HITi
Construction Revolution

R30 REPAIR

Technical Data Sheet



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DESCRIPTION

HITI REPAIR R30 is a single-component, cementitious repair mortar (EN 1504-3 Class R3), enriched with special premium polymers and fibers. This product features Portland cement, well-graded silica sands, specially selected fibers, and additives designed to enhance both fresh and hardened properties. It is well-suited for application in hot and tropical climates.

USES

HITI REPAIR R30 is specifically formulated for:

- **Structural Repair:** Restoration of spalled and damaged concrete in buildings, bridges, infrastructure, and superstructure.
- **Structural Strengthening:** Increasing the bearing capacity of concrete structures through section enlargement.
- **Passivity Preservation:** Adding mortar to increase cover or replacing contaminated or carbonated concrete.
- **Thick Layer Applications:** Suitable for vertical and overhead repairs in layers of 5 – 30 mm.
- **Surface Levelling:** Leveling concrete and mortar surfaces before applying coatings.
- **Concrete Restoration:** Repairing and restoring concrete elements.
- **Joint Filling:** Filling joints between precast elements.

CHARACTERISTICS / ADVANTAGES

- **Structural Repair:** Effective for comprehensive concrete repairs.
- **Rapid Strength Gain:** Achieves high final strength quickly.
- **Water and Oil Resistance:** Provides resistance to water and oil exposure.
- **High Abrasion Resistance:** Durable against wear and tear.
- **Good Adhesion:** Ensures excellent bonding to existing concrete.
- **Ease of Application:** User-friendly and straightforward to apply.
- **Layer Thickness:** Effective for application in layers of 5 – 30 mm.
- **Frost Resistance:** Performs well in freezing conditions.
- **Thixotropic Behavior:** Maintains consistency and prevents sagging during application.

PRODUCT INFORMATION

Attribute	Details
Classification	EN 1504-3 Class R3
Composition	Polymer-containing cementitious mortar with various additives and fibers.
Packaging	25 kg bag
Appearance / Color	Grey powder
Shelf Life	12 months from the date of production when stored properly in undamaged, unopened, original sealed packaging.
Storage Conditions	Store in dry conditions at temperatures between +5 °C and +35 °C. Protect from direct sunlight, heat, and moisture.
Maximum Grain Size	Dmax: 2.0 mm
Compressive strength	28 days ~40 MPa

APPLICATION INFORMATION

Attribute	Details
Mixing Ratio	4 – 4.25 L of cold water per 25 kg bag
Mix Density	2 kg/L at +20 °C
Layer Thickness	Standard 15 mm · 5 – 30 mm per layer (thicker: several layers)
Consumption	~17.2 kg/m² at 10 mm thickness
Pot Life	90 minutes at 25 °C
Ambient Air Temperature	+5 °C min. / +30 °C max. (keep mix below 32 °C in summer)
Substrate Temperature	+5 °C min. / +30 °C max.
Load or paint	After 14 days

APPLICATION PROCEDURE

Surface Preparation

Ensure the concrete surface intended for repair is structurally sound, clean, and free from contaminants. The substrate must be properly cured, free from loose particles, dirt, oil, grease, cement laitance, or efflorescence. Use appropriate preparation techniques such as water-jet washing or blast cleaning to remove any materials that could compromise adhesion.

For areas that are decayed or damaged, remove the compromised material, maintaining square edges around the repair area. If any reinforcement steel is corroded, fully expose the steel and prepare it using abrasive blast cleaning or high-pressure water blasting.

In hot climates or when working on absorbent substrates, thoroughly pre-dampen the surface immediately before applying the product. However, avoid any standing water; the surface should be saturated but dry to the touch, with no dark, wet appearance.

Mixing

For optimal results, mix **HITI REPAIR R30** using an electric blender equipped with a suitable mixing spiral in a clean container. Slowly add the **HITI REPAIR R30** powder to 4 – 4.25 L of cold water per bag, blending continuously for at least 3 minutes until a smooth, homogeneous consistency is achieved. The mixture should be creamy, easily spreadable, and thixotropic.

For best results, use a forced-action mixer or a slow-speed double paddle drill (not exceeding 500 rpm). Avoid adding extra water or ingredients after mixing.

Application

HITI REPAIR R30 can be applied by hand with a spatula or trowel. Standard thickness: 15 mm; allowed 5 – 30 mm per layer. For thicknesses greater than 30 mm, apply the mortar in several layers. When layering, crosshatch the previous layer and allow it to set before applying the next.

If the ambient temperature ranges between 20 °C and 25 °C and weather conditions are stable, **HITI REPAIR R30** can be applied in a single pass with a thickness ranging from 5 to 30 mm. Rapid moisture evaporation caused by strong winds or low humidity may affect the curing process, so take appropriate measures.

Once the mortar begins to set, smooth it with a wooden or synthetic float. For a fine surface finish, apply a top layer of HITI REPAIR R10. Load or paint after 14 days.

Important Considerations

- **Layered Application:** For repairs that require sections thicker than 30 mm, apply the material in multiple layers to ensure optimal performance and bonding.
- **Temperature Control:** During periods of high ambient temperatures, particularly in the summer months, keep the mixed material temperature below 32 °C. For specific guidance, please consult the HITI Technical Department.
- **Avoid Direct Sun and Wind:** To prevent premature drying and potential surface defects, avoid applying the material in direct sunlight or under strong winds.
- **Surface Finishing:** Do not add extra water during the finishing process, as this can cause discoloration and lead to cracking in the surface.
- **Workability:** Refrain from overworking the finished surface. Overworking can result in a cement-rich texture, increasing the risk of random crazing cracks and potentially compromising the mortar's bond with the concrete substrate.

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