

3M™ Scotchkote™ Epoxy Ceramic Surfacer FG 512

Data Sheet and Application Guide

Product Description

Scotchkote Epoxy Ceramic Surfacer FG 512 has been specifically developed as a ceramic enhanced epoxy repair coating for resurfacing and reforming metal machinery and equipment, such as pumps, impellers, fans, valves and pipe elbows.

Product Features

- Combines good application characteristics with good erosion and abrasion resistance.
- Designed for application by stiff brush or squeegee.
- Provides outstanding resistance to impingement, entrainment and erosion/corrosion.
- Primarily designed for resurfacing metal components used in fluid flow environments.
- Excellent adhesion to correctly prepared metal surfaces.

General Application Steps

1. Remove oil, grease and loosely adhering deposits.
2. Abrasive blast clean steel surfaces to NACE No. 2/SSPC-SP10 Near White Metal, ISO 8501:1, Grade SA2½.
3. Apply Scotchkote Epoxy Ceramic Surfacer FG 512 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, Blue, Brown
Ratio	3:1 By volume 8:1 By weight
Drying & Cure times at 20°C (68°F)	
Useable life	25 mins
Initial Set	3 hours
Machining Time	6 hours
Full Mechanical	5 days
Volume Solids	100%
Film Thickness (Typical)	250 microns (10 mils).
Coverage Rate	1.77m ² /kilo at 250 microns (19ft ² /kilo at 10 mils)
Performance Data	
Tensile Shear Adhesion	20Mpa (2825 psi) (ASTM D1002)
Compressive Strength	91Mpa (13000 psi) (ASTM D695)
Flexural Strength	63 Mpa (9000 psi) (ASTM D790)
Heat Distortion	67°C (152°F) (ASTM D648)
Abrasion Resistance	126mgm (0.065 ml) loss per 1000 cycles, 1kg load, CS17 wheel (ASTM D4060)
Hardness (Barcol)	31 (ASTM D2583)
Izol Impact Strength	15J/M (ASTM D256 Method A)
Maximum Operating Temperature	120°C (248°F) - Dry 90°C (195°F) - Wet



Application Procedures for Scotchkote Epoxy Ceramic Surfacer FG 512

Surface Preparation

All dust and loose material should be scraped away. Oil and grease should be removed with 3M™ Scotchkote™ O20 Cleaner.

Surfaces should then be abrasive blast cleaned to NACE No 2/SSPC-SPC10 near white metal, ISO 8501:1, Grade Sa2½ or equivalent with a blast profile of 75 microns (3 mil) corresponding to 'Medium'. All loose abrasive dust and debris must be blown clear or vacuum cleaned away.

Equipment which has become salt impregnated due to service conditions should first be wet blasted then dry abrasive blasted and checked for presence of salts. This process should be repeated until the salts are removed.

On sections of repair which are not required to bond to the Scotchkote Epoxy Ceramic Surfacer FG 512 these surfaces should be treated with 3M™ Scotchkote™ Release Agent 035.

Product Mixing

3M Scotchkote Epoxy Ceramic Surfacer FG 512 is a two component material comprising Part A (Base) and Part B (Activator) components which must be mixed together before use. Mix the entire contents of the Part A (Base) and Part B (Activator) containers. Alternatively measure three volumes of Part A (Base) component and one volume of Part B (Activator) into a clean container. The two components should 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 coated is less than 3°C above the dew point.

The mixed material should be applied to the prepared area using a clean brush or squeegee, 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 the tape. For large areas the tape should be overlapped.

In areas where a second coat is required, this application must be carried out within the initial set time for the first coat, otherwise the surface must be lightly abraded or flash blasted.

Machining of Scotchkote Epoxy Ceramic Surfacer FG 512 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.

All equipment must be cleaned IMMEDIATELY after use with Scotchkote O20 Cleaner.

Packaging and Storage

Supplied in 1 and 3 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.

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Important Notice

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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.

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FG512-0114