

METAL-TECH RG

FAST CURING, UNDERWATER METAL REPAIR EPOXY



METAL-TECH RG is a fast curing; solvent free epoxy paste designed for emergency and routine repairs on metallic substrates.

Its unique formulation allows it to bond and cure underwater, providing a reliable solution for submerged or damp conditions where traditional repair systems fail.

Once cured, it can be machined, drilled, or sanded, ensuring a precise and durable finish suitable for long-term mechanical service.

FEATURES & BENEFITS

- Bonds and cures underwater or on wet surfaces
- Rapid curing for time-critical repairs and minimal downtime
- Fully machinable – can be drilled, tapped, or sanded after cure
- Excellent adhesion to steel and other metals
- Solvent free formulation for safe application in confined or marine environments

TYPICAL APPLICATIONS

METAL-TECH RG is designed for structural and surface restoration of metallic components in marine, industrial, and underwater environments.

Typical applications include:

- Cracked pump or valve casings
- Damaged flanges and leaking seams
- Worn or damaged shafts
- Cracked engine blocks
- Underwater hulls and structures
- Submerged pipelines
- Process vessels and water intake equipment

APPLICATION GUIDE

Phase 1: Surface Preparation

Metallic Substrates – Hand Tool Preparation

1. Remove all oil and grease using a suitable solvent cleaner such as MEK.
2. Clean the surface using a wire brush, coarse sandpaper, or metal file to remove rust, scale, and loose material.
3. Once abraded, degrease and clean again with MEK or a similar solvent.
4. Ensure the surface is dry and free from contamination prior to application.

Metallic Substrates – Mechanical Preparation (Recommended Method)

1. Remove all oil and grease using a suitable solvent cleaner such as MEK.
2. Mechanically abrade the surface using a handheld grinder to achieve a minimum standard of SSPC-SP3 (Power Tool Cleaning).
3. Degrease and clean with MEK or an equivalent solvent to remove all traces of dust and debris.
4. Apply METAL-TECH RG before any flash rusting or oxidation occurs.

Note: For salt-contaminated surfaces, pressure wash thoroughly with clean water and test for surface contamination prior to application. Refer to the Surface Preparation and Pre-Application Guide for further details.

Phase 2: Product Preparation

Before mixing, ensure:

- The base component temperature is between 60–77°F.
- The ambient and surface temperatures are above 41°F.

Pot Life: Once mixed, the material must be used within 5 minutes at 68°F.

Phase 3: Product Mixing

If Part Mixing the Unit:

1. Using the spatula provided, place equal measures of base and activator onto the clean mixing board.
2. Clean the spatula thoroughly after handling the base component before measuring the activator.
3. Mix both components together using a spatula until a uniform mid-gray color is achieved.
4. Ensure no unmixed material remains on the mixing board or spatula.

If Mixing a Full Unit:

1. Dispense the entire contents of both base and activator units onto the mixing board.
2. Mix thoroughly until a streak-free, consistent gray blend is achieved.

Phase 4: Product Application

1. Using a spatula or applicator tool, apply the mixed material directly to the prepared substrate.
2. Press firmly to ensure the paste is worked into any pits, scars, or cracks for full surface contact.
3. Once the repair is complete, smooth the surface using a gloved hand or finishing tool for an even profile.

APPLICATION AT A GLANCE

Step 1 – Preparation

Ensure you have:

- 1 × Base unit
- 1 × Activator unit
- 1 × Spatula
- 1 × Applicator tool
- 1 × Clean mixing area

Step 2 – Measuring

Take equal measures of the base and activator components. Ensure the spatula is clean before handling each component.

Step 3 – Mixing

Mix both components together using the provided spatula. Ensure any unmixed material around the edges is incorporated.

Step 4 – Consistency Check

Create a diamond pattern on the surface of the mix. Inspect for any areas that are not mid-gray — remix until uniform.

Step 5 – Application

Once fully mixed, use the applicator tool to apply METAL-TECH RG to the prepared surface, pressing firmly to fill all voids and imperfections.

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TECHNICAL DATA & PERFORMANCE

Characteristics

Appearance

Base	Black Viscous Paste
Activator	White Viscous Paste
Mixed	Mid Grey Viscous Paste

Solids Content

100%

Volume Capacity

555cc/KG

Sag Resistance

None at ¾ inch

Density

Base	1.80
Activator	1.80
Mixed	1.80

Mixing Ratio

Component	Base	Activator
By Weight	1	1
By Volume	1	1

Shelf Life

2 years if unopened and stored in normal dry conditions 60-86°F

Coverage Rates

200GM of fully mixed product will give the following coverage rates -

1.2ft² at 40mil

500GM of fully mixed product will give the following coverage rates -

5.38ft² at 40mil

Please note that the coverage rates provided are theoretical and do not account for the profile or condition of the surface being repaired.

Cure Times

Useable Life

50°F	10 minutes
68°F	5 minutes
86°F	2.5 minutes
104°F	75 seconds

Minimum Machining Times

50°F	90 minutes
68°F	45 minutes
86°F	22 minutes
104°F	11 minutes

Full Cure

50°F	8 hours
68°F	5 hours
86°F	2 hours
104°F	1 hour

Chemical Resistance

The product is resistant to a wide range of inorganic acids, alkalis, salts, and organic media. For more detailed information, please refer to the Thortex Technical Centre for advice.

Pack Sizes

This product is available in the following pack sizes:

200GM

500GM

Mechanical Properties

Compressive Strength ASTM D695	615kg/cm ² (8,750 psi)
Corrosion Resistance ASTM B117	Minimum 5,000 hours
Flexural Strength ASTM D790	655kg/cm ² (9,315 psi)
Hardness Shore D ASTM D2240	82
Tensile Shear Adhesion ASTM D1002 (Abrasive Blasted Mild Steel with 75-micron profile)	185kg/cm ² (2,630 psi)
Pull Off Adhesion ASTM D4541 (Abrasive Blasted Mild Steel with 75-micron profile)	155kg/cm ² (2,205 psi)
Heat Distortion ASTM D648 at 264psi Fibre Stress	68°F Cure – 136°F 212°F Cure – 208°F
Heat Resistance	Suitable for use in immersed conditions at temperature up to 140°F Resistant to dry heat up to 284°F dependent on load

Approvals

Approved by **BUREAU VERITAS** for Surface Protection and Cold Repair Products applied to Marine Vessels. Certificate No. 58535 / A0 BV.

Food Contact USDA compliant for incidental food contact

Title 21, Food and Drugs, Chapter 1, U.S. Code of Federal Regulations, FDA, Subchapter B – Food for Human Consumption, Section 175.300 (Resinous and Polymeric Coatings).

Technical Service

Complete technical assistance is available. Please contact Thortex America, INC with your requirements: 1-610-831-0222 | kclarke@thortex.com

The products that we supply are for professional use only, it is your responsibility to read the technical data sheets before you place an order and prior to application of the product

Quality

All THORTEX AMERICA, INC products are manufactured and supplied in accordance with an ISO 9001 registered Quality Management System.

Warranty

All THORTEX AMERICA, INC warrants that the performance of the supplied product will conform to the typical descriptions provided in the Technical Data Sheet.

Health & Safety

Please ensure good practices are followed at all times during the mixing and application of this product. Protective gloves and other recommended personal protective equipment must

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be worn. Before mixing and applying the material, please ensure you have read and fully understood all relevant information.

Legal Notice

The data provided in this Product Technical Data Sheet is for informational purposes only and is believed to be accurate at the time of issuance. However, we cannot assume responsibility for results obtained by others whose methods are beyond our control. It is the customer's responsibility to assess the suitability of the product for their intended use. THORTEX AMERICA, INC accepts no liability arising from the use of this information or the product described herein.