3M™ Scotchkote™ Epoxy Metal Repair **EG 503**

Data Sheet and Application Guide

Product Description

Scotchkote Epoxy Metal Repair EG 503 is a specifically developed high performance metal compound that provides good mechanical strength combined with easy machining properties.

Product Features

- Combines good machining characteristics with good mechanical properties.
- Designed for application by trowel or spatula at thicknesses upto 12mm.
- Provides outstanding cold weld capabilities.
- Designed for use to repairs to cracked casting and rebuilding worn shafts, bearing housings, flanges 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 Metal Repair EG 503 to the required thickness.
4. Allow to cure.
5. Visually inspect the system for defects.
6. Repair any defects.
7. Carry out machining as required.

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
Hard Dry for machining	2 hours
Full Mechanical Cure	3 days
Volume Solids	100%
Film Thickness	Upto 12mm.
Volume Capacity	410cc (25 cu ins) per kilo
Performance Data	
Flexural Strength	70Mpa (10000 psi) (ASTM D790)
Compressive Strength	109 Mpa (15500 psi) (ASTM D695)
Heat Distortion Temperature	90°C (195°F) post cured 24 hrs@ 100°C (212°F) (ASTM D648)
Tensile Shear Adhesion	17.24 Mpa (2500 psi) on abrasive blasted steel (ASTM D1002)
Hardness (Barcol)	51 (ASTM D2583)
Maximum Operating Temperature	120°C (248°F) - Dry 70°C (158°F) - Wet
Izol Impact Strength	18J/m (ASTM D256 Method A)

Application Procedures for 3M™ Scotchkote™ Epoxy Metal Repair EG 503

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.

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.

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, the cleaner 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 Scotchkote Epoxy Metal Repair EG 503 must be coated with 3M™ Scotchkote™ Release Agent 035 prior to application of the Scotchkote Epoxy Metal Repair EG 503

When treating existing equipment which may have become 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.

Product Mixing

Scotchkote Epoxy Metal Repair EG 503 is a two component solvent free material comprising Part A (Base) and Part B (Activator) components which must be mixed together prior to use. Measure 3 volumes of Part A (Base) component and 1 volume Part B (Activator) component onto a clean mixing board or other 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

The mixed material should be pressed firmly onto the prepared area, working the material into any cracks and surface defects.

When Scotchkote Epoxy Metal Repair EG 503 is being used to bond two surfaces together, both surfaces should be coated with the material. The two pieces should then be pressed firmly together and clamped in position until the product has set, any excess material squeezed out should be scraped away before the product begins to cure.

When 3M™ Scotchkote™ Reinforcement Tape 040 is being used to strengthen the repairs the tape should either be impregnated with Scotchkote Epoxy Metal Repair EG 503 or the tape should be laid over the product surface and stippled into the material before it cures, then additional material applied over the surface. Where two applications are required to build up thickness the second application must be carried out within the initial set time of the first application, otherwise the surface of the first application must be abraded.

Packaging and Storage

Supplied in 0.5, 1, 2 and 5 kilo packs

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

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.

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 or fax +44 (0)1609 783762 (Sales) or 788718 (Technical).

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

Important Notice

All statements, technical information and recommendations are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using the 3M™ Scotchkote™ Product, you must evaluate it and determine if it is suitable for your intended application. Because conditions of product use are outside of 3M control's and vary widely you assume all risks and liability associated with such use. Any product related statements not contained in current 3M publications, or any contrary statements contained in your purchase order, shall have no force or effect unless expressly agreed to in writing by an authorised officer of 3M.

Warranty; Limited Remedy; Limited Liability.

3M warrants that the 3M™ Scotchkote™ Product will conform to 3M published specifications upon shipment. If the product is proven not to have met the specifications your exclusive remedy within 12 months of sale by 3M of the product and 3M's sole obligation will be, at 3M's option, to replace the Product or to refund the purchase price of the Product. Except where prohibited by law, this warranty is made in lieu of all other warranties, express or implied, including, but not limited to, any implied warranty of suitability or fitness for a particular purpose, or those arising from a course of dealing, custom or usage or trade.
3M has no obligation under this warranty with respect to any product that has failed due to inadequate or improper storage, handling, surface preparation, application, or maintenance; failure to follow product instructions or recommendations or alteration or damage to the Product caused by accident, neglect, or misuse. OTHER THAN IN THE CASE OF DEATH OR PERSONAL INJURY CAUSED BY ITS NEGLIGENCE AND EXCEPT WHERE PROHIBITED BY LAW, IN NO EVENT SHALL 3M BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGES (INCLUDING LOST PROFITS) ARISING FROM THIS PRODUCT, REGARDLESS OF THE LEGAL THEORY ASSERTED.

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