



TANGSHAN POLAR BEAR BUILDING MATERIAL CO., LTD

174 West Zhaoshang Rd. Leizhuang, Luanxian County Tangshan, Hebei 063705 China

Beijing Office

FAST HARDENING CRACK-RESISTANT HIGH-BELITE SULPHOALUMINATE CEMENT

Fast setting | High early strength | Low shrinkage | Flooring and repair mortar solution

PRODUCT OVERVIEW

Fast Hardening Crack-Resistant High-Belite Sulphoaluminate Cement is a special composite cement produced from calcium sulphoaluminate cement clinker, high-belite cement clinker, gypsum-based setting regulator, slag and other cementitious materials.

The product is designed for cement-based mortar and flooring systems requiring fast setting, high early strength and reduced cracking risk. Controlled ettringite formation provides micro-expansion for shrinkage compensation, while the high-belite phase contributes low heat release and stable strength development.

KEY BENEFITS

Fast Setting	High Early Strength	Crack Resistance
Initial setting around 20 min and final setting around 25 min, suitable for rapid construction systems.	Typical compressive strength reaches about 24.0 MPa at 6 hours and 48.4 MPa at 28 days.	Controlled micro-expansion helps compensate shrinkage and reduce cracking risk.
Wear Resistance	Durability	Low Alkali for GRC
Suitable for industrial flooring, wear-resistant topping and heavy-duty surface materials.	Good resistance to permeability, salt attack, sulphate environment and acid corrosion after proper formulation.	The cement system can be adjusted for low-alkali GRC applications, helping improve glass fiber durability.

TYPICAL APPLICATIONS

- Rapid repair mortar for roads, bridges, airport pavement, industrial floors and parking areas.
- Industrial flooring, wear-resistant flooring, fast-opening floor topping and hardener systems.
- Fast-drying self-leveling compound, floor leveling mortar and high-performance dry mix mortar.
- GRC/GFRC products, low-alkali fiber-reinforced cement products and decorative precast components.
- Non-shrink grout, anchoring mortar, high-strength repair mortar and precast small components.
- Mortar systems requiring reduced shrinkage, high early strength, abrasion resistance or permeability resistance.

TECHNICAL DATA

Item	Typical value / requirement
Appearance	Grey powder cement
Strength grade	42.5 grade
Specific surface area	Standard $\geq 400 \text{ m}^2/\text{kg}$; typical test value about $475 \text{ m}^2/\text{kg}$
Setting time	Initial about 20 min; final about 25 min
Flexural strength	6 h: about 5.7 MPa; 7 d: about 7.4 MPa; 28 d: about 7.5 MPa
Compressive strength	6 h: about 24.0 MPa; 7 d: about 45.1 MPa; 28 d: about 48.4 MPa
Free expansion rate	28 d in water: about 0.061%; 28 d in air: about -0.023%
Recommended use	Use as cement component in optimized dry mix mortar, flooring, repair and precast formulations

DIRECTIONS FOR USE

- The product should be used as a special cement component. Final formulation must be verified by laboratory trial mix according to aggregate, additives, water-cement ratio and target application.
- Control water addition and curing condition. Proper moist curing helps expansion products develop and reduces early shrinkage cracking.
- For self-leveling, repair mortar, grout or GRC systems, adjust retarder, water reducer, defoamer, polymer and other additives according to working time and performance targets.
- Avoid using the product as ordinary masonry or plastering cement without formulation design, as the fast setting property may reduce open time.

PACKAGING AND STORAGE

- 25 kg bags
- 1,000 kg jumbo bags / bulk bags
- Store in a dry, covered and well-ventilated place. Protect from moisture and rain. Use as soon as possible after opening.

PRODUCT POSITIONING

- Main focus: repair mortar, industrial flooring, wear-resistant flooring, self-leveling compound, grout and high-performance dry mix mortar.



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- Not positioned as ordinary masonry cement or general plastering cement. It should be used where fast strength gain, low shrinkage and durability justify formulation cost.
 - Target customers: dry mix mortar manufacturers, flooring material producers, repair mortar producers, construction chemical companies and precast component manufacturers.

FORMULATION REMINDERS

- Do not evaluate the cement alone as a finished mortar product. Final performance depends on the complete formulation system.
- Adjust setting time and workability by trial mix when using polymers, retarders, water reducers, cellulose ether or fibers.

COMPANY INFORMATION

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Note: The above values are typical data for reference. Final performance depends on formulation design, water-cement ratio, additives, aggregate, curing condition and application method.