

## Product and Technology Description

MCU-Ferroguard® is a single component, moisture cure urethane coating. The technology combines micaceous iron oxide (MIO) and refined coal tar to create a superior corrosion resistant coating. MCU-Ferroguard® is designed for severe exposures, including immersion and buried applications. It can be applied as either a single coat system or in 2 or more coats. MCU-Ferroguard® passes the LC 5 fish toxicity test and has proven to outperform coal tar epoxy coatings. MCU-Ferroguard® is recommended for both concrete and steel surfaces.

## Technology Features

1 component – minimal preparation and no pot-life limitations  
 Can be applied in 6 % to 99 % relative humidity  
 Cures quickly, even at -20 °C, 45 minute recoat possible  
 Can be applied at ambient temp. to 50°C & steel to 75°C  
 High surface tolerance  
 Exceptional corrosion resistance  
 Excellent abrasion resistance  
 Good chemical resistance  
 Superior Flexibility - No cracking, flaking or peeling  
 Moisture resistant after 30 minutes  
 High resistance to blistering  
 Typical service temperatures -45°C to 145°C \*

Excellent adhesion to most substrates and sound aged coatings  
 UHP WJ, dry/wet blasting & power tool cleaning

## Product Specific Features

Corrosion resistant in buried environments  
 No maximum recoat-window  
 Proven to outperform coal tar epoxy coatings  
 Wide DFT tolerance  
 Excellent wetting out properties  
 Passes the LC 5 fish toxicity test

## Areas of Use

### Substrates

Ferrous – mild steel / cast iron  
 Non-ferrous metals  
 Metallized coatings  
 Galvanised metal  
 Aluminium  
 Stainless steel  
 Concrete  
 (and most sound old coatings)

### Possible uses

Structural steel / atmospheric zones  
 Bridges  
 Oil & gas storage / offshore platforms / refineries  
 Port facilities / ships / wharves / jetties  
 Material handling equipment  
 Wind energy / hydropower  
 Pipes / pumps / valves  
 Chemical processing plants / paper mills  
 Steel tanks  
 Concrete floors  
 Water and wastewater treatment sites

## Specifications

Resin type: Aromatic urethane  
 Pigment type: Refined coal tar & MIO  
 Sheen: Flat  
 Colour: Black & red oxide  
 Volume solids: 72%±2.0%  
 VOC: 249 g/l

**Theoretical coverage:** 7,2 m<sup>2</sup>/l @ 100µm DFT:

### Recommended film thickness:

Wet: 140 – 415 µm - no thinners  
 Dry: 100 - 300 µm

### Performance test data:

Adhesion (ASTM D4541): >14 MPa (2030 PSI)  
 Abrasion resistance (ASTM D4060): CS17 wheel 1,000 cycles/kg  
 3.1 mg loss  
 Impact (ASTM 2794): direct 100; reverse 30  
 Prohesion (ASTM G85 5,000 hours): scribe rate 9.5; No blistering  
 Flexibility (AST D522): 1 ½" to 1/8" Mean Elongation: 39%  
 Dry Heat Resistance: continuous 100 °C  
 Salt Spray (ASTM B117): +20,000 hours (several systems)  
 Norsok M-501: Passes  
 ISO 12944 C5I: Passes

## Storage and Shipping Information

Shelf life: 15 months from date of manufacture if stored unopened between -5 °C & 30 °C in a cool, dry place  
 Density: 1.5 ± 0.12 kg/l  
 Flash point: 38.5 °C  
 UN proper shipping name: UN 1263, PAINT, Class 3, Packaging Group III

## Drying Times and Temperatures – 75µm DFT

Temperatures RH at 60% *	Tack free		Recoat minimum & maximum *		Full cure	
	without MCU-Quickcure®	with MCU-Quickcure®	without MCU-Quickcure®	with MCU-Quickcure®	Without MCU-Quickcure®	with MCU-Quickcure®
-20 °C	20 hours	15 hours	48 hours / Indef	10 hours / Indef	**	**
-10 °C	15 hours	10hours	24 hours / Indef	6 hours / Indef	**	**
0 °C	7 hours	5 hours	12 hours / Indef	1.5 hours / Indef	**	**
10 °C	30 minutes	20 minutes	4 hours / Indef	1 hour / Indef	10 days	10 days
25 °C	10 minutes	10 minutes	3 hours / Indef	45 minutes / Indef	7 days	7 days
40 °C	10 minutes	10 minutes	45 hours / Indef	30 minutes / Indef	5 days	5 days

Refer to MCU-Quickcure® Technical Data Sheet for additional information

\* Humidity, temperature, and coating thickness will affect drying and curing times

\*\* Product is serviceable but will cure slowly and remain soft for a long period

## Surface Preparation

### Ferrous Metal

Use SSPC-SP1 solvent cleaning and/or MCU-Ecodegreaser® to remove oil and grease and other contaminants prior to employing surface preparation methods.

Prepare surfaces for non-immersion or atmospheric service projects by ISO 8504-2 methods to ISO 8501-1 SA 2 or SSPC-SP6/NACE No.3 (visual standard SSPC vis 1) Commercial Blast Clean finish OR by SSPC 12/Nace 5.0 High or Ultra High pressure water jetting methods to WJ 4 M (visual standard SSPC vis 4/Nace vis 7); OR by SSPC-TR2/Nace 6G198 Wet abrasive blast cleaning methods to WAB 6 M (visual standard SSPC vis 5/Nace vis 9) Wet commercial blast clean finish.

For minimum surface preparation, use conscientious hand and power tool cleaning methods in accordance with ISO 8504-3 or SSPC-SP 2 and 3 to remove corrosion and loose or failing paint to ISO 8501-1 St 2 or SSPC-SP 2 and 3 (visual standard SSPC vis 3). Feather the edges of sound, existing paint back to a firm edge.

Blast cleaning methods should produce a minimum surface profile of 25-50 µm.

### Aluminium / Galvanized / Non-Ferrous Metals

Prepare surfaces using SSPC-SP1 Solvent Cleaning and SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods OR using MCU-Ecocleaner® to remove surface contamination. Supplement weathered galvanized surface preparation with ISO 8501-1 St 3 (SSPC-SP3) Power Tool cleaning OR apply MCU-Ecocleaner to remove excessive corrosion and impart surface profile on bare metal.

Spot prime clean bare metal with MCU-Coatings® recommended primer.

### Concrete/Concrete Block

The surface must be touch dry, free of surface contaminants, and in sound condition. Grease, and oil should be removed by ASTM D4258-83 (Reapproved 1999) and release agents should be removed by ASTM D4259 - 88 (Reapproved 1999) OR with MCU-Ecodegreaser®.

Refer to SSPC-SP13/NACE No 6 mechanical or chemical surface preparation methods for preparing concrete to suitable cleanliness for intended service.

Surface preparation methods should impart sufficient surface profile for mechanical adhesion to occur. Ensure surface is thoroughly rinsed and dry prior to coating application.

Allow a minimum 7 days cure time for new concrete prior to preparation and application (10 days in cold climates).

Add up to 25% MCU-Thinners when sealing concrete.

### Existing Coatings

Prepare surfaces using SSPC-SP12/NACE No.5 Low Pressure Water Cleaning methods to remove surface contamination.

Supplement SSPC-SP12 LPWC with SSPC-SP1 Solvent Cleaning, MCU-Ecocleaner® and/or SSPC-SP2 and 3 Hand and Power Tool cleaning in areas with corrosion and loose or flaking paint (feather edges of sound, existing paint back to a firm edge), OR prepare surfaces using SSPC-SP 12/Nace No.5 High or Ultra High Pressure water-jetting to WJ 4.

Spot prime clean, bare metal areas with MCU-Coatings recommended primer. Sand glossy surfaces to create a profile.

### Best Practice

MCU-Ferrogard® is designed for application to a variety of substrates and tightly adhering, previously existing coatings. Apply a test sample to a small area to determine coating adhesion and/or compatibility. Spot prime any areas cleaned to bare metal with a MCU-Coatings® recommended primer. For immersion or severe environments, apply over a recommended MCU-Coatings® primer.

The surface to be coated must be dry, clean, dull, and free from dirt, grease, oil, rust, mill scale, salts or any other surface contaminants that interfere with adhesion.

Ensure welds, repair areas, joints, and surface are properly cleaned and treated prior to coating application.

Consult the referenced standards, SSPC-PA1 and your MCU-

Coatings representative for additional information.

## Application Information

MCU-Ferroguard® can be applied by brush, roller, airless spray, pressure pot, and conventional spray methods. Follow proper mixing instructions before applying.

### Mixing

Material temperature should be 3°C above the dew point before opening and agitating. If not, warm the can accordingly, this will prevent moisture intrusion into the open can. Power mix thoroughly prior to application. Do not keep under constant agitation.

If required, apply a solvent float over the material (approx. 2mm) to prevent moisture intrusion, then cover the can.

### Reducer

Typically not required. If necessary, thin up to 10% with a recommended MCU-THINNER®. See Technical Data Sheet for additional information.

### Brush/Roller

Brush:	Natural fibre
Roller:	Natural or synthetic fibre cover
Nap:	5 to 10 mm (higher nap, thicker coat)
Core:	Phenolic

### Airless Spray

Pump Ratio:	28-40:1
Pressure:	165-193 bar (2400 – 2800 psi)
Hose:	5 to 10 mm (1/4" to 3/8")
Tip Size:	0.015-0.021
Filter Size:	60 mesh (250 µm)

### Conventional Spray

Fluid Nozzle:	E Fluid Tip
Air Cap:	704 or 765
Atomizing Air:	3.1 - 5.2 bar
Fluid Pressure:	1 - 1.4 bar
Hose:	12mm ID; Max 16 metres

## Warranty

MCU-Coatings® warrants its products to be free from defects in materials. MCU-Coatings® sole obligation, and Buyer's exclusive remedy, in connection with the products shall be limited, at MCU-Coatings® option to either replace the products not conforming with this warranty, or to credit the Buyer's account with the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to MCU-Coatings® in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf- life, or six months from the delivery date, whichever is earlier. Buyer's failure to notify MCU-Coatings® of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

MCU-Coatings® makes no other warranties concerning the products. No other warranties, whether expressed,

### Clean-up

MCU-Thinner®, MCU-Thinner 25®, and MCU-Thinner 50®. If MCU-Thinners® are not available for cleaning up, use MEK, MIBK, Xylene, a 50:50 blend of Xylene and MEK or MIBK.

Do not add unauthorized solvents to MCU-Coatings®.

### Application

**Temperature:** - ambient temp. to 50°C & steel to 75°C

Substrate must be visibly dry.

\* In extreme environments the resistance will diminish over time

**Relative Humidity:** 6% to 99%

MCU-Quickcure® is advised when relative humidity is below 40%.

### Coating Accelerator:

See MCU-Quickcure® Technical Data Sheet for information.

### Storage

Store off the ground in a dry, protected area in temperature between -5 °C to 30 °C. Containers must be kept sealed when not in use. Use a solvent float to reseal partially used containers.

### Safety Precautions

This product is for industrial and professional use only. Consult the Safety Data Sheet.

## Limit of Liability

MCU-Coatings® liability on any claim of any kind, including claims based upon MCU-Coatings® negligence or strict liability for any loss or damage arising out of, connected with, or resulting from the use of the products, shall in no case exceed the purchase price allowable for the products or part thereof that gave rise to the claim. In no event shall MCU-Coatings® be liable for

implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall MCU-Coatings® be liable for consequential or incidental damages.

Any recommendations or suggestions relating to the use of the products made by MCU-Coatings®, whether in its technical literature, or in response to specific inquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having the requisite skill and know-how in the industry, and therefore the Buyer must satisfy itself as to the suitability of the products for their own particular use, and it shall be deemed that Buyer has done so at its sole discretion and risk. Variations in environment, changes in procedures of use or extrapolation of data may cause unsatisfactory results.

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