

DESCRIPTION

GS 110 is a waterproofing cementitious, **calcium chloride - free** material, which is integral to parts of concrete to form a crystallization process. GS 110's chemical agents will react with water, a non-soluble crystalline was then generated throughout the capillary voids in the concrete. This crystalline is highly resistant to water, and it performs well even under extreme conditions such as pressures or aggressive chemicals. GS 110 is also recommended for use in minor repair to concrete structure. Cracks or voids up to a width of 1.0 millimeter can be seal up anytime by using GS 110, to form a crystallization process. The material used is cement based supplied in powder form and formulated from Portland cement, fine quartz sand and active chemicals.

Should the surface develop shrinkage cracks, the unique qualities of this material react with the moisture to seal off the leakage even against high water pressure.

USAGE

GS 110 can be used for most of the concrete structure where the structure will expose to water contact later. These included slabs, underground walls, ground beams and floors, water storage structures, marine and costal structures, any fresh concrete etc.

Besides that, it can be used as an additive agent to cement grout in new concrete to protect concrete structures from water attacks. The protection against water can be permanent once the crystallization processes fully growth. The same principle applies for plugging to leakage in concrete structure. GS 110 to be mixed in concrete mix.

GENERAL PROCEDURES

Dosage of GS 110 in every batch of concrete shall go by percentage of volume in mtr.cube. a guidelines is recommended below for the percentage dosage rates of GS 110 admixture to the cementitious Ordinary Portland Cement (OPC) and reactive Pozzolans (e.g.: reactive fly ash) content of the concrete.

Example:

CEMENTATIOUS CONTENT / MTR.CUBE	% OF GS 110 / MTR.CUBE
300 KG	0.7 %

Calculation for Dosage rate of GS 110:
(300 kg OPC including Reactive Pozzolans) @ 0.7% = 2.1 kg dose rate)

For corrosive coastal structure, chemical storage, marine and constant high water pressure applications, we recommend consulting GS products Representatives for technical assistance.

BATCHING PROCEDURE

GS 110 can be added into concrete either in concrete batch plant or concrete mixing trucks. The dosage of GS 110 shall follow consultants specification or refer to GS products Representatives.

In concrete batching plant, it is recommended that the GS 110 shall be added lastly into concrete after discharge of cement, sands and aggregates, a through mix between 4 – 8 minutes is encouraged. The same method can be applied to concrete mixing truck. GS 110 can be added into concrete mixing truck on site.

It is recommended that the amount of water shall be determined during the trial mix stage as GS 110 typically reduces the water requirement by 5 – 20 ltrs. per cubic meter. It can be adjusted accordingly to trial mix result under the approval of the consultants.

It also acts as a plasticizer. Therefore no other plasticizer may not be required in a concrete mix using GS 110.

Water is an important agent to form breathable crystallization process. Initially, water will access to concrete through porous portion of concrete surface. GS 110 Admixture will then react with water and crystallization process grows. This process should grow continuously to throughout the depth of concrete. Therefore, curing is very important to concrete to avoid “dehydrate” to it.

SETTING TIME

Concrete added with GS 110 Admixture may retard the setting time of concrete, subject to different mix design. Therefore a trial mix is encouraged to carry out to determine the setting time, and also the workability of concrete. The design mix and trial mix should be approved by the consultants.

CONSTRUCTION JOINTS

The central line of all construction joints must be grooved and then grouted or filled properly with crystalline material.

PROCESS OF CURING

Curing to concrete is essential to enable the GS 110 crystallization optimum growth at earliest possible time. If possible, it is recommended that curing process take place immediately once final set achieved.

Concrete shall be protected and cured under the formwork, and remain in place for approximate seven (7) days before dismantling is started. Keep moist to all exposed surfaces.

BACKFILLING

Normal backfilling is is allowed after concrete was cured. However in the event that backfilling was done less than seven (7) days time upon initial set, it is recommended that backfilling material must keep moist so to avoid evaporate of moist from the concrete.