KREVO Mix Silica

Silica-fume mineral admixture | Dense, durable concrete | Improved cohesion & impermeability

PRODUCT DESCRIPTION

KREVO Mix Silica is a powdered mineral addition based on silica-fume technology for high-performance cementitious mixes. Extremely fine reactive silica contributes to improved cohesion and retention of water in fresh concrete. During hardening, it reacts with calcium hydroxide to form additional cementitious hydration products, refining the pore structure and helping achieve a denser concrete matrix.

ADVANTAGES

- Improves cohesion, stability and pumpability of fresh concrete and shotcrete.
- Promotes higher ultimate strength and longer-term durability.
- Improves resistance to abrasion and reduces water and gas permeability.
- Helps reduce chloride ingress in durable reinforced-concrete mixes.
- Supports frost and de-icing salt resistance with suitable air entrainment.

TYPICAL USES

Shotcrete • Structural and high-strength concrete • Precast concrete elements • Pumped and slick-line concrete • Water-retaining structures • Marine and infrastructure works • Concrete requiring enhanced durability or resistance to chloride penetration

PRODUCT INFORMATION

PARAMETER	SPECIFICATION
Generic type	Fine powdered silica-fume mineral admixture for concrete
Composition	Blend of fine, latently reactive silica-based ingredients
Appearance / colour	Grey powder
Bulk density	0.65 kg/L
Total chloride ion content	Less than 0.3 mass-% (technical basis)
Packaging	25 kg bags and 1,000 kg jumbo bags
Shelf life	36 months in original sealed, properly stored packaging
Storage conditions	Keep in dry conditions; protect from moisture

PRODUCT & TECHNICAL PROPERTIES

PARAMETER / TEST	TYPICAL VALUE / GUIDANCE
Recommended dosage	5–10% by weight of cement; establish by trials
Fresh-concrete behaviour	Improved cohesion, stability and water retention
Hardened-concrete response	Higher ultimate strength; denser cement matrix
Durability contribution	Lower permeability and chloride penetration
Abrasion / gas resistance	Improved abrasion resistance and gas tightness
Frost / de-icing salts	Benefits with suitable air-entraining system
Batching / wet mixing	Add with cement and aggregates; wet mix ~60 seconds
Standard reference	EN 13263-1:2005 Table 4; confirm KREVO compliance

Application & Mixing Guidance

KREVO Mix Silica | Mix design, dispersion, batching and curing guidance

SILICA-FUME ACTION IN CONCRETE

CONTROL ITEM	TYPICAL TARGET	CHECK METHOD	ACTION
Dosage	5–10% of cement	Batch record	Trial & approve
Powder dispersion	Uniform mix	Visual / trial	Mix thoroughly
Fresh workability	Project target	Slump / flow	Confirm trials
Wet mixing	~60 seconds	Mixer record	Check uniformity
Strength / curing	Per specification	Test & records	Cure promptly

Silica-fume particles are very fine and reactive. They help improve fresh-concrete cohesion and water retention; in hardened concrete, the reaction with calcium hydroxide provides additional hydration products and a denser matrix. These effects contribute to improved strength and reduced permeability when the concrete is proportioned, placed and cured correctly.

DOSAGE & MIX DESIGN CONTROLS

STAGE	PROCEDURE / GUIDANCE
1 | Mix design	Set the target strength, exposure, cement dose and water/binder ratio.
2 | Dosage trials	Start at 5–10% of cement mass; approve final dosage by testing.
3 | Dry batching	Add powder with cement and aggregates, before gauging water.
4 | Wet mixing	Mix thoroughly; use ~60 seconds as a starting guide.
5 | Placement	Check workability; place, compact and cure without delay.

MIX COMPATIBILITY & TRIALS

Use as a mineral addition in suitably proportioned cementitious concrete and shotcrete. Establish workability, pumpability, strength and durability performance with local cement, aggregates and any other admixtures. Verify air entrainment where frost and de-icing salt exposure is critical. Never assume one trial dosage will suit all mixes.

BATCHING & DISPERSION

Recommended dosage: 5–10% by mass of cement. Select the final dosage through project-specific trial mixes. Consider the complete binder and water/binder proportions; confirm fresh consistency, hardened strength, permeability and finishing requirements before production.

INSTALLATION CONTROL	REQUIREMENT / GUIDANCE
Dosage / approval	5–10% by cement mass; use laboratory and site trials.
Material properties	Grey powder; bulk density about 0.65 kg/L.
Performance	Cohesion, density, strength and water-tightness benefits.
Dispensing / mixing	Introduce with cement and aggregates, then wet-mix ~60 s.
Packaging / storage	25 kg / 1,000 kg packs; dry storage, 36-month shelf life.

Introduce KREVO Mix Silica at the batching plant together with cement and aggregates, before adding gauging water. Blend to distribute the powder uniformly, then add the water and mix thoroughly. A wet-mixing period of approximately 60 seconds is indicated in the technical basis; adjust to the plant and verify uniformity.

PLACING, FINISHING & CURING

Apply normal good concreting practice for transport, placing, compaction, finishing and protection. Cure fresh concrete promptly, particularly in hot, windy or dry weather, to prevent premature drying. Wet hessian or an approved curing system may be used according to the project specification.

Installation & Product Support

KREVO Mix Silica | Production checks, handling limitations and product information

CONCRETE BATCHING PROCEDURE

- Review mix design and establish the required 5–10% cement-mass addition.
- Weigh the powder and add it with cement and aggregates before water.
- Mix thoroughly; use about 60 seconds wet mixing as an initial guide.
- Check uniformity, workability, strength and durability in trial batches.

PLACEMENT & QUALITY CONTROL

- Record cement mass, silica-fume dose, aggregate moisture and water addition.
- Verify concrete consistency, pumpability and stability before placement.
- Place and compact in accordance with the approved method statement.
- Protect and cure immediately to retain moisture and limit surface cracking.

LIMITATIONS & SERVICE NOTES

- Confirm dosage and concrete performance using project-specific trials.
- Proper curing is essential for high-quality silica-fume concrete.
- Do not substitute powder mass for cement without approved mix redesign.
- Check the performance of any combined chemical admixture in trials.
- Keep the powder dry; protect bags from moisture and contamination.

HEALTH, SAFETY & ENVIRONMENT

Avoid generating or inhaling dust. Use appropriate respiratory protection, gloves, goggles and protective clothing when handling powder. Keep material out of drains and waterways. Review the current Safety Data Sheet, site dust-control procedures and applicable disposal requirements before use.

QUALITY & PRODUCT INFORMATION

Performance varies with the concrete mix design, particle dispersion, dosage, water/binder ratio and curing conditions. All values in this technical sheet are indicative specifications for evaluation; final product-specific performance, compliance and durability claims require supporting KREVO test and quality-control records.

KREVO | GLOBAL CONTACTS

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