



TECHNICAL DATA SHEET – ZMR431 METAL REPAIR PASTE

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ZMR431 METAL REPAIR PASTE

ZMR431 "Metal Repair Paste" is a two-component solvent free epoxy metal repair compound. The product has been designed for use on a wide range of metallic surfaces and once cured is readily machinable

Typical applications

Suitable for emergency repairs or part of planned maintenance to equipment such as worn or damaged pump shafts, cracked pump or valve casings, scored hydraulic rams, worn bearing housings, damaged flanges, leaking tank seams, worn keyways and cracked engine blocks. The material can also be used as a gap filling adhesive.

Characteristics Appearance

Base: Dark grey paste

Activator: Light grey paste

Mixed: Mid grey paste

Mixing Ratio & Density

By weight: 5:1

By volume: 3:1

Density Base: 2.70

Activator: 1.70

Mixed: 2.46

Solids content

100%

Sag Resistance

Nil at 25mm.

Coverage

1kg of fully mixed product will give the following coverage rates –

0.406m² at 1mm

0.203m² at 2mm

0.135m² at 3mm

Note, that the coverage rates quoted are theoretical and do not take into consideration the profile or condition of the surface being repaired.

Cure Times

The applied material should be allowed to harden for the times indicated below before being subjected to the conditions indicated:

Usable life

10°C 60 minutes

20°C 30 minutes

30°C 15 minutes

40°C 7.5 minutes

Minimum overcoating time

10°C 4 hours

20°C 2 hours

30°C 1 hours

40°C 30 mins

Maximum overcoating time

10°C 12 hours

20°C 6 hours

30°C 3 hours

40°C 90 mins

Full Cure

10°C 6 days

20°C 3 days

30°C 1.5 days

40°C 18 hours

Storage Life

5 Years if unopened and stored in normal dry conditions (15-30°C)

Mechanical Properties

Abrasion Resistance

Taber CS17 Wheels/1 Kg load
22mm³ loss/1000 cycles

Adhesion

Tensile Shear to ASTM D1002 on abrasive blasted mild steel with 75µm profile 185kg/cm²

Pull off Adhesion to ASTM D4541 on abrasive blasted mild steel with 75 µm profile 244kg/cm²

Compressive strength

Tested to ASTM D 695 1075kg/cm²

Corrosion Resistance

Tested to ASTM B117 Minimum
5000 hours

Flexural Strength

Tested to ASTM D790 703kg/cm²

Hardness

Shore D to ASTM D785 100

Heat Distortion

Tested to ASTM D648 at 264psi fibre stress.

20°C Cure 58°C

100°C Cure 98°C

Heat Resistance

Suitable for use in immersed conditions at temperatures up to 60°C. Resistant to dry heat up to 200°C dependent on load.

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ZMR431 Metal Repair Paste –solvent free epoxy with metallic fillers

ZMR431 Metal Repair Paste is a two-component solvent free epoxy metal repair compound designed to fill surface erosion & corrosion on metallic surfaces.

- Apply to mechanically & abrasive blast cleaned surfaces
- High mechanical adhesion to metal substrates
- Apply at thicknesses up to 25mm

Typical Applications

Surface Preparation

Metallic Substrates–Mechanical abrasion

1. All oil and grease must be removed from the surface using an appropriate cleaner such as MEK.
2. All surfaces must be mechanically abraded using handheld grinders to ISO 8501/4 ST3 (SSPC SP3 ST3).
3. Once abraded, the surface must be degreased and cleaned using MEK or similar type material.
4. All surfaces must be coated before gingering or oxidation occurs.

Metallic Substrates–Abrasive blast cleaning

1. All oil and grease must be removed from the surface using an appropriate cleaner such as MEK.
2. All surfaces must be abrasive blasted to ISO 8501/4 Standard SA2.5 (SSPC SP10/ NACE 2) minimum blast profile of 75 microns using an angular abrasive.
3. Once blast cleaned, the surface must be degreased and cleaned using MEK or similar type material.
4. All surfaces must be coated before gingering or oxidation occurs.

NOTE: For salt contaminated surfaces the substrate must be pressure washed with clean water and checked for salt contamination, please refer to the surface preparation and pre-application guide for further information.

Mixing

Prior to mixing please ensure the following:

1. The base component is at a temperature between 15-25°C
2. The ambient & surface temperature is above 5°C

Once these two checks have been confirmed, then proceed with mixing the product.

If part mixing the unit of material, please follow the instructions below:

1. Using the spatula place 3 equal measures from the base unit onto the mixing board.
2. Clean the spatula thoroughly.
3. Then take 1 equal measure from the activator unit and place alongside the base measures.

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4. Mix the 2 components together until you have a streak free mix (mid grey) on the mixing board. Ensure there is no unmixed material on the spatula or mixing board.

If mixing a complete unit of material (500gm/1kg/3kg) please follow the instructions below:

1. Dispense as much of the base and activator units onto a clean mixing surface.
2. Mix the 2 components together until you have a streak free mix (mid grey) on the mixing board.
3. Ensure there is no unmixed material on the spatula or mixing board.

From the commencement of mixing, the material should be used within 30 minutes at 20°C(68°F).

Application

Using a spatula or applicator tool, apply the material to the prepared surface.

1. Ensure the product is pressed into any holes, scars, or cracks.
2. Once the repair has been completed smooth off any imperfections using a gloved hand.