

Description: PC ER 50 is high-performance polycarboxylate ether (PCE) base polymer synthesized through controlled radical polymerization technology.

It is specifically engineered to provide both high water reduction and accelerated early strength development in superplasticizer formulations. The optimized molecular structure ensures rapid adsorption onto cement particles, enhancing early hydration kinetics while maintaining strong dispersion efficiency.

Technical Properties:

Chemical Content	Polycarboxylate polymer
Appearance	Liquid
Color	Colorless to pale yellow
Solid Content	50 ± 1 %
pH	4 - 6
Density (20 °C)	1.09 – 1.11 g/cm ³
Viscosity (25°C)	500 ± 50 mPa·s
Chloride Content (%)	< 0.1
Alkaline Content (%)	< 5
Water Solubility	Completely soluble
Freezing	-10 °C

Advantage:

- Provides up to 35–40% water reduction potential
- Significantly increases 1-day and 3-day compressive strength
- Accelerates strength gain even at low curing temperatures
- Reduces demolding time in precast production
- Enables low water/cement ratio concrete
- Improves ultimate compressive strength
- Enhances concrete density and impermeability
- Improves surface finish quality
- Reduces bleeding and segregation
- Maintains stable rheology during placement it has a high alkaline tolerance.
- It works in harmony with all cement types.

Area of Use:

- Precast concrete admixtures.
- Steam-cured concrete systems.
- Fast-track construction systems.
- Cold weather concrete admixtures.
- High-performance concrete production.
- Ready-mix concrete requiring early strength.

Method of Application:

PC ER 50 is intended to be used as a primary dispersing component in the production of concrete admixtures.

- The product should be incorporated into the admixture formulation under continuous mechanical stirring.
- It can be blended with water, slump retention polymers, set regulators, defoamers, or other functional additives depending on the targeted performance.
- Dilution with deionized or clean industrial water is recommended when necessary.
- Mixing time and sequence should be optimized according to production equipment and formulation design.
- Laboratory trials must be conducted to determine the optimum dosage and combination ratio before industrial production.

Packing: 1000 kg container Bulk

Precautions in Application:

- Do not exceed the recommended dosage without prior laboratory verification.
- Always perform trial mixes before full-scale production.
- Do not add directly to dry cement; ensure addition into mixing water or fresh concrete.
- Adjust dosage in case of changes in cement type, aggregate grading, mineral additions, or ambient temperature.
- Protect the product from frost and direct sunlight.
- Ensure proper mixing time to achieve homogeneous distribution.
- Compatibility with other admixtures must be tested before combined use.
- Use appropriate personal protective equipment during handling.
- This product must not be blended with naphthalene sulfonate-based polymers, as incompatibility may lead to performance instability, phase separation, or loss of water-reducing efficiency.

Compatibility:

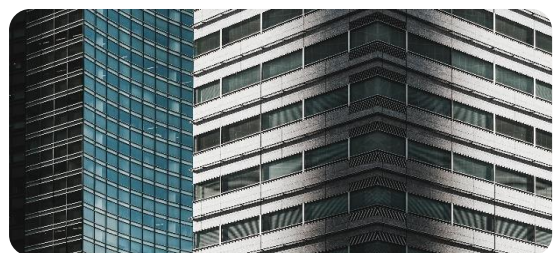
PC ER 50 shows broad compatibility with most commonly used admixture components and cement types. However, compatibility testing is strongly recommended prior to large-scale production.

Compatible with:

- Portland cement (CEM I).
- Blended cements (CEM II, CEM III, etc.).
- Fly ash, slag, silica fume.
- Lignosulfonate based admixtures.
- Retarders and accelerators (dosage optimization required).
- Defoamers and viscosity modifying agents.

Precautions in Application:

- Avoid contamination with foreign materials.
- Protect from freezing. If frozen, thaw at room temperature and mix thoroughly before use.
- Avoid prolonged exposure to high temperatures.
- Use corrosion-resistant tanks and transfer lines.
- Do not mix with strong oxidizing agents.
- Ensure proper mixing to prevent phase separation during dilution.
- Improper formulation or incorrect dosage may negatively affect setting time and performance of final concrete admixture.



Cleaning: PC ER 50 admixture can be washed with fresh cold water and should not be allowed enter sewers or open bodies of water.

Storage and Shelf Life: Must be stored at temperatures between +5°C and +35°C. Under proper storing conditions, the product's shelf life is 12 months from production date if kept in original packaging unopened and undamaged. Packaged products must be shaken before use.

Security Information: Use protective clothes, gloves, glasses and mask compatible with Health and Safety regulations during the application. It should not contact skin and eyes. In case it contacts to skin and eyes, rinse it with water and if swallowed ask for medical help. Food and beverage should not be allowed in the application area. It should be stored at the reach out of the children. The Material Safety Data Sheet (MSDS) should be read for detailed information.