

REC GROUT EPO 23

3-COMPONENT EPOXY GROUT FOR PILE CAPPING

DESCRIPTION

REC GROUT EPO 23 is a high-strength, three-component epoxy grouting system comprising a resin, hardener, and specially graded fillers.

It is moisture-tolerant and castable, making it ideal for grouting and anchoring pile caps where excellent bond strength, dimensional stability, and chemical resistance are required.

The formulation is optimized for reliable performance in hot and tropical climates, maintaining workability and curing properties even under elevated ambient temperatures.

PRIMARY APPLICATIONS

REC GROUT EPO 23 may only be applied by trained and experienced professionals.

Typical uses include:

- High-strength grouting and topping of concrete pile caps and pile heads
- Structural filling of voids and cavities in concrete elements
- Providing a durable, moisture-resistant finish to pile tops
- Integration with suitable waterproofing systems for long-term protection

FEATURES/BENEFITS

- **High early strength** – supports rapid load transfer and reduces downtime
- **Supplied in ready-to-mix**, pre-batched units for easy and accurate on-site preparation
- **Moisture tolerant** – can be applied to dry, damp, or saturated substrates
- **Non-shrink formulation** ensures complete contact and uniform bearing
- **Excellent resistance** to corrosion and a wide range of chemicals
- **High resistance to stress**, impact, and vibration, maintaining structural integrity under heavy loading
- **Very high compressive strength** for long-term durability in demanding environments
- **Low coefficient of thermal expansion**, compatible with concrete and steel substrates
- **Superior adhesion to both steel and concrete**, ensuring permanent bonding.

TECHNICAL INFORMATION

Composition	Three-component epoxy system consisting of: • Part A – Epoxy resin base • Part B – Hardener • Part C – Specially graded, high-strength fillers
Density	~2 230 kg/m ³ (A + B + C)
Colour	Concrete Grey
Mixing Ratio	Component A : B : C = 5 : 1 : 39 by weight
Consumption	~2.2 kg /m ² /mm (Approx.)
Layer Thickness	Minimum grout depth: 10 mm Maximum grout depth: 100 mm
Product Temperature	+16 °C and +38
Ambient Air Temperature	+20 °C min. +40 °C max.
Substrate Temperature	+20 °C min. +40 °C max.
Substrate Moisture Content	≤ 4 % pbw

Dew Point	Substrate temperature during application must be at least 3 °C above dew point to avoid condensation		
Pot Life	+23 °C		~100 min
	+40 °C		~40 min
Compressive Strength	ASTM C579	Curing Time	Curing Temperature (+25 °C)
		1 day	~68 N/mm2
		7 days	~90 N/mm2
		28 days	~98 N/mm2
		Test specimen size: 50 * 50 * 50 mm	
Tensile Strength	ASTM D638	≥15 N/mm ²	
Tensile Strength in Flexure	ASTM C580	≥32 N/mm ²	
Tensile Adhesion Strength	≥2 N/mm ² concrete failure		
Water Absorption	Water penetration depth zero (mm)		

DIRECTIONS FOR USE

SUBSTRATE QUALITY

AGE & STRENGTH

Mortar and concrete should generally be at least 28 days old, or have reached the specified minimum strength required for the application. Verify the compressive strength of the substrate (concrete, natural stone, etc.) before grouting.

SURFACE CONDITION

All surfaces must be clean, sound, and free from dust, oil, grease, laitance, loose particles, curing compounds, or any existing surface treatments/coatings.

STEEL SURFACES

Prepare steel substrates by abrasive blasting or mechanical cleaning to a standard equivalent to Sa 2.5 (ISO 8501-1), ensuring a bright, metallic finish.

MOISTURE

The substrate should be dry or matt damp and free from standing water, ice, or condensation at the time of application.

SUBSTRATE PREPARATION

CONCRETE, MORTAR, STONE

- Substrates must be sound, clean, and dry, free from laitance, standing water, grease, oils, curing compounds, old coatings, or any friable/loose particles.
- Remove contamination and weak material by mechanical means (e.g., light scabbling, grinding, or blast-cleaning) to produce an open-textured, laitance-free surface.
- Ensure anchor pockets or sleeves are free from water or debris prior to pouring.

STEEL

- Steel surfaces must be cleaned and prepared to a quality equivalent to Sa 2.5 (ISO 8501-1) by abrasive blast-cleaning and vacuuming.
- Avoid condensation or dew-point conditions during preparation and installation.
- The contact area between steel base plates and grout must be clean, sound, and preferably dry.
- Remove dust, laitance, oils, grease, curing agents, impregnations, waxes, coatings, and disintegrated material by mechanical means (e.g., blasting, chipping, or grinding).
- Apply grout immediately after preparation to minimize re-oxidation/rust formation.

MIXING

- Pre-batched Kits: Pour Component B (hardener) into Component A (resin) and mix with a low-speed drill (300–450 rpm) fitted with a paddle for 30–60 seconds, avoiding aeration.
- Transfer the blended liquid to a clean container and slowly add Component C (graded fillers) while mixing until a uniform, lump-free consistency is obtained (approx. 3 minutes).
- Mix only quantities that can be placed within the stated pot life.
- Do not mix Components A and B without Component C, as excessive heat may be generated.
- Allow the mixed material to rest briefly so entrained air bubbles can escape.

APPLICATION METHOD / TOOLS

FORMWORK

- Because of its flowable consistency, **REC GROUT EPO 23** requires well-sealed, rigid formwork to contain the material above pile caps or around base plates.
- Provide at least 100 mm head of material to promote flow.
- Where used in conjunction with waterproofing systems, ensure the waterbar or termination profiles are fully encapsulated by the grout.

PLACING

- Pour the mixed grout steadily onto the prepared surface or through a hopper, maintaining sufficient static pressure to achieve flow and full contact.
- Use a steel trowel to spread or level where necessary.
- For large sections, pour in layers; place the next layer as soon as the previous one has hardened and cooled.

CLEANING OF EQUIPMENT

- Remove surplus grout before it hardens.
- Dispose of waste according to local regulations.
- Uncured material can be cleaned with an appropriate epoxy cleaner; hardened material must be removed mechanically.

IMPORTANT CONSIDERATIONS

- Do not dilute with solvents – this may impair curing and mechanical strength.
- When cured, **REC GROUT EPO 23** forms a vapour barrier.
- Mix complete units only to ensure correct ratios.
- Ambient, substrate, and material temperatures will affect flow and curing; colder temperatures extend cure time, while higher temperatures reduce pot life.
- Avoid sudden temperature changes during the early curing stage.
- Although formulated for low creep, long-term design loads for epoxy grouts should be limited to ≤ 20–25 % of ultimate failure load; consult a structural engineer for project-specific load calculations.
- Refer to the latest Method Statement for **REC GROUT EPO 23** for detailed installation guidance.

PACKAGING

REC GROUT EPO 23 is available 20 Kg and 30 Kg Unit.

STORAGE

- **REC GROUT EPO 23** have a shelf life of 6 months if kept in a dry store in the original, unopened packs. In tropical climates it is essential to store in air-conditioned warehouse.

- Store in dry conditions between 10°C and 30°C, away from sources of heat and naked flames in the original, unopened packs. If stored at high temperatures the shelf life may be reduced.

HEALTH & SAFETY

- For detailed information on the safe handling, storage, transport, and disposal of this product, refer to the latest Safety Data Sheet (SDS). The SDS provides guidance on physical, ecological, toxicological, and other safety-related data.
- Always wear suitable protective clothing, gloves, and eye/face protection when handling.
- Ensure adequate ventilation in enclosed areas.
- Avoid contact with skin, eyes, and clothing.
- In case of accidental contact, follow the first-aid measures specified in the SDS.

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