

CHEMFIT FASTCAST PCE720

High Early Strength PCE Admixture – For Precast & Fast Stripping Applications

PRODUCT DESCRIPTION

ChemFit FastCast PCE720 is a high early strength polycarboxylate ether (PCE) based superplasticizer specifically formulated for precast and fast stripping applications. This advanced admixture combines ultra-high water reduction with accelerated early strength development, enabling rapid formwork turnover and increased production efficiency. The PCE technology ensures excellent workability retention while promoting rapid strength gain without sacrificing ultimate strength or durability.

PRIMARY APPLICATIONS

ChemFit FastCast PCE720 is recommended for use in conditions such as:

- Precast concrete elements requiring rapid formwork stripping
- Prestressed concrete beams, slabs, and piles
- Concrete pipes, manholes, and culverts
- Block paving and masonry products
- Rapid repair concretes and patching mortars
- Cold weather concreting where early strength is critical
- Emergency infrastructure repairs requiring quick opening to traffic
- High-productivity precast yards with multiple daily cycles
- Tilt-up construction panels

KEY FEATURES AND BENEFITS

- **High early strength** – Achieves stripping strength in 6-12 hours (depending on temperature and mix design)
- **PCE technology** – Provides ultra-high water reduction (30-40%) for dense, high-strength concrete
- **Fast formwork turnover** – Enables multiple casting cycles per day
- **Accelerated strength gain** – Increases early compressive and tensile strength without affecting ultimate strength
- **Excellent workability retention** – Maintains flowability during placement
- **Reduced cycle times** – Increases production efficiency in precast operations
- **Chloride-free** – Safe for prestressed and reinforced concrete (non-corrosive)
- **Low dosage requirement** – Cost-effective performance at economical rates

- **Compatible with steam curing** – Enhances accelerated curing efficiency
- **Liquid form** – Easy to dispense and batch accurately

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Liquid
Color	Clear to slightly hazy / Light amber
Specific Gravity	1.06 – 1.10 at 25°C
pH Value	5.5 – 7.5
Chloride Content	Nil ($\leq 0.05\%$) – Non-corrosive to rebar
Alkali Content	< 1.0%
Freezing Point	0°C
Water Reduction	30 – 40%
Early Strength Gain	150 – 250% of control at 12 hours (depending on dosage)
Set Time (Initial)	Slight acceleration (30 – 90 minutes reduction vs. control)

PACKAGING AND STORAGE

Packaging:

- 200 L drums
- 1000 L IBCs (Intermediate Bulk Containers)

Storage:

- Store in original sealed containers at +5°C to +35°C
- Protect from direct sunlight, frost, and extreme heat
- If frozen, slowly thaw and agitate before use (do not use direct heat)
- Avoid contamination with water or other chemicals

Shelf life:

- 12 months from date of manufacture

DOSAGE AND COVERAGE RATES

The recommended dosage of **ChemFit FastCast PCE720** is **0.5% to 1.5% by weight of cementitious material**.

- **Low dosage (0.5% – 0.8%):** Provides moderate early strength gain (150-200% of control at 12 hours) with good water reduction for general precast applications
- **Medium dosage (0.8% – 1.2%):** Delivers high early strength (200-250% of control at 12 hours) with excellent water reduction for fast stripping requirements
- **High dosage (1.2% – 1.5%):** Produces maximum early strength (250%+ of control at 12 hours) with ultra-high water reduction for critical rapid turnaround applications
- **Per 50 kg cement bag:** Dosage ranges from 0.25 to 0.75 kg (approximately 220 to 650 ml) per bag
- **Yield per 200 L drum:** Approximately 530 to 1,600 bags of cement (26 to 80 tons of cement), based on 1.0% dosage
- **Yield per 1000 L IBC:** Approximately 2,650 to 8,000 bags of cement (132 to 400 tons of cement), based on 1.0% dosage

NOTE: Concrete trial mixes shall be carried out to confirm optimal dosage for specific project requirements. For cold weather concreting (below 15°C), higher dosages (1.0% – 1.5%) are recommended to achieve desired early strength. For steam curing applications, dosages of 0.8% – 1.2% typically provide optimal results.

APPLICATION GUIDELINES

ChemFit FastCast PCE720 should be added directly to the mixing water or to the wet concrete after 70% of the mixing water has been added. For optimal performance, addition of the admixture to the concrete mix after the cement and aggregates have been wetted (delayed addition method) can significantly enhance water reduction and early strength development. The concrete should be mixed for a minimum of 2 to 3 minutes to ensure uniform dispersion of the admixture. This product is compatible with all standard Portland cements, blended cements, and most supplementary cementitious materials such as slag, fly ash, and silica fume. Do not pre-mix **ChemFit FastCast PCE720** with other admixtures (including retarders or air entrainers) in concentrated form; add them separately to the mix, avoiding contact at the same point. If overdosed, excessive acceleration and potential flash setting may occur; reduce dosage in subsequent batches. For best results, add this admixture after other admixtures. For steam curing, apply heat after an initial resting period of 1-2 hours for optimal strength development. For cold weather concreting (below 10°C), use heated mixing water and protect concrete from freezing during the early strength gain period.

HEALTH AND SAFETY

ChemFit FastCast PCE720 is not classified as hazardous under normal use. However, it may cause mild eye irritation, so if eye contact occurs, rinse thoroughly with water for 15 minutes. For skin contact, wash with soap and water. If swallowed, do not induce vomiting; instead rinse the mouth and drink water, then seek medical advice. Use nitrile gloves and goggles during handling. Refer to the Safety Data Sheet for detailed information.

CLEANG OF TOOLS

Clean all batching equipment, measuring containers, and spillages with water immediately after use. Dried or cured material may require mechanical removal.

APPROVALS AND STANDARDS

ChemFit FastCast PCE720 conforms to the following standards:

- **ASTM C494 / C494M** – Type A (Water Reducing Admixture)
- **ASTM C494 / C494M** – Type C (Accelerating Admixture)
- **ASTM C494 / C494M** – Type F (High Range Water Reducing Admixture)

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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