

TECHNICAL DATA SHEET

Mortar for High Strength Repairs



Krystol HR Grout

Product Code: K-322.XH

Trowelable fibre reinforced, dual Shrinkage Compensated, thixotropic repair mortar

DESCRIPTION

Krystol HR Grout is a trowelable dual shrinkage compensated, thixotropic high strength formulation for structural concrete repairs.

Krystol HR Grout is suitable for placing in thicknesses of 12 mm to 50 mm both vertically and overhead.

Krystol HR Grout provides a durable, strong structural repair fully compatible with host concrete.

RECOMMENDED USES

Krystol HR Grout is the ideal material for horizontal or vertical structural repairs where the thickness of repair is more than 12 mm and use of hand or machine applied structural repair system is required. Here are the typical applications.

- Extensive repairs to beams, columns and other structural elements.
- Repair of structural members subjected to repetitive loading.
- Repairs to piers, dams, seawalls navigation locks and other marine structures.
- Repairs to bridges, garages, tunnels, silos etc.

APPLICATION

• Surface Preparation

It is required to remove all loose traces of dust, grease oil, concrete or mortar etc. Must remove damaged or contaminated concrete to obtain a keyed aggregate exposed surface. It is recommended to use non-impact/vibrating cleaning methods, e.g. high-pressure water blasting or grit. Cut the edges of the repair vertically to a minimum depth of 5 mm. All exposed reinforcement must be cleaned to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2944-ensuring the clean back of reinforcing bar. Cut back the concrete to at least 20 mm behind the reinforcing bars at the point where reinforcing bars are corroded. Remove corrosion residue by gritting blast around the reinforcing bars. In case, if the diameter after grit blasting is found reduced by more than 20% of the original diameter, must replace the affected part of rebar on the advice of the dedicated structural engineer.

• Mixing

Damaged or opened bags should not be used to be mixed. Simply mix Krystol HR Grout with a helical paddle attached to a low speed (300-600rpm) mixer or in a forced action pan mixer for 3 minutes to achieve lump free, thixotropic consistency. Approx. 3.0 litres of clean water is required to be used per 20 kg bag. Each bag of Krystol HR Grout yields 9.90 L when mixed with 3.0 L of water. It will take around 2 - 3 minutes to allow the mixture to let the mortar rest and then remix briefly before applying. If the temperature is more than 30° C, then use the chilled water for mixing.

• Application Method

No special Priming is required. For the additional curing purpose, it is required to maintain minimum temperatures for at least 24 hours since the time of application. The prepared substrate can be pre-soaked, preferably for around 24 hours, but at least 2 hours before applying Krystol HR Grout. It can be applied by hand or in spray form also. Mixed product should be directly applied wet on to the primed surface or to the prepared damp substrate. The material sprayed with the necessary pressure ensures its good adhesion. Adhesion can be improved, especially while applying it with hands by using contact layer or thin scrape coat before building up to the exact wet on wet thickness required. Use a trowel, screeding bar, or wooden board to apply it to the layer of around 10 mm to 50 mm as per the desired thickness and level. Adhesion works perfectly on being applied to small crack patches, thicker layers or with the layers having additional reinforcement. Once the mortar begins stiffening, start smoothing with a trowel or finishing by sponge or float.

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SMART CONCRETE®

FEATURES	BENEFITS
Dual shrinkage compensated	Volume stable in wet and hardened stage for highly reducing cracking tendency
Component, only addition of water	Uniform predictable performance even in difficult situations•
Stable in aggressive exposure conditions	Long life repairs
Fast and easy working	Reduces time for repairs
Simple Application	Without any requirement of bonding material

PROPERTIES

Appearance	Grey Powder
Product Identity- Class according to EN 1504-3	Category - R4 (CE Certified)
Water Grout Ratio	0.15
Density	2300 kg/m ³ Approx.
Application Temperature Range	from +5°C to +40°C
Mixing Water per 20 kg bag	Approx. 3.0 - 3.40 Lt.
Compressive Strength (EN 12190, 70mm cube)	>20 MPa @ 1 Day >50 MPa @ 3 Days >60 MPa @ 7 Days >70 MPa @ 28 Days
Flexural Strength (ASTM C 348)	>9 MPa @ 28 Days
Tensile Strength (ASTM C 496)	>4 MPa @ 28 Days
Coefficient of Oxygen diffusion	2.58 x 10 ⁻⁸
Thickness placed in	12 mm to 50 mm
Application temperature range	from +5°C to +40°C
Bulk density (g/cm ³)	1.45±0.03
Maximum size of aggregate	2 mm
Chloride ions content, according to EN 1015-17 (%)	≤ 0.05
Dry solids content (%)	100
Bond strength on concrete according to EN 1766 (MPa)	≥ 2 (after 28 days)
Impermeability to water – penetration depth - (mm) - EN 12390/8	< 5
Capillary absorption (kg/m ² ·h ^{0.5}) - EN 13057	≤ 0.5
Thermal compatibility measured as bond strength according to EN 1542 (MPa) – freeze-thaw cycles with de-icing salts: – storm cycles: – dry thermal cycles:	≥ 2 (after 50 cycles) EN 13687/1 ≥ 2 (after 30 cycles) EN 13687/2 ≥ 2 (after 30 cycles) EN 13687/4
Consumption/Coverage	"20.0 kg/m ² per cm of thickness if used pure and 15.5 kg/m ² if used mixed with 30% of 3 to 6-8 mm aggregate. (Approx.) "
Elastic Modulus – EN 13412	≥20.0 Gpa
Non-Toxic & Compatible with potable Water	Fit for portable water

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SHELF LIFE

Krystol HR Grout has a shelf life of 12 months. Must be clear of the ground on pallets protected from rainfall, stored out of direct sunlight and at a minimum temperature of 7°C.

PACKAGING

Krystol HR Grout is available in 20 kg bags.

SAFETY

For professional use only. This product becomes caustic when mixed with water or perspiration. Avoid contact with skin or eyes. Avoid breathing dust. Wear long sleeves, safety goggles and impervious gloves.

WARRANTY

Kryton Buildmat Co. Pvt. Ltd. warrants that Kryton products are free from manufacturing defects and comply with the specifications given in their respective technical data sheet. Because conditions of use, such as site conditions, surface preparations, workmanship, concrete ingredients, weather, structural issues and other factors are beyond the control of Kryton, no warranty can be given as to the results of use. Purchaser agrees to seek the advice of qualified professionals and to determine for themselves the suitability of the products for their intended purpose and assumes all risks. Purchaser's sole remedy is limited to replacement of any product proven defective or at Kryton's option refund of the purchase price paid. THIS LIMITED WARRANTY CONTAINS THE ENTIRE OBLIGATION OF KRYTON. NO OTHER WARRANTIES, EXPRESS OR IMPLIED, SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. KRYTON SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. No representative of Kryton has the authority to make any representations or provision except as stated herein. Kryton reserves the right to change the properties of its products without notice