

Enviro Mortar 45

Polymer-modified Structural Repair Mortar

DESCRIPTION

Enviro Mortar 45 is a high-performance, polymer-modified, shrinkage-compensated structural repair mortar with high compressive strength and abrasion resistance. It is suitable for vertical, horizontal, and overhead applications, and for general fairing, patching, and smoothing of uneven and cracked surfaces.

AREAS OF USE

SURFACES: Prepared concrete and masonry, including around exposed reinforcement.

AREAS: Damaged concrete, terraces, balconies and façades, concrete cancer repairs, dams, bridges and tanks, structural repairs, reprofiling worn slabs, sewer tunnels and pipes, chemically exposed repairs, and critical waterproof areas.

FEATURES & BENEFITS

- Shrinkage compensated
- High compressive and ultimate strength
- Excellent bond strength
- High abrasion and chemical resistance
- One component – just add water.
- Excellent workability, high build
- Low permeability, high durability

PRODUCT INFORMATION

Packaging	20kg Pails (single-component – add water)
Shelf Life	Approximately 9 months in original sealed containers
Storage Conditions	Store in a cool environment away from moisture.
Compatible Additives	Enviro Mortar Additive
Compatible Coatings	Enviro Clad

PHYSICAL PROPERTIES

Property	Test Method	Test Result
Water Requirement	–	3.0–3.5L per 20kg

Property	Test Method	Test Result
Work Time	–	50–60 minutes @ 10°C; 45–55 minutes @ 20°C; 30–40 minutes @ 30°C
Specific Gravity	–	2.13
Application Temperature	–	5°C to 35°C
Initial Set	–	2–3 hours @ 20°C; 1–2 hours @ 30°C
Final Set	–	4–5 hours @ 20°C; 2–3 hours @ 30°C
Application Thickness	–	10–80mm vertical; 10–100mm horizontal
Compressive Strength	AS 1012.9 / AS 2073	26 MPa @ 1 days; 50 MPa @ 7 days; 60 MPa @ 28 days
Elastic Modulus	–	≈26.3 GPa
Flexural Strength	ASTM C348	3.7 / 9.2 / 10.2 MPa @ 1 / 7 / 28 days
Bond Strength	ASTM C882	>10 MPa @ 7 days; >15 MPa @ 28 days
Shrinkage	AS 1012.13	<100 µε @ 7 days; <300 µε @ 28 days
Overcoat (protective/architectural)	–	24 hours @ 25°C
Traffic	–	Pedestrian 24 hours; vehicle 48 hours @ 25°C
Coefficient of Thermal Expansion	–	7–11 × 10 ⁻⁶ /°C

COVERAGE RATE

20kg mixed with 3.5L of water yields approximately 11L of mortar.

SUBSTRATE PREPARATION

All defective host substrate must be removed prior to application, including cracked or structurally weakened surfaces and chloride-contaminated or carbonated concrete. A concrete corrosion expert must be consulted for critical projects or structural applications.

Roughen host concrete with aggregate exposed and laitance removed, to a



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minimum CSP3 profile, by shot-blasting, scarification, mechanical chipping, or high-pressure water blasting. All surfaces must be free of dust, oils, and contaminants; this may require steam cleaning or high-pressure water blasting.

Provide a perimeter edge at least 10mm deep around the repair area. Saturating the surface with water is an acceptable priming method; epoxy primers or other vapour-blocking products are not recommended.

Reinforcement: Fully expose partially exposed bars to 20mm behind the bar. Replace bars that have lost more than 20% of their diameter (consult the structural engineer). Clean retained steel to Sa 2.5 (chloride-contaminated) or Sa 2.0 (carbonated) by wet or abrasive blasting. If steel will be exposed for several days, protect with a cement-rich slurry of GP cement and Enviro Mortar Additive.

Priming: Wet the area, remove ponding water, then prime with a 1:1 slurry of Enviro Mortar Additive and Portland cement, coating the entire cut-out.

APPLICATION

Mixing: Add 3.0–3.5L of potable water to a vessel and slowly add one 20kg pail while mixing mechanically (high-shear paddle) for at least 3 minutes until homogeneous. Mix full pails only and never exceed 3.5L per pail. Do not re-temper after initial set.

Application: Secure reinforcement to prevent movement. Apply by hand or trowel and compact thoroughly, especially around and behind reinforcement. Apply up to 80mm on vertical surfaces and up to 100mm horizontally or with formwork; minimum 10mm. If sagging occurs, remove and reapply thinner onto re-primed substrate. Seal formwork to prevent moisture loss. Use warm water (up to 30°C) in cold conditions. Finish with a steel trowel, straight edge, damp sponge, or wood float – do not overwork.

Curing: Follow good concrete curing practice immediately after finishing – use a curing compound or polythene sheeting taped at all edges to prevent rapid drying. Cure large areas progressively (about 0.5m² at a time).

Overcoating: Can be overcoated after curing with a range of EnviroSystems products, including Enviro Clad.

For applications or situations not covered above, contact EnviroSystems technical support.

CLEANING

Clean tools and equipment with water immediately after use. Cured material may need to be removed mechanically.

LIMITATIONS

- Do not exceed 3.5L water per 20kg pail.

- Apply only between 5°C and 35°C.
- Do not prime with epoxy or vapour-blocking primers.

HEALTH & SAFETY ADVICE

Enviro Mortar 45 is non-flammable. Provide adequate ventilation and wear PPE. Avoid breathing dust and skin contact. If swallowed, DO NOT induce vomiting; give a glass of water and seek immediate medical advice. Wash skin with soap and water; if irritation occurs, seek immediate medical advice. Refer to the Safety Data Sheet for full safety and handling procedures.

KEEP OUT OF REACH OF CHILDREN

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this publication is based on the present state of our best knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to accuracy, reliability, or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

NOTE: Field service where provided does not constitute supervisory responsibility. Suggestions made by EnviroSystems, either verbally or in writing may be followed, modified, or rejected by the owner, engineer, or contractor since they, and not EnviroSystems, are responsible for carrying out procedures appropriate to a specific project.

NOTE: All products manufactured by EnviroSystems comply with the description and properties indicated in the technical data sheet that was current at the date of manufacture.



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