

CEMTEC 120 SP

SUPERPLASTICIZER AND RETARDER FOR NORMAL AND READY-MIX CONCRETE (ASTM-C 494 TYPE D & G)

DESCRIPTION:

CEMTEC 120 SP is a concentrated ready-to-use aqueous solution of organic polymers with high plasticizing effect. **CEMTEC 120 SP** contains no chlorides and complies with ASTM specification C494 requirements for Type D and Type G admixtures.

Its specific gravity is 1.21

The fluidizing action of **CEMTEC 120 SP** provides:

SELF-LEVELING CONCRETE

A plain, 2 - 3 cm slump concrete becomes self-leveling and attains a slump of 21 cm. or more following the addition of **CEMTEC 120 SP**. The concrete is flowable and highly cohesive with no segregation.

Bleeding is usually below 0.05 cm³/cm².

COMPRESSIVE STRENGTH

A self-leveling concrete admixture with **CEMTEC 120 SP** will have the same or higher compressive strength compared to plain non-slump concrete.

SLUMP MAINTENANCE

Concrete with **CEMTEC 120 SP** maintains the self-leveling properties from 2 - 4 hours at a temperature of 20°C, depending on the type and dosage of the cement.

Beyond this time workability will decrease gradually.

HIGH STRENGTH CONCRETE

The addition of **CEMTEC 120 SP** to plain concrete allows a water reduction of up to 30 - 40%, while maintaining the same slump.

The concrete will be easy to place, non-segregable and will require a shorter vibration time compared to plain concrete with the same workability.

COMPRESSIVE STRENGTH

Compressive strength versus plain concrete at the same slump, will increase proportionally, up to 50% and over, depending on water reduction.

At early ages mechanical strength may be lower due to the retarding action of **CEMTEC 120 SP**

SLUMP MAINTENANCE

High Strength concrete obtained with **CEMTEC 120 SP** has a workability time comparable with a plain concrete at equal slump.

PERMEABILITY AND DURABILITY

CEMTEC 120 SP reduces concrete porosity and

so produces a more water-proof concrete. Observation has shown that water penetration has been reduced by factors of up to 1,000 times below that of plain concrete at the same slump.

Reduced porosity and increased water-proofness, resulting from the use of **CEMTEC 120 SP** especially if combined with CEMTEC Air Entraining Agent, provide durable concrete, with high resistance to freeze-thaw cycles and chemical agents such as sulphates, seawater, deicing salts, etc.

HOMOGENEITY

Compressive strengths in concrete treated with **CEMTEC 120 SP** have a lower variance allowing the operators to rely on more homogeneous mixes.

OTHER ADVANTAGES:

- **CEMTEC 120 SP** can be introduced in the mix at the batching plant, allowing the regular transportation and discharge of self-leveling or fluid concrete.
- Reduction in placing and vibration time, especially in highly reinforced structures.
- Better pumpability.
- Better surface finish, also applicable to light weight aggregates.
- Higher wear resistance.
- Improved bonding between concrete and reinforcing bars.
- Lower shrinkage due to reduced w/c ratio.

USES

In all types of concrete normal or ready-mix for hot weather concreting.

ADDITION RATES:

Addition rate of **CEMTEC 120 SP** ranges from 0.7 to 1.5 Liters per 100 kgs. of cement, depending on job conditions and purpose of work.

COMPATIBILITY:

CEMTEC 120 SP can be used with all types of cement and can be combined with CEMTEC Air Entraining Agent when an improved durability is required.

DISPENSING:

CEMTEC 120 SP should be added directly in the mixer. In ready-mixed concrete **CEMTEC 120 SP** can be added at the batching plant taking into account that the self-levelling property will last for 2 - 4 hours at ambient temperature.

PRECAUTIONS:

Concrete improved with **CEMTEC 120 SP** has to be carefully cured to avoid water evaporation, specially in slabs and exposed concrete. **CEMTEC 120 SP** should not be stored at a temperature below 0°C. In case of freezing, **CEMTEC 120 SP** should be heated and stirred before using.

PACKAGING

CEMTEC 120 SP is delivered in 210 ltr. drums, 1000 ltrs containers or in 10,000 ltr. bulk tanks.

TECHNICAL INFORMATION

Typical Engineering Data : the following results were developed under laboratory conditions.

Mix Design

- Cement content (opc) - 307 kg/m³
- Coarser aggregate - 64 %
- Finer aggregate - 36%

COMPRESSIVE STRENGTH

Age	Specifictation (% of Control)	Control	Cemtec 120 SP mix (% of control)
1 day	min 125	100	140
3 days	min 125	100	139
7 days	min 115	100	136
28 days	min 110	100	135

ENGINEER'S SPECIFICATION:

Concrete shall be designed in accordance with ACI Standard Recommended Practice for selecting proportions for concrete, ACI 211.

The super plasticizer admixture shall comply with ASTM Designation C-494 type D and G admixture and shall be **CEMTEC 120 SP** as manufactured by Construction Material Chemical Industries or one proved to be equivalent.

It shall be used in strict accordance with the manufacturer's recommendations.

QUALITY STATEMENT

CMCI manufacture its products at their manufacturing facility in Saudi Arabia as per the Quality Procedures certified to conform with Quality Management System described in ISO 9000 series

CMCI provides a comprehensive technical support system for its full range of high performance construction products. CMCI also offers full technical field support to consultants, Architects, Contractors, applicators and End Users

The Technical Specification information and recommendation given are based on the current technical knowledge and the user or his representative is recommended to check the suitability of the product. CMCI reserves the right to amend the technical characteristic of the product as part of ongoing research and development. As the work execution is beyond the direct and continuous control of CMCI no guaranty and or responsibility is assumed on the performance of work completion executed with use of our products.