TECHNICAL DATA SHEET

HYDROBLOC
BUILT ON PERFORMANCE

HYDROBLOC PCSP 100

Polycarboxylate Ether (PCE) Powder-Based High-Range Water-Reducing Superplasticizer

Product Description:

HYDROBLOC PCSP 100 is a high-performance polycarboxylate ether (PCE) powder superplasticizer developed for high-strength and high-performance cementitious systems. It provides excellent water reduction, cement particle dispersion, workability, slump retention, and early and ultimate strength development.

Its powder form makes it particularly suitable for dry-mix mortars, concrete admixtures, UHPC, SCC, repair mortars, tile adhesives, cementitious waterproofing products, self-leveling compounds, and other high-performance concrete systems.

Key Features & Benefits:

- Water reduction of up to 35%
- Excellent cement particle dispersion
- Improves flowability and workability
- Excellent slump retention
- Enhances early and ultimate compressive strength
- Reduces segregation and bleeding
- Improves pumpability and surface finish
- Produces dense and durable cementitious systems
- Low chloride content
- Suitable for dry-mix formulations
- Compatible with most Portland cements and supplementary cementitious materials

Areas Of Application:

- Ready-mix concrete
- Precast concrete
- Self-Compacting Concrete (SCC)
- High-Strength Concrete (HSC)
- Ultra-High-Performance Concrete (UHPC)
- Cementitious repair mortars
- Non-shrink grouts
- Self-leveling compounds
- Tile adhesives
- Cementitious waterproofing coatings
- Dry-mix mortar formulations

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Mixing Instructions

Dry-Mix Products

Add HYDROBLOC PCSP 100 directly to the dry ingredients during manufacturing. Mix thoroughly until the powder is uniformly dispersed throughout the formulation before packaging

Concrete Production

Add HYDROBLOC PCSP 100 with the cementitious materials or pre-dissolve it in the mixing water before batching. Provide sufficient mixing time to achieve complete and uniform dispersion.

Application Guidelines:

- Avoid overdosing, as excessive dosage may cause delayed setting, segregation, or excessive flow.
- Maintain consistent mixing procedures for every batch.
- Conduct preliminary trials whenever the cement source or formulation changes.
- Do not mix directly with other chemical admixtures before compatibility testing.

Compatibility

HYDROBLOC PCSP 100 is generally compatible with:

- Ordinary Portland Cement (OPC)
- Sulphate-Resistant Cement (SRC)
- Pozzolanic cement
- Fly ash
- Ground Granulated Blast Furnace Slag (GGBS)
- Silica fume and microsilica
- Limestone powder
- Metakaolin

Compatibility with other chemical admixtures must be confirmed through preliminary laboratory testing before use

Packaging:

- Supplied in 25 kg moisture-resistant bags
- Custom packaging may be available upon request

Storage & Shelf life:

Store in the original unopened packaging in a cool, dry, and well-ventilated area. Protect the product from moisture, humidity, direct sunlight, and extreme temperatures.

Shelf life is 12 months from the date of manufacture when stored under the recommended conditions

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Health & Safety:

- Avoid inhalation of dust.
- Wear protective gloves, safety glasses, and a suitable dust mask during handling.
- Avoid contact with the eyes and prolonged contact with the skin.
- Wash hands thoroughly after use.
- Refer to the relevant Safety Data Sheet for complete handling, first-aid, and disposal information.

Quality Assurance

HYDROBLOC PCSP 100 is manufactured under controlled quality procedures. Each production batch is tested to ensure consistent quality and compliance with specified requirements for water reduction, strength development, chloride content, alkali content, moisture, fineness, and pH.

Technical Data:

Property	Typical Value
Appearance	Free-flowing white to off-white powder
Chemical Base	Polycarboxylate Ether (PCE)
Solid Content	99%
Moisture Content	≤1.0%
pH of 10% Solution	4.8
Chloride Content	0.03%
Alkali Content	1.0%
Water Reduction	Up to 35%
Air Content	Approximately 2.8%
Recommended Dosage	0.20–0.50% by weight of cement
Typical Optimum Dosage	Approximately 0.30% by weight of cement

The stated values are based on the manufacturer's certificate of analysis and standard laboratory testing. Results may vary depending on the materials and testing conditions used.

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Performance Characteristics

At a dosage of approximately 0.30% by weight of cement, HYDROBLOC PCSP 100 typically provides:

Performance Parameter	Typical Result
Water Reduction	Up to 35%
Bleeding Reduction	Excellent
Air Entrainment	Low
Slump Retention	Excellent
Early Strength Development	Excellent
Ultimate Strength Development	Excellent
Pumpability	Excellent
Surface Finish	Improved
Concrete Density	Increased

Recommended Dosage

Application	Dosage by Weight of Cement
Dry-Mix Mortars	0.15–0.30%
Tile Adhesives	0.15–0.30%
Waterproofing Coatings	0.20–0.35%
Repair Mortars	0.20–0.40%
Self-Leveling Compounds	0.25–0.45%
High-Strength Concrete	0.25–0.50%
SCC and UHPC	0.30–0.60%

The optimum dosage must be established through laboratory and site trials using the actual cement, aggregates, additives, and supplementary cementitious materials intended for the application.