

3M™ Scotchkote™ Ceramic Repair Systems are high performance molecular compounds for the rebuilding and resurfacing of a wide range of components and equipment that operates in the most aggressive industrial and marine environments subject to erosion, cavitation, impingement, entrainment and corrosion.

The continued operation of essential plant/equipment is the number one priority to maintain production or equipment efficiency and operational capacity. When it comes to repair or rebuilding these vital components maintenance engineers required a comprehensive long term solution.

These two component ceramic repair systems offer the very best selection of engineering paste and fluid grade materials for high performance, 100% solids, flexible poly ceramic and epoxy repairs. They are based on a complex blend of high molecular weight urethane and epoxy polymers blended with inert pigments and silicas. These react with an amine accelerated isocyanate resins which produce long term solutions with optimum physical and mechanical strengths.

These advanced ceramic systems are cold curing, non-shrink solutions to ongoing problems such as protection to chutes, hoppers, pipe elbows, valves, pumps and equipment subject to aggressive attack from dry solids and slurries, protection against impingement, entrainment, cavitation and erosion corrosion. Ideal for resurfacing propellers, kort nozzles, guide vanes and tube sheets and rebuilding and resurfacing of equipment operating in fluid flow environments.



Condenser Tube Sheet
Repaired with Scotchkote Epoxy Metal Repair EG 503 and refurbished with Scotchkote Epoxy Ceramic Surfacers FG 512.

Before



After



Turbine blade refurbishment using 3M™ Scotchkote™ Epoxy Metal Repair XG 509 to rebuild followed by 3M™ Scotchkote™ Epoxy Ceramic Surfacers CR 511 to provide smooth, low friction finish.



Pump impeller refurbished by rebuilding with 3M™ Scotchkote™ Epoxy Ceramic Rebuild EG 513 to repair corrosion damage followed by 3M™ Scotchkote™ Epoxy Ceramic Surfacers FG 512 for a smooth finish.



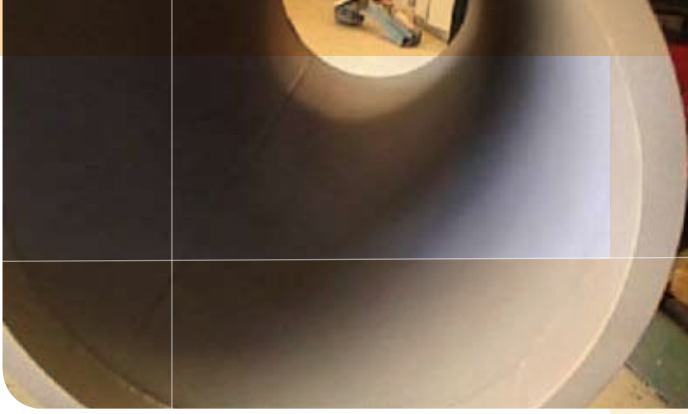
Pump case repaired and rebuilt using Scotchkote Epoxy Ceramic Rebuild EG 513. A second coat of Scotchkote Epoxy Ceramic Surfacers FG 512 applied for a smooth friction free finish.



Corroded and eroded pipe shown after blast preparation and then shown fully protected with an application of Scotchkote Epoxy Ceramic Surfacers FG 512.

Erosion and corrosion prevention

		EPOXY CERAMIC REBUILD EG 513	EPOXY CERAMIC SURFACER FG 512	EPOXY CERAMIC SURFACER HG 519	EPOXY CERAMIC SURFACER CR 511
Appearance:	Part A Colour / Consistency:	Grey / Paste	Grey or Red / Paste	Grey / Paste	Grey or Red / Paste
	Part B Colour / Consistency:	Pale Grey / Paste	Amber / Fluid	Off White / Paste	Amber / Fluid
	Mixed Colour / Consistency:	Grey / Paste	Grey or Red / Fluid	Blue Grey / Paste	Grey or Red / Fluid
Mixing Ratio (Part A:Part B):	By Volume:	3:1	3:1	3:1	2:1
	By Weight:	5:1	8:1	4:1	3.7:1
Volume Capacity / kg:		417cc	440cc	542cc	667cc
Slump Resistance:		12.7mm	375µ	12.5mm	375µ
Density g/cc:	Part A:	2.60	2.60	2.00	1.80
	Part B:	1.65	1.00	1.38	1.20
	Mixed:	2.36	2.20	1.84	1.60
Drying & Cure times at 20°C (68°F)					
Usable Life:		25 min	25 min	60 min	45 min
Initial Set:		60 min	3 hours	3 hours	6 hours
Machining:		2 hours	6 hours	8 hours	6 hours
Service:		16 hours	24 hours	24 hours	24 hours
Full Mechanical Cure:		5 days	5 days	5 days	7 days
Drying & Cure times at 10°C (50°F)					
Usable Life:		40 min	40 min	40 min	90 min
Initial Set:		90 min	5 hours	2 hours	12 hours
Machining:		3 hours	8 hours	5 hours	12 hours
Full Mechanical Cure:		8 days	7 days	7 days	14 days
Performance					
Tensile Shear Adhesion: ASTM D1002 / ASTM 4060	MPa psi	17.24 2500 Grit Blasted Steel	19.2 2800	13.72 2000 Abrasive Blasted Mild Steel	17.24 2500 Grit Blasted Steel
Flexural Strength: ASTM D790	MPa psi	63.97 10000	62.27 9000	41.18 6000	55.89 8100
Compressive Strength: ASTM D695	MPa psi	148 15000	89.73 13000	103.46 15000	63.97 10000
Heat Distortion Temperature: ASTM D648	°C °F	90 194	60 140	60 140	-
Flexibility: ASTM 522-4	%	-	-	-	-
Elongation	%	-	-	-	-
Hardness: ASTM 785		SHORE D - 90	SHORE D - 90	SHORE D - 90	SHORE D - 85
Rebuilding and Protection Guide		Repair of erosion/corrosion damage on: condenser tube sheets, valve bodies, impellers, pump casing, valve discs, pipe bends, flanges, condenser end plates, tank outlets/inlets, dissimilar metals.	Prevention of erosion/corrosion on: pipe bend elbows, pump impellers, casings, valve discs and bodies, condenser boxes, condenser tube sheets, tank surfaces.	Abrasion resistant heavy duty lining material for heavy wear situations, pipes, hoppers, chutes, pumps, valves, tanks.	100% solids coating designed to offer a smooth low friction finish for pumps, water boxes, condenser valves, impellers etc. Approved by WRAS for contact with potable water.



EPOXY CERAMIC LINING HTX 517	URETHANE CERAMIC REBUILD EG 515	URETHANE CERAMIC LINING FG 514
Light Grey or White Paste	Grey Thixotropic / Liquid	Grey / Liquid
Amber / Fluid	Brown / Liquid	Brown / Liquid
Grey / Paste	Grey Paste	Grey / Fluid
4:1	3:1	3:1
5:1	3:1	3:1
780cc	835cc	835cc
750µ	12.5mm	2mm
1.40	1.18	1.18
0.99	1.22	1.22
1.311	1.19	1.19
45 min	20 min	20 min
6 hours	2 hours	2 hours
-	-	-
24 hours	24 hours	24 hours
24 hours	7 days	7 days
90 min	40 min	40 min
12 hours	4 hours	4 hours
-	-	-
48 hours	14 days	14 days
19.2 2800	20 2825	20 2825
67 9700	-	-
142 20370	-	-
149 295	-	-
-	30	30
-	35	25
SHORE D - 90	SHORE 'D' 80	SHORE 'D' 80
Prevention of corrosion for high temperature immersion. Ideal for oil/water separators etc.	For rebuilding metal surfaces subject to severe erosion and cavitation attack. Designed for use on pumps, impellers, propellers, turbine blades etc where cavitation is an ongoing problem.	For use with Scotchkote Urethane Ceramic Rebuild EG 515 on all areas where cavitation occurs. Normally applied by brush to provide a smooth cavitation resistant lining.

Features

- Heavy Duty Erosion/Corrosion Repair Systems
- Fluid Grade Protection Systems
- Abrasion Resistant
- High Temperature Resurfacing Systems
- Smooth Low Friction
- Cavitation Resistant
- Excellent For Disimilar Metal Protection

Benefits

- No Sagging Or Slumping During Application
- W.R.A.S. Approved
- Excellent Adhesion To Metal Surfaces
- Outstanding Impact And Abrasion Resistance
- Multi-Purpose Repair Capability
- Unaffected By Most Industrial Chemicals
- Good Low Temperature Cure Properties

AREAS OF USE

- **Pumps And Valves**
- **Condenser Tube Sheets**
- **Heat Exchangers**
- **Pipes, Chutes And Hoppers**
- **Impellers And Propellers**
- **Tanks And Valves**
- **Bow Thrusters, Kort Nozzles And Rudders**
- **Water Boxes**
- **Archimedes' Screw**



Important Notice

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



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3M™ Scotchkote™ Engineering Repair
Polyceramic Repair Systems



Wise choice

polyceramic
repair

Thortex™ and Thistlebond™ have been rebranded to form part of the Scotchkote range of products from 3M.

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