KEM SUPLAST L10

Superplasticizer for High Early Strength

Ref. CA/SP-V1-0512

KEM SUPLAST L10 is a Sulphonated melamine based polycondensation product. KEM SUPLAST L10 is a highly effective superplasticizer with manifold applications. KEM SUPLAST L10 is permitted for prestressed and precast concrete. KEM SUPLAST L10 virtually contains no chloride, so there is no corrosion hazard to the steel reinforcement.

Uses

1. Concrete: KEM SUPLAST L10 is dosed into the concrete preferably towards the end of the mixing process. It can also be added together with the mixing water. The higher viscosity of this product, however, should be considered in regard to metering and pump systems in use.

1.1 Improvement of consistency: The dosage of 0.5 - 1 % KEM SUPLAST L10 by the weight of cement improves the initial stiff consistency to plastic consistency. Initial plastic consistency is improved to standard soft consistency, and initial soft consistency yields flowing concrete when adding this dosage.

Effects Achievable

- Strong concrete plasticizing without any tendency to segregation.
- Reduced time for pouring.
- Less vibration.
- Improvement of pump ability.
- Close-textured fair-faced surfaces without honey combs.
- Good workability of lightweight aggregate concrete in the soft consistency range, without floating up effect of lightweight aggregates.

1.2 Increase of early and final strengths by water reduction:

By adding 0.75-1.5 % KEM SUPLAST L10 by the weight of cement, up to 30% of the mixing water can be saved without changing the consistency.

Effects achievable

- Increase of compressive and flexural strengths, in particular of early strengths.
- Reduced demoulding times.
- Lower energy costs when applying heat curing.
- Improvement of resistance to freezing and thawing.
- Reduction of permeability to water.
- Improvement of resistance against chemical attacks.
- Improvement of abrasion resistance.
- Improvement of new to old concrete bond.
- Diminution in rebound of shotcrete.

1.3 Simultaneous improvement of consistency and increase of strength:

By dosing 1.25-2.00 % KEM SUPLAST L10 by the weight of cement it is possible to achieve an improvement of consistency and an increase of strength simultaneously.

1.4 Optimal utilization of the cement component in concrete:

Due to both the dispersing and strong plasticizing effect of KEM SUPLAST L10 the cement component in concrete can be adjusted to its optimal content. The dosage is 0.5 - 1.0 % KEM SUPLAST L10 by the weight of cement.

Effects Achievable

- Technically and economically unjustified high cement contents can be avoided.
- Reduced shrinkage and creep.
- Reduced tendency to crack formation.
- Increase of early and final strengths of cement with insufficient properties.

Job sites which can be catered with suitable cement of constant quality only hardly or causing high costs. In situ concrete or precast elements with the aim to run the entire production with only one type of cement of lower strength.

2. Cement-bound mortars and plasters :

The improvement properties referred to for concrete will also take effect when KEM SUPLAST L10 is used for mortars and plasters.

Uses and recommended dosage for cement-bound mortars and plasters

1.	Machinery sealing mortar	1.75 - 2.5%
2.	Patching mortars, leveling compounds, adhesive mortars, sealing grouts	1.75 –2. 5 %
3.	Plasters	1.75 - 1.5 %
4.	Floor Screeds	1.75 - 1.5%

Effects Achievable

- Marked increase in bond strength.
- Permits to draw out repaired spots to zero.
- Water reduction yielding higher density.
- Marked increase of hiding power of plasters containing pigments of oxide nature.
- Lowers efflorescence caused by clay matter.

3. Gypsum and Anhydrite:

Since gypsum and anhydrite are commercially available in many types with a large variety of properties, the observations made by us can not be validated in a general sense. The effects achievable depend on both origin and preliminary treatment of the gypsum or anhydrite.

Effects Achievable

- Increased hardness and abrasion resistance.
- Increased flexural and compressive strengths.
- Very strong plasticizing with anhydrite up to self-leveling floor screeds.
- Strong water reduction and therefore remarkable reduction of drying time.
- Increased water resistance.
- Increased thermal stability.

Uses and recommended dosage for gypsum and anhydrite:

Leveling compounds	0.5-1.75%

Advantages

- KEM SUPLAST L10 has a strong plasticizing effect.
- It is absorbed on the surface of the hydraulic binding agents and of the fine aggregate particles, where it forms a lubricating film, thus reducing the inner friction of the heterogeneous fresh mix.
- In addition, KEM SUPLAST L10 has a strong dispersing effect even the surface tension of water is not being reduced.
- The hydraulic binding agents are better utilized by this strong dispersing effect.
- KEM SUPLAST L10 provides thyrotrophic properties and a good inner cohesion to the fresh building materials mix, thus avoiding segregation and bleeding phenomena even at extremely good flow ability.

Typical Properties

Colour	: Clear liquid
Sp. Gravity	: 1.20 ± 0.02
pH value	: 10 – 11.5
Miscibility with water	: In any ratio

Standards

ASTM C 494, Types F, British Standards BS 5075: Part 3.

Packaging

30/100/200 LTR.

Storage and Shelf life

- Storage : In its closed original packing, protected from excessive heat
- Shelf life : 12 months.

Technical Service

Chembond has established itself in various fields on the basis of its dependable technical service. For this purpose, we maintain a well equipped laboratory for research & quality assurance of all products. Our experienced personnel are always on call and would always be available for product demonstrations and product performance monitoring.

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