

ZNR™ REPAIR CS 45

Structural Repair Mortar

Product Description	ZNR™ REPAIR CS 45 is a dual shrinkage compensated, fiber-reinforced, thixotropic repair mortar designed for vertical and overhead applications. It offers excellent adhesion, reduced sagging, and superior mechanical performance, making it ideal for structural repairs in both indoor and outdoor environments.																					
Product Number	305																					
Areas of Application	<ul style="list-style-type: none">• Extensive repairs to beams, columns, and other load-bearing structural elements• Restoration of structural members subjected to repetitive loading• Repair of piers, navigation locks, dams, seawalls, and other marine structures• Rehabilitation of bridges, tunnels, parking structures, silos, and related infrastructure																					
Features & Advantages	<ul style="list-style-type: none">• Easy to use, with excellent workability• Can be applied by trowel or spraying methods• Resistant to frost and adverse weather conditions• Contains special additives for alkali resistance and protection against abrasive salts• Ideal for horizontal, vertical, and overhead applications• Excellent adhesion to concrete and reinforcement steel• Non-toxic formulation• High mechanical and physical strength• Allows single-layer applications up to 50 mm thick																					
Reference Standard	TS EN 1504-3 - R4																					
Technical Data	<table><tr><td>Powder Color</td><td>Grey</td></tr><tr><td>Package</td><td>25 kg kraft bags</td></tr><tr><td>Density (Fresh Mortar)</td><td>~2.00 kg/m³</td></tr><tr><td>Working Temperature</td><td>Surface temperature +5°C / +35°C</td></tr><tr><td>Adhesion Strength</td><td>≥1.5 N/mm² (28 days)</td></tr><tr><td>Compressive Strength</td><td>≥65 N/mm² (28 days)</td></tr><tr><td>Flexural Strength</td><td>≥9 N/mm² (28 days)</td></tr><tr><td>Pot life</td><td>Approximately 30 minutes (at +23 °C)</td></tr><tr><td>Consumption</td><td>~2.00 kg/m² for 1mm of thickness</td></tr><tr><td>Storage</td><td>Shelf life is approximately 12 months. Products should be stacked in a cool and dry place, with maximum 10 bags on each other.</td></tr></table>		Powder Color	Grey	Package	25 kg kraft bags	Density (Fresh Mortar)	~2.00 kg/m³	Working Temperature	Surface temperature +5°C / +35°C	Adhesion Strength	≥1.5 N/mm² (28 days)	Compressive Strength	≥65 N/mm² (28 days)	Flexural Strength	≥9 N/mm² (28 days)	Pot life	Approximately 30 minutes (at +23 °C)	Consumption	~2.00 kg/m² for 1mm of thickness	Storage	Shelf life is approximately 12 months. Products should be stacked in a cool and dry place, with maximum 10 bags on each other.
Powder Color	Grey																					
Package	25 kg kraft bags																					
Density (Fresh Mortar)	~2.00 kg/m³																					
Working Temperature	Surface temperature +5°C / +35°C																					
Adhesion Strength	≥1.5 N/mm² (28 days)																					
Compressive Strength	≥65 N/mm² (28 days)																					
Flexural Strength	≥9 N/mm² (28 days)																					
Pot life	Approximately 30 minutes (at +23 °C)																					
Consumption	~2.00 kg/m² for 1mm of thickness																					
Storage	Shelf life is approximately 12 months. Products should be stacked in a cool and dry place, with maximum 10 bags on each other.																					
Surface Preparation	<p>All loose traces of concrete, mortar, dust, grease, oil, and contaminants must be completely removed. Damaged or contaminated concrete should be cut back to expose a keyed, aggregate surface. Non-impact or non-vibratory cleaning methods such as grit blasting or high-pressure water blasting are recommended. Edges of the repair area should be cut vertically to a minimum depth of 5 mm.</p> <p>Clean all exposed reinforcement to a minimum standard of Sa 2^{1/2} according to ISO 8501-1 / ISO 2944-4, ensuring the entire circumference of the steel, including the rear, is free from corrosion. Where corrosion has occurred, concrete must be removed to a depth of at least 20 mm behind the affected reinforcement. Grit blast the steel to remove rust and apply ZNR REPAIR AC as a corrosion protection primer. If, after blasting, the rebar diameter is found to be reduced by more than 20%, replace the affected section following advice from the responsible structural engineer.</p>																					
Preparation Instructions	<p>Only full, unopened bags of ZNR CS 45 should be used. Damaged or partially opened bags must not be used. Add 3.0–3.5 liters of clean water into a mixing container. Mix ZNR CS 45 using a forced action pan mixer or a helical paddle attached to a low-speed mixer (300–600 rpm) for approximately 4 minutes until a smooth, lump-free, thixotropic consistency is achieved. Allow the mortar to rest for 2–3 minutes, then remix briefly before application. In ambient temperatures above 30°C, chilled water should be used for mixing.</p>																					
Application Method	<p>Maintain the recommended temperature range during application and for at least 24 hours after to ensure optimum curing. The prepared substrate should be pre-soaked—preferably</p>																					

	<p>for 24 hours, but at a minimum of 2 hours before application. Ensure the surface is saturated surface dry (SSD) with no standing water.</p> <p>ZNR CS 45 can be applied by spray or hand. Apply the mixed product directly onto the damp substrate, or wet-on-wet over a primed surface. Spray application using sufficient pressure will help ensure strong adhesion. For hand applications, a thin contact layer (scrape coat) followed immediately by build-up to the desired thickness will enhance bonding.</p> <p>Apply the mortar in layers from 12 mm to a maximum of 50 mm. In confined or reinforced zones, thicker layers may be applied. Use a screeding bar, trowel, or wooden board to level the surface. As the mortar begins to stiffen, it can be smoothed using a steel trowel, float, or sponge, depending on the desired finish.</p>
Application Conditions & Precautions	<ul style="list-style-type: none">• Do not add water or powder into mixtures that have begun setting.• Protect the application area from direct sunlight, wind, rain, and frost for the first 24 hours.• Application temperature should be between +5°C and +35°C. Do not apply below -5°C.
General Notes	<p>The product information and recommendations provided in this document are based on our experience and extensive testing and are intended to guide users in the correct application of the product. However, as we cannot control the variability of site conditions, materials, and application methods, our warranty is limited solely to the quality of the product supplied. We make no warranty regarding the results of application, as these are outside our control. This document supersedes all previous versions. The final quality of the work depends on the professional use of the product. In case of uncertainty, we recommend conducting a preliminary test or consulting our technical support team.</p>
Disposal	<p>Dispose of packaging in accordance with local regulations. Allow waste material to cure fully before discarding as construction waste. Do not burn product remnants.</p>
Safety Information	<p>Keep out of reach of children. Store in sealed packaging. Use protective gloves and goggles during use. In case of skin contact, wash with soap and water. If eye contact occurs, rinse immediately and seek medical advice. Refer to the Safety Data Sheet (SDS) for detailed guidance.</p>