

MAKPATCH LW

High Build Ultra-Light Weight High Build Polymer Modified Fire Rated Non-Slump Patch Repair Mortar

Makpatch LW is a lightweight fire rated, polymer modified, cementitious mortar, formulated to provide cover for steel connection plates or stitch plates on precast concrete panels and plates in tilt slab or precast construction.

Makpatch LW may be sanded to produce a smooth surface texture prior to painting or application of a render or fairing coat.

Repairs up to 90mm can be achieved in a single application without slump or shrinkage.

High performance, high build, lightweight, very low shrinkage, patch repair mortar.

RECOMMENDED USES

- Patching repairs and covering metal joining plates or stitch plates in tilt up or pre-cast panel
- High build application up to 90mm for vertical applications
- General high build up repairs where a non-structural repair mortar is required
- Can be applied without the use of formwork
- Repairing sections requiring fire rating

FEATURES AND BENEFITS

- Good adhesion to substrates, high bond strength to substrate
- Eliminates the need to erect formwork
- Shrinkage compensated - dimensional stability
- Excellent workability and finishing off
- Durable finish

TECHNICAL DATA SHEET

- Application 5mm to 90mm in single application
- Can be applied using wet spraying techniques
- Contains no chlorides
- Polymer modified provides low permeability to water, carbon dioxide and chlorides
- Finishes off to a smooth surface
- Easy to use - just add water
- 4-hour fire rating to AS1530.4
- Lightweight formulation enables extra high-build – fewer cold joints
- One component, pre-bagged to overcome site-batched variations
- Suitable for internal and external applications
- Excellent adhesion to concrete
- Easy mixing and application
- Australian Made and Australian Owned

APPLICATION INSTRUCTIONS SURFACE PREPARATION

All surfaces to be treated with **Makpatch LW** must be free of oil, grease, dust, plaster, paint and any other contamination that may affect the bond. Any cracked or weakened surface should be removed prior to application of **Makpatch LW** to ensure a sound foundation is achieved.

Scabbling or high-pressure water blasting should be used to remove any loose or weak concrete laitance and provide a mechanical key.

Grit blasting is effective in removing corrosion, rust and all steel including re-bars should be cleaned to a bright condition. All rust and corrosion must be removed prior to application of **Makpatch LW**.

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion

deposits. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Abrasive-blasting is recommended for this process. Immediately after cleaning steel reinforcement bars the steel should be treated with **Makrete Zinc Primer**. This will stop any oxidation and corrosion that may occur after cleaning.

PRIMING

Priming is not always necessary. The substrate should be pre-dampened with water and excess water removed prior to application of **Makpatch LW**.

For very porous substrates all masonry surfaces should be primed with **Makprime MP**.

Steel plates and rebar and any exposed steel should be primed with **Makprime Zinc**. Apply one full coat of **Makprime MP** and allow to dry before continuing. Primer should be dry or tacky prior to application of **Makpatch LW**.

MIXING

Mix using a mechanical forced action mixer with a high shear spiral mixing paddle. A forced-action mixer is essential. Mixing at a slow speed (400/500 rpm) in a suitably sized mixing bucket using appropriate equipment. Always add the powder to the pre-measured water and mix until a homogenous mix is obtained which is lump free.

DO NOT MIX BY HAND DO NOT ADD EXCESS WATER

Place 3.2-3.5 litres of water into a mixing bucket slowly add the full 10kg powder bag while mixing. Mix for 3-5 mins until a fully homogeneous mix is obtained. The mixed consistency should be a slump free smooth mortar.

Excess water will reduce the ultimate (final) strength and extend the drying time of the

product. Additional or excess water will reduce the build-up of the mortar, making high build applications difficult. It is recommended that full bags be mixed, however for applications where smaller quantities of product are required, experienced applicators may elect to mix half bags by weighing out 5kg of product and mixing with half the recommended quantity of water. In doing so care should be taken to ensure correct ratio of water to powder.

**Only mix the quantity of material that can be used within the set time of the material.
Discard partially set or hardened material.**

APPLICATIONS

Exposed steel reinforcing bars should be firmly secured to avoid movement during the application process as this will affect mortar compaction, build and bond.

Apply the mixed material to the prepared surface using a trowel or hand applied. Compact the mortar into the repair area and around the exposed steel reinforcement re-bars, or stitch plates.

Makpatch LW can be applied up to 90mm in a single application on a vertical surface and up to 70mm thickness in overhead applications. A smooth surface can be obtained using a flat steel trowel.

LOW TEMPERATURE WORKING/MIXING

When the air or substrate surface temperatures are 5°C or below, warm water (30 - 40°C) is recommended to accelerate strength development.

For ambient temperatures below 10°C if formwork is used it should be kept in place for at least 48 -72 hours.

Normal precautions for winter working with cementitious materials should then be adopted. At low temperatures the **Makpatch LW** will take longer to cure and reach maximum strength gain.

HIGH TEMPERATURE WORKING/MIXING

At ambient temperatures above 35°C cool water (below 20°C) should be used for mixing the **Makpatch LW** prior to placement.

At high temperatures the **Makpatch LW** will set and cure faster, working time will be reduced.

- Do not add additional water other than what is specified
- Never apply mixed **Makpatch LW** to a dry porous substance without priming or presoaking with water

PRECAUTIONS

- Do not use as a trafficable surface for horizontal applications
- Ensure application is conducted when no rain or any contact with water will occur within 12-24 hours after final trowel
- Do not use for pedestrian or vehicle traffic
- Nonstructural and non-load bearing
- If **Makpatch LW** is applied over any cracks that are active, reflective cracking will occur through to the **Makpatch LW**
- Do not use additional water than that specified
- Do not apply as feather edge or at thicknesses less than 5mm
- Designed for vertical and overhead application only

CURING

On completion of the trowelling operation, exposed areas can be cured with **Makgrip A** to reduce the incidence of premature drying and cracking.

PACKAGING

Makpatch LW is supplied in 10kg poly lined bags in Grey.

Also available in Off White.

SHELF LIFE

Makpatch LW has shelf life of 12 months if stored in the original sealed packaging in dry, low humid environments. Do not use if there are any lumps in the product. Discard product.

CLEAN UP

Makpatch LW should be removed from tools and equipment with clean water immediately after use. Cured material can only be removed mechanically.

HEALTH AND SAFETY INFORMATION

Avoid contact with skin. Protective gloves and clothing are recommended when mixing or using this product. Please refer to full Safety Data Sheet for this product, which is available from **Makrete** Building Solutions.

TECHNICAL SPECIFICATIONS

PERFORMANCE CHARACTERISTICS

TEST	STANDARD	TYPICAL PROPERTIES (RESULTS) MPa				
		Consistency	Water Addition	1 Day	7 Days	28 Days
Compressive Strength MPa	AS 1478.2:2005 AS 1012-11		3.2 – 3.5	4	12	18
Flexural Strength MPa	AS 1012.11 - 2000		3.2 – 3.5	2	4	5
Setting Time	AS 1012.18:1996 ASTM C191-2008		Initial Set @ 20°C	Final Set @ 20°C	Litres of water per bag	
			2 hours	4.5 hours	3.2 – 3.5	
Fresh Wet Density	AS1012.5	Approx. 900 – 950 kg/m ³ - depending on consistency mixed				
Minimum Thickness Maximum Thickness		5 mm 90 mm				
Working Time	AS1012.18	40 - 50 minutes @ 20°C				
Bond Strength	ASTM C882-1987 Slant Shear Method	>10 MPa @ 28 days				
Application Temperature		Min 5°C Max 35°C				

YIELDS

Consistency	Smooth Paste Trowable
Water per 10 kg bag - LITRES	3.2 – 3.5
Yield per 10 kg bag - LITRES	15 approx.
Fresh Wet Density in kg/m ³	900 approx.
Bags required per cubic metre (m ³)	67 Bags

CONTACT & TECHNICAL SUPPORT

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Product	MAKPATCH LW (GREY)
Issue Date	AUG 2022
Issue No:	1
Item Code	MAKP32
Pack Size	10 kg Bag

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time.

The TDS should be carefully read and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied.

Our responsibility for products sold is subject to our standard terms and conditions of sale. Makrete does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

The information and any recommendations relating to the application and end-use of all MAKRETE products are provided in good faith based on MAKRETE's knowledge and experience of the products. In applications, the differences in materials, and variances of substrates and actual site conditions can vary such that no warranty in respect of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be taken as inferred either from this information, or from any written recommendations, or from any other advice offered by MAKRETE. The proprietary rights of third parties must be observed. All orders are accepted subject to our sale terms and conditions.

It is recommended that all products be properly stored, handled and applied in accordance with the printed literature (TDS).

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.