

MEDWAY
ENGINEERING SPECIALIST

MCC*

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"We fight Corrosion wherever we find it"

Corrosion ?? NO MORE !!!

MEDWAY
ENGINEERING SPECIALIST



MCC*

EG - Metal Paste Grade

- Shaft Journals
- Sloopy Keyways
- Cracked Block & Casings
- Bonds any Metal ; PVC
- Holed Pans & Casings
- Resurfacing Flangers
- Bearing Housings
- Bush Housings
- Spline Repairs
- Bonds to Fiberglass
- General Machining Repairs
- Scored Hydraulic Rams

METAL - XL Paste Grade

- Leaks
- Sloopy Keyways
- Pipes
- Transformers
- Scored Rams
- Holed Pans & Casings

METAL - Fluid Fluid Grade

- Injectable Liquid
- Casting
- Resurfacing
- Smoothing Over EG-RG
- Non-Skid (with Aggregate)

CERAMIC - Metal / Fluid Metal Paste & Fluid Grade

- Valves
- Pumps
- Impellers
- Turbines
- Water Boxes
- Piping
- Tail Shafting
- Propelles
- Head Covers
- Heat Exchangers
- Guide Vanes
- Steam Cut Flangers

CERAMIC - Flow Fluid Grade

- Hydro Turbines
- Pump Casing
- Sand & Silt Flow
- Impellers
- Water Boxes
- Fluid Flow Equipment

CERAMIC - HT/HTA High Temp High Acid Resistance

- Pumps
- Bearing Housing
- Condensate Return Tanks
- Chiller Tank
- General Machining Repairs

CERAMIC - HTS Fluid Grade / Spray

- Pumps
- Turbines
- Sprayable
- Impellers
- Water Boxes
- Longer Pot Life

CERAMIC - HD Heavy Grade

- Chipper Disks
- Flatbacks
- Slurry Pumps
- Coal Chutes
- Hoppers
- Pipe Elbow

Surface Preparation Guidelines



Good surface preparation is essential for the successful application of any protective coating. Prior to the application of any coating all oil, grease, old coatings and surface contaminants (such as mill scale and rust on steel, laitance on concrete and zinc salts on galvanised surfaces) must be removed from the substrate. The performance of any coating is directly dependent upon the correct and thorough preparation of the surface prior to coating.

Removal of Surface Contaminants

The performance of protective coatings applied to steel is significantly affected by the condition of steel substrate immediately prior painting. The principal factors affecting performance are :

- Surface contamination including salts, oil, grease, drilling and cutting fluids.
- Rust and Mill scale
- Surface Profile

The main objectives of surface preparation are to ensure that all surface contaminants have been removed to create a surface profile that allows the coating to adhere to the substrate. Recommended procedures are outlined in International Standard ISO 8504 : 1992 (E) and SSPC SP Specifications.

Steel

Some of the various methods of surface preparation of steel are described below, such as :

- International Standard **ISO 8504 : 1992 (E)**. Preparation of steel substrates before application of paints and related products - Surface preparation methods.
- International Standards **ISO 8501-1 : 1998 (E)** and **ISO 8501-2 : 1994**. Preparation of steel substrate before application of paints and related products - Visual assessment of surface cleanliness.
- Swedish Standard **SIS 05 59 00 (1967)** - Pictorial Surface Preparation Standards for Painting Steel Surfaces

Degreasing

Many surface contaminants can be removed by using solvent washing or degreasing. Once the area has been thoroughly washed it is essential that the area is wiped clean with clean rags. Recommended procedures are described in International Standard ISO 8504 : 1992 (E) and SSPC-SP1.

Surface Preparation Guidelines



Hand Tool Cleaning

Loosely adhering mill scale, rust and old paint can be removed from the surface using a wire brush, sandpaper or scraper. This type of surface preparation will only remove surface contaminants that are visible to the eye and will not remove any ingrained contamination. For this particular type of surface preparation it is recommended that only **Medway Corrocoat AL** are used. Methods for hand tool cleaning are described in ISO 8501-1:1998 grade St2-B, C or D.

Power Tool Cleaning

Generally more effective and less time consuming than hand tool cleaning, power tools such as grinders, sanders, needle guns and power wire brushes will remove rust and mill scale but will not remove tightly adhered contaminants. One major drawback of power tools is to polish the surface of the metal rather than create a key. For this particular type of surface preparation it is recommended that only **Medway Corrocoat AL** are used.

The primary standard used by Medway for surface preparation is ISO 8501-1:1988(E), preparation of steel substrate before application of paints and related products - visual assessment of surface cleanliness. This standard represents a slight extension of the Swedish Standard (SIS 05 59 00 (1967)).

Blast Cleaning

The most effective method for removal of mill scale, rust and old coatings is to use abrasives, although there are many types of abrasive on the market Medway recommends for the application of chemical and corrosion coatings angled grit should be used for cleaning and profiling of steel surfaces.

Key areas to be considered during the blasting process are;

1. The presence of salts, grease and oils on the surface. These may appear to be removed during the blasting process. However they may have been ingrained into the surface of the metal and will require sweating from the metal substrate.
2. Weld seams, metal slivers and sharp edges must be ground down after the blasting process as coatings tend to run away from sharp edges and will result in thinning of the paint surface.
3. Weld spatter is proven to be one of the main reasons for failure and must be removed, as the spatter maybe poorly adhered to the steel surface.

As mentioned above Medway recommends the use of angled grit for the surface preparation of steel surfaces. Other abrasives are proven to leave lower profiles and subsequently reduce the performance and adhesion of the product. Too low a profile may not provide a sufficient key for coating, while too high a profile may result in uneven coverage of high, sharp peaks possibly leading to premature coating failure.

International Surface Preparation Standards

Introduction

There are many surface preparation standards worldwide, the chart below is to be used as a comparison of the preparation standards recognised for Medway Corrosion Consultants Pte Ltd coatings and repair materials. If you have any questions regarding the information listed below then please contact MCC on +65 62432808 or by email at philmedway@medway.sg

Comparison of Surface Preparation Standards

Surface Prep	BS7079	ISO	SSPC	NACE	BS4232
NON ABRASIVE BLAST CLEANING					
Solvent only			SSPC-SP-1		
Hand tool	Part A1/D3 ST2, ST3	8501/4 ST2, ST3	SSPC-SP-2		
Power tool	Part A1/D3 ST2, ST3	8501/4 ST2, ST3	SSPC-SP-3		
ABRASIVE BLAST CLEANING					
White metal	Part A1/D2 SA3	8501/4 SA3	SSPC-SP-5	NACE No 1	BS4232 1 st Quality
Near white metal	Part A1/D2 SA 2 ½	8501/4 SA 2 ½	SSPC-SP-10	NACE No 2	BS4232 2 nd Quality
Commercial blast	Part A1/D2 SA2	8501/4 SA2	SSPC-SP-6	NACE No 3	BS4232 3 rd Quality
Brush blast	Part A1/D2/ S1	8501/4 SA1	SSPC-SP-7	NACE No 4	

Photographic evidence of different surface preparation standards



Medway Metal Repair



Medway Metal Repair Solutions..

Medway metal repair systems are an advanced blend of resins and polymers suitable for repairs to mechanical equipment and components. Available in paste or fluid grades the product range offers a versatile and durable solution to many day to day engineering problems.

Our products are manufactured to the highest standards and are ideal for rebuilding or resurfacing repairs to capital equipment in a wide range of industrial environments.

The Medway metal repair product range is proven to enhance the performance of worn or badly damaged metallic surfaces, allowing the user to extend the life of expensive capital equipment while reducing the overall life cycle cost.

The Product Range –

Medway EG - Metal

Rebuilding grade for badly pitted and scarred surfaces requiring a smooth machined finish.

The Medway metal repair range has been used in the Chemical, Marine, Oil and Gas, Paper and Pulp, Water and Power industries.



Medway Metal & Ceramic Application



Medway Ceramic - Metal

Rebuilding grade for badly pitted and scarred surfaces.



Medway Ceramic Repair Solutions..

Medway ceramic enhanced fluid and paste grade products are suitable for a wide range of repairs and preventative maintenance to mechanical equipment and components subject to impact, erosion and corrosion.

The product range has been designed to be easy to apply, offer good chemical resistance and give long lasting service in the most aggressive operating conditions.

The Medway Ceramic Repair range has a proven track record in the Chemical, Marine, Oil and Gas, Paper and Pulp, Water and Power industries.

Typical repairs include–

Eroded slurry, sewage and salt water pump casings Damaged cyclone housings Corroded valve casings Eroded and damaged bow thrusters.

Features of the product range include–

Simple and easy to use Solvent free No shrinkage or sagging Good abrasion resistance

Excellent chemical resistance to acids & alkalis

High temperature resistance up to 250°C



Medway Ceramic Repair

*Medway Ceramic - Fluid Metal
Medway Ceramic - Flow*

Typical repairs include –

Leaking tank seams. Worn bearing housings. Sloppy keyways. Stripped threads. Scored hydraulic rams. Cracked engine blocks. Pitted and scarred pump housings.

Features of the product range include –

Simple and easy to use. Solvent free. No shrinkage or sagging. Easily machined down to a smooth finish. Excellent chemical resistance to acids and alkalis. High temperature resistance up to 250°C.

Benefits of the product range include –

Cost effective solution to a wide range of applications. Allows quick and effective repairs to mechanical components. Reduced downtime of essential equipment. Reduced life cycle costs.



Medway Ceramic Spray Application

SOLVENT
FREE

*Medway Ceramic - HT / HTS (Spray
Type)*
High temperature erosion-corrosion
resistant coating

Medway HTS - Spray

Medway HT - Spray is designed to upgrade the performance of conventional materials. Typical application include the coating of oil and gas processing equipment.

Simple and easy to use

Solvent free

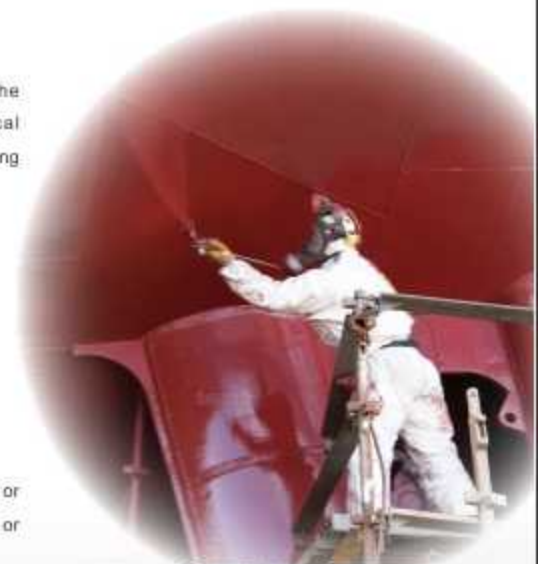
Now shrinkage or sagging

Good abrasion resistance

Excellent chemical resistance

High temperature resistance up to 240 C

Can be applied directly to abrasive blasted steel or surface previously rebuilt with medway EG-Metal or Medway Ceramic-Metal.



Medway

Application Chart

	Medway EG Metal	Medway Ceramic Metal	Medway Ceramic Fluid Metal	Medway Ceramic Flow	Medway Ceramic HD
Pump casing internals sewage			●		●
Pump impellers liquid		●	●	●	
Pump impellers powder		●	●	●	
Pump impellers aggregate			●		●
Pump impellers - slurry			●		●
Pump impellers sewage			●		●
Rudders rebuild/protect		●	●	●	
Screw conveyors rebuild/protect					●
Shafts worn/scored - rebuild	●				
Sleeves - bonding	●				
Steering gear - rebuild	●				
Sumps rebuild/protect	●		●		
Tail shafts - rebuild		●			
Tanks, leaking seam chemical	●		●		
Tanks, leaking seam sewage	●		●		
Tanks, leaking seam slurry		●	●		
Tank lining sewage			●		●
Tank lining slurry			●		●
Threads, stripped - reform	●				
Tube sheets rebuild/protect		●	●	●	
Turbine runners rebuild/protect		●	●	●	
Vacuum Pumps rebuild/protect		●	●	●	
Valves rebuild/protect	●	●	●	●	
Water boxes rebuild/protect	●	●	●	●	
Wear plates rebuild/protect					●

Medway

Application Chart

	Medway EG Metal	Medway Ceramic Metal	Medway Ceramic Fluid Metal	Medway Ceramic Flow	Medway Ceramic HD
Base plate cracked rebuild	●				
Bearing housing rebuild	●				
Bearing support rebuild	●				
Bow thrusters rebuild/protect		●	●	●	
Casings holed - rebuild	●				
Centrifuges rebuild/protect					●
Chutes liquid rebuild/protect		●	●	●	
Chutes powder rebuild/protect		●	●	●	
Chutes aggregates rebuild/protect					●
Cyclones rebuild/protect					●
Deflector screens rebuild/protect					●
Engine block - rebuild	●				
Evaporators rebuild/protect		●	●		
Filters/strainers - protect				●	
Flange faces rebuild/protect	●		●		
Heat exchangers - rebuild/protect	●		●		
Hydraulic rams scored - rebuild	●				
Hoppers powder rebuild/protect		●	●		
Hoppers aggregate rebuild/protect					●
Jet tubes rebuild/protect		●	●	●	
Keyways rebuild	●				
Kort nozzles rebuild/protect		●	●	●	
Machine beds scored rebuild	●				
Mixing bowls rebuild/protect					●
Pintle sleeves rebuild/protect	●		●		
Pipe elbows/bends rebuild/protect					●
Pipe leaks - repair	●				
Pipe work internal liquid		●	●	●	
Pipe work internal powder		●	●	●	
Pipe work internal - aggregate					●
Process vessels rebuild/protect		●	●		
Propellers rebuild/protect		●	●		
Pump casing internals liquid		●	●	●	
Pump casing internals powder		●	●	●	
Pump casing internals slurry			●		●

Medway Product

SOLVENT
FREE



made in United Kingdom

Medway EG - Metal

Medway EG-Metal is an engineering grade metal repair compound which is suitable for emergency repairs or as part of planned maintenance to equipment such as worn or damaged pump shafts, cracked pump or valve casings, scored hydraulic rams, worn bearing housing, damaged flanges, leaking tank seams, worn keyways and cracked engine blocks. The two component product has been designed for use on a wide range of metallic surfaces and once mixed and cured is readily machinable.

Medway Ceramic - Metal

Medway ceramic metal is a non-machinable erosion-corrosion resistance metal repair compound which is principally used in fluid flow situations to repair equipment.

Medway Ceramic - Fluid

Medway ceramic metal is a non-machinable erosion-corrosion resistance metal repair compound which is principally used in fluid flow situations.

Medway Ceramic - Flow

Medway ceramic flow is an erosion-corrosion resistance coatings use principally in fluid flow situations for improving flow efficiency.

Medway ceramic flow can be applied directly to abrasive blasted steel or to surfaces previously rebuilt with EG-Metal or Ceramic-Metal.

Medway Ceramic - HT / HTS

Medway Ceramic HT is designed to upgrade the performance of conventional materials of construction and it particular to protect equipment operating in contact with water and aqueous/hydrocarbon mixtures against erosion-corrosion at elevated temperatures.

Medway Ceramic HT can be applied directly to abrasive blasted steel or to surfaces previously rebuilt with EG-Metal or Ceramic-Metal.

Medway Ceramic - HD

Medway Ceramic HD is heavy duty abrasion resistance repair and lining material for use on equipment such as chutes, hoppers, pipe bends, pump casings, etc. Which are subject to high abrasive wear.

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Solution for general industry