

REPAIR METHODOLOGY & APPROACH

The repair of previous scaffolding tie scars, and any resulting tie scars associated with the proposed phase of work are to be carefully repaired. The objective is to repair the scars using a naturally compatible material which will both repair the scarred surface and any substrate damage, whilst also disguising the scar by ensuring that the material is a good colour match.

Colour sampling of the existing weathered terracotta will be undertaken, and 3-5 custom sample mixes prepared for trials on site. These will be allowed to fully dry in biscuit form before being compared to the existing terracotta on site. One mix which suits most areas will be chosen. Variances in existing weathered surfaces will be tolerated so that one mix is applied in all areas for material consistency.

Where previous scars have been filled with cement or mastic, this will be carefully removed. In some locations this previous application of inappropriate repair materials may have caused damage itself to the surface and/or substrate, so care must be taken in its removal. Repair of any consequential damage will be included with this scope using the same materials.

The lime repair mortar detailed below will be applied to the scar only, filling the full depth of the tie penetration, and finished neatly within the outer rim of the hole in the fabric. Unless the weathering surface of the terracotta has suffered penetration damage, or consequential damage to arises which leaves it spalled, the repair mortar will be contained to the penetration hole and must not be spread or feathered over otherwise sound existing surfaces.

The outcome of this process will be an honest repair of tie scars in compatible material that will ensure long-term weathering resilience and compatibility. The finished repairs will be visible but completed in such a way that they blend as well as can be achieved with the surrounding terracotta material by colour matching trials to achieve a suitable mortar tone when dry.

MATERIAL USE & SPECIFICATION – MM STONE REPAIR MORTAR (CUSTOM)

1.Product description

Mineral dry bagged masonry restoration repair mortar. Completely cement free lime binders and special aggregates.

2.General application and uses

MM Stone Repair Mortar – For partial or full surface repair of weathered or damaged sandstone or limestone where a strong bond and the ability to shape on hardening or when fully set is required. Can be tooled and finished to match the original, whether single or multiple colours.

3.Material Properties

@ 28 days

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|-------------------------|----------------------------------|
| • Bulk Density | 1.420g/cm ³ |
| • Water demand | 4.5- 5L per 25KG |
| • Open time | 90mins |
| • Compressive strength | <7.5 N/mm ² |
| • Tensile strength | <1.5 N/mm ² |
| • Modulus of Elasticity | 9000 MPa |
| • Vapour permeability | 0.75-8 gxm ² xhx mmHg |

4.Application instructions

Ambient and materials / surface temperature range to be within +5°C to +30°C Out with these ranges consult our technical department.

5. Background / substrate preparation

- Cut back surface to remove defective masonry, to a sound base using a toothed chisel.
- If repairing only part of a unit, cut edges to straight lines on flat work, ellipses on curved work. Use of cutting discs is recommended to form sharp back chamfered edges.
- Where straight or ellipse line work is not possible, ensure **MM Stone Repair Mortar** does not finish to a thin feather edge – Where a feathered edge is unavoidable, the minimum edge thickness should be at least 5mm and once the repair is fully set (minimum 36 hours).
- All backgrounds must be free of salts, dust, loose or friable materials.
- Clean surfaces with mild grit blasting, pressure washing, and/or brushing with a stiff bristle brush. Use Biocide if required.
- Dampen, to control suction by pre-wetting if required.
- No standing water, remove with a sponge

6. Mixing

- For best results use hand held drill or whisk type mixer. Mix dry powder into water gradually, start wet, work to drier consistency. Do not short mix. Short mixing requires greater water content and will lead to bleed or shrinkage. Over mixing will weaken the material. Mix for 3-4 minutes with suitable mechanical means. If hand mixing, mix only small amounts and ensure the materials are properly mixed, usually around 4-5 minutes of vigorous mixing.

7. Application (one or multiple coats)

- Apply an initial layer 3mm or so with some pressure to the background, pressing materials into all grooves and tooling, then lay the rest of the **MM Stone Repair Mortar** up against this, wet on wet, to the desired thickness. In many instances various deeper sections should be filled first and brought to the level of the next deepest section, and so on, until the entire depth is filled. Remove any laitance between layers.
- Generally, up to a maximum of 40mm can be applied in a single application, or thicker in multiple passes. If form work is being used, or on flat or nearly level supports, work can be filled or laid up in a single pass.
- If filling in hanging layers, allow time for initial stiffening to take up before applying next layer, particularly if free forming projections and the like. Work must always be applied green on green for continuous application. If the sub base skins over (forms a laitance layer), scrape back to form a key before applying more **MM Stone Repair Mortar**.
- Ensure the final application is at least 1mm proud of the finished surfaces to allow for tooling – scraping, shaping back.

8. Finishing

- Finish with appropriate tools as the mortar takes its initial set, 8-12 hours depending on ambient conditions, (may be overnight in colder weather).
- Shaping with trowel edges, sculpting tools, sanding blocks, tungsten and the like can be done from 8 to 24 hours. For uniform perfect colour across all the repairs, the method of finishing and timing should remain consistent. Reinstate any mortar joints. **MM Stone Repair Mortar** must not bridge live cracks or mortar joints.
- All repairs should be overfilled and cut back. Where a tight, closed down finish is required, scrape back and close down lightly with a stainless-steel float without creating laitance while still sufficiently green to achieve the desired results. Over working can lead to fine laitance spider crazing on hardening.

9. Consumption (Approximate)

- 12.5 KGs per M2 at 10mm thick

10. Clean up

- Wash tools with clean water immediately after use.

11. Coloured (Pre-blended) or Colourpack™

- As supplied, either through coloured or with a Colourpack™ for onsite mixing.

- Through coloured dry bagged product, take materials as required and mix with water, colour will remain consistent throughout the depth of the material.
- Colourpacks are supplied for mixing with 6.25KG, 12.5KG and 25KG units of uncoloured **MM Stone Repair Mortar**.
- Empty the Colourpack™ into 75% of the mix water in the mixing bucket, turn package inside out and clean off any residual powder, stir with the drill whisk to distribute the Colourpack™ and mix in dry bagged mortar, adding water as necessary until a uniform, satisfactory mortar consistency is achieved. Not less than 3 minutes, not more than 4 minutes mixing time with a drill mixer.
- Proper protection must be maintained throughout the curing process. Colour variation will occur if differential hydration takes place. After placing, keep work protected from impact, strong sunlight, drying winds, rain and frost until properly cured.

Hazardous substances classification

- **R 38:** Irritating to the skin
- **R 41:** Risk of serious damage to the eyes
- **S 2:** Keep out of reach of children
- **S22:** Do not breathe dust
- **S24/25:** Avoid contact with skin and eyes
- **S26:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- **S37/39:** Wear suitable gloves and eye / face protection
- **S46:** If swallowed, seek medical advice immediately and show this container or label

Transport Hazard Class

N/A

Disposal

EC waste code no 170101

Any residue must be emptied out of bags or containers before recycling.

Solidify any residual material with water and after consulting the relevant authorities, dispose of in a construction material landfill site.