



Specialist Construction Supplies for Repair, Maintenance, Building & Infrastructure

Deck Repair Rapid Data Sheet

Specification notes

Product: **Deck Repair Rapid**

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Deck Repair Rapid

Rapid Setting Horizontal Repair Mortar

Description


A pre-packed acrylic polymer modified cement based mortar. Deck Repair Rapid is characterised by its high early strength development, rapid moisture loss and shrinkage compensation. The material has been designed to comply with the requirements of EN1504 Part 3 Class R4, as well as conforming to the Department of Transport Standard BD27/86 Clause 6. It is an ideal material for the repair of bridge decks prior to waterproofing, highway concrete pavements, repairs which require a fast return to service, emergency reinstatement of damaged or deteriorated concrete, bus depots, airport runways and aprons.

Advantages

- Rapid setting characteristics
- Conforms to EN1504 Part 3 Class R4
- Chloride free
- Excellent bonding properties
- Ready to use, only requires addition of clean water
- Ideal for internal and external use
- Ideal for use in cold, wet conditions
- Low chromate (CR(VI) <2ppm)
- Low water/cement ratio
- Durable and weather resistant
- Shrinkage compensated

Technical Information

Water Addition	Usable Life (mins)	Compressive Strength, MPa				
		1 Hr	2 Hr	4 Hr	24 Hr	7Day
2.0 Litres (Stiff Mortar)	15	8	24	34	41	60
2.5 Litres (Mobile Mortar)	20	8	20	24	36	55
3.0 Litres (Pourable)	25	-	9	13	30	49

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Nufins, Kingston House, 3 Walton Road, Pattinson North, District 15, Washington, Tyne & Wear. NE38 8QA 13 0086-CPD-594215	
EN 1504-3 Concrete repair product for structural repair PCC Mortar (polymer modified hydraulic cement)	
Compressive strength	Class R4 (>45 MPa)
Chloride ion content	≤0.05 %
Adhesive bond strength	>2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	>2.0 MPa
Elastic modulus	>20 GPa
Dangerous substances	Complies with 5.4

Design Criteria

Deck Repair Rapid is designed for horizontal repairs from 10mm up to a nominal thickness of 70mm. Vertical repairs can also be accommodated with the aid of formwork. For sections greater than 70mm and up to 300mm Deck Repair Rapid should be used bulked out by adding 10mm graded, silt free aggregate. The mix proportions should be 25kg of Deck Repair Rapid with up to 25kg of bulking aggregate. Please consult with the technical department when bulking out.



Technical Properties of Deck repair Rapid.

Properties	Standard	Performance Requirement	Declared Value
Appearance			Grey Powder
Chloride-ion content	EN1015-17	$\leq 0.05\%$	$\leq 0.05\%$
Maximum aggregate size			4mm
Layer thickness -minimum -maximum			10mm 70mm
Working time (@ 20°C)			15-25 Minutes
Initial Set (@ 20°C)			15-60 Minutes
Final Set (@ 20°C)			30-90 Minutes
Density			2150-2300 kg/m ³
Mixing water, per 25Kg pack.			2.0-3.0 Litres
Water/cement ratio			0.39 @ 3.0 litres per 25kg
Temperature for application			0°C to 35°C
Compressive Strength 2.5 Litres per Pack @ 20°C	EN 12190	≥ 45 MPa	20 MPa @ 2 Hr 24 MPa @ 4 Hr 36 MPa @ 24 Hr 55 MPa @ 7 Day
Compressive Strength 2.5 Litres per Pack @ 5°C	EN 12190		2 MPa @ 2 Hr 10 MPa @ 4 Hr 30 MPa @ 24 Hr 52 MPa @ 7 Day
Tensile Strength @ 2.5 Litres per Pack	BS6319-7		2.0 MPa @ 3 Hr 5.4 MPa @ 28 Days
Modulus of Elasticity, In Compression	EN13412	≥ 20 GPa	24 GPa
Adhesion - concrete	EN1542	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after freeze/thaw (50 cycles with salt)	EN13687-1	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after thunder showers (30 cycles)	EN13687-2	≥ 2.0 MPa	≥ 2.0 MPa
Adhesion after dry cycling (30 cycles)	EN13687-4	≥ 2.0 MPa	≥ 2.0 MPa
Skid Resistance	EN13036-4		Class 1
Carbonation resistance	EN13295	$d_k \leq \text{ref. concrete}$	Passes
Capillary absorption	EN13057	$\leq 0.5 \text{ kg.m}^{-2}.\text{h}^{-0.5}$	$\leq 0.5 \text{ kg.m}^{-2}.\text{h}^{-0.5}$
Cracking tendency	Coutinho Ring Test		No cracking after 180 days

Technical data shown are statistical results and do not correspond to guaranteed minima. Tolerances are those described in appropriate performance standards.

Surface Preparation

Ensure surface is clean, free from laitance, loose material, grease or oil. If necessary cut out until a clean, sound surface is obtained. Avoid feather edging, cutting the edges square to a minimum depth of 10mm. Damaged or contaminated concrete should be removed exposing only sound concrete with a direct tensile strength of 1.0 MPa, or greater. Saturate the repair bottom and side surfaces for at least 1 hour. Remove standing water and keep surfaces damp prior to placement of repair mortar.

Mixing & Placement

Deck Repair Rapid should be mixed in a forced action mixer. Prior to mixing, wet the drum and discard water. Measure out 3.0 Litres of clean water and add two thirds to the mixing drum. Gradually add the all of the Deck Repair Rapid to the rotating drum, adding sufficient of the remaining water to achieve the required consistency. Place the mix to the desired thickness and compact thoroughly, minimum bed thickness is 10mm. Finish as required and immediately clean all equipment with water. Deck Repair Rapid can be used at temperatures from 0°C up to 35°C maximum. However, when the temperature is below 5°C it is recommended that the mixing water is between 10-20°C and the bag to be used has been stored in temperatures above 10°C prior to use. At low temperatures it is important to ensure that the substrate is not frozen.

Curing

Deck Repair Rapid should be cured using polythene sheeting taped around the edges.

Packaging

Deck Repair Rapid is available in 25 kg moisture resistant bags (Yield 12.5 litres).

Storage

Deck Repair Rapid should be stored in dry conditions and protected from damp. The product has a shelf life of 6 months when unopened.

Limitations

Excessive water addition will reduce strength and possibly induce shrinkage cracking, as experienced with all cementitious compounds. Due to the fast setting nature of the product, strength development is very dependent on ambient and substrate temperatures.

Health & Safety

Deck Repair Rapid does not present any undue hazard and is non-toxic. However, as it is alkaline, gloves should be worn and any material should be washed from the skin and eyes before it dries with clean water. The normal standards of hygiene should be observed and the use of a barrier cream is advisable.

Technical Support

Through our technical department and laboratories we can offer a comprehensive service to specifiers and contractors. Technical representatives are available to provide further information and arrange demonstrations.