

3M™ Scotchkote™ Epoxy Ceramic Rebuild EG 513

Updated
Supersedes

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Data Sheet and Application Guide

Product Description

Scotchkote Epoxy Ceramic Repair EG 513 has been specifically developed as a ceramic filled repair system for rebuilding and repairing equipment requiring good mechanical strength, combined with abrasion and erosion resistance.

Product Features

- Combines optimum application characteristics with good build characteristics.
- Designed for application by trowel or spatula at thicknesses upto 12mm.
- Provides outstanding wear and abrasion resistance.
- Designed for use to repair cracked pump housings, worn impellers, propellers, guide vanes, valves, tube sheets etc.
- Excellent adhesion to correctly prepared metal surfaces.

General Application Steps

1. Remove oil, grease and loosely adhering deposits.
2. Abrade by appropriate means to create a coarse profile.
3. Apply Scotchkote Epoxy Ceramic Rebuild EG 513 to the required thickness.
4. Allow to cure.
5. Visually inspect the system for defects.
6. Repair any defects.

Properties

Property	Value
Colour	Grey
Ratio	3:1 By volume 5:1 By weight
Drying & Cure times at 20°C (68°F)	
Useable life	25 mins
Initial Set	60 mins
Full Mechanical Cure	5 days
Volume Solids	100%
Film Thickness	Upto 12mm.
Volume Capacity	417cc (25.4 cu ins) per kilo
Performance Data	
Flexural Strength	70Mpa (10000 psi) (ASTM D790)
Compressive Strength	105 Mpa (15000 psi) (ASTM D695)
Heat Distortion Temperature	90°C (195°F) post cured 24 hrs@ 100°C (212°F) (ASTM D648)
Abrasion Resistance	157mgm (0.065ml) loss per 1000 cycles, 1kg load, CS17 wheel (ASTM D4060)
Tensile Shear Adhesion	17.5 Mpa (2500 psi) (ASTM D1002)
Corrosion Resistance	5000 hours (ASTM B117)
Hardness (Barcol)	51 (ASTM D2583)
Maximum Operating Temperature	120°C (248°F) - Dry 90°C (195°F) - Wet
Izol Impact Strength	18J/m (ASTM D256 Method A)



Application Procedures for Scotchkote Epoxy Ceramic Rebuild EG 513

Surface Preparation

Heavy contamination due to oil or grease must first be removed using 3M™ Scotchkote™ Cleaner 020. All loose material, rust and surface contaminants, including existing coatings, must be removed and the surface roughened by using an angle grinder, needle gun or abrasive blasting, with abrasive blasting being preferred for optimum performance. Where grinding or needle gunning is used, the surface should be cross-scored to improve adhesion. Care must be taken, when angle grinding, to avoid polishing rather than roughening metal surfaces. Where possible abrasive blasting is the preferred surface preparation, especially in fluid flow repairs.

When treating existing equipment which may be salt impregnated due to service conditions, surfaces should first be wet blasted then dry blasted and tested for presence of salts. This process should be repeated until all salts are removed.

Surfaces should finally be carefully degreased using Scotchkote Cleaner 020. Cloths should be frequently changed to avoid spreading contamination. On deeply pitted surfaces or porous castings, Scotchkote Cleaner 020 should be worked into the surface by brush and washed off using excess cleaner.

Parts (for example, threads or bearing surfaces) which must remain in position during application but must not adhere to the product must be coated with 3M™ Scotchkote™ Release Agent 035 prior to application of the Scotchkote Epoxy Ceramic Rebuild EG 513.

Product Mixing

The product is a two component solvent free material comprising Part A (Base) and Part B (Activator) components which must be mixed together prior to use. 3 volumes of Part A (Base) component and 1 volume Part B (Activator) component should be measured onto a clean mixing board or other

Handling and Safety Precautions

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet, and/or product label prior to handling or use.

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suitable surface. The two components should then be thoroughly mixed until completely streak free.

The mixed material should be used within 25 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

Application Procedures

Application should not be carried out at temperatures below 5°C nor when relative humidity exceeds 85% or when the surface to be repaired is less than 3°C above the dew point.

The mixed material should be pressed firmly onto the prepared area, care should be taken to avoid air entrapment on deeply pitted surfaces. Application should be carried out as soon as possible after surface preparation is complete, and certainly the same day, otherwise flash blasting will be necessary before application. Where necessary 3M™ Scotchkote™ Reinforcement Tape 040 should be stippled into the mixed product and further material applied over

Where a second layer of Scotchkote Epoxy Ceramic Rebuild EG513 is required, this application must be carried out within the initial set time for the first layer, if this is not possible surfaces will require thorough abrasion or abrasive blasting prior to any subsequent material being applied.

Machining will cause excessive tool wear so care should be taken to finish the repair to the required size or dimensions. Formers treated with Scotchkote Release Agent 035 can be used to minimise machining.

Once the product has reached initial set the material can be separated from surfaces treated with Scotchkote Release Agent 035.

All equipment must be cleaned IMMEDIATELY after use with Scotchkote Cleaner 020 or equivalent.

Packaging and Storage

Supplied in 1 kilo packs

Use within 2 years of date of manufacture. Store in original sealed containers at temperatures between 5°C and 32°C

Ordering Information/Customer Service

For ordering, technical and product information or to request a copy of the Material Safety Data Sheet, call +44 (0)1609 780170.

For emergencies, please contact +44 (0)1344 858000.

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