

2. Applicable in the range of the ambient temperatures from -4°F up to 104°F or -22°C up to 40°C without isolation measures.

3. Concrete Curing is not required for most climatic & environmental conditions.
4. Do not place control and trial specimens into the same curing water tank during lab tests. (Because of cross contamination)

PACKAGING

PERAMIX SC-50 ADMIX is packaged in 200kg drums .

ECONOMY

Mix designs with **PERAMIX SC-50 ADMIX** are very simple and use only cement, sand, aggregate, water and **PERAMIX SC-50 ADMIX**. Self curing - No curing labor or shrinkage compensating materials.

PERAMIX SC-50 ADMIX

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 in strict compliance with manufacturer's test instructions;
PERAMIX SC-50 ADMIX is non-hazardous, non-flammable and non-explosive for application, transportation, and storage;
- In all cases, consult the Material Safety Data Sheet (MSDS) before use.

SAFETY

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