MCU FERROGUARD

mcu coatings
best in corrosion protection

Product and technology description

Single component, moisture cured polyurea. MCU-FERROGUARD combines micaceous iron oxide (MIO) and refined coal tar resin to deliver superior corrosion resistance. MCU-FERROCUARD has proven outstanding performance in severe exposures and is recommended for application on most substrates that are exposed to immersion, splash zones, continuous condensation and buried environments. It has the ability to provide maximum barrier protection with a single coat and can also be applied as part of a multi-coat system. Testing has confirmed that MCU-FERROGUARD outperforms coal tar epoxy coatings in many ways. MCU-FERROGUARD is also a standard coating for concrete surfaces.

Technology features

Applies in 6% to 99% relative humidity
Applies to damp substrates
Resistant to moisture within 30 minutes of application
Cures fast, even at -20 °C
1 component
No pot life
No induction time
No recoat time restriction
No short or long term cracking
High chemical resistance
High resistance to blistering
Excellent abrasion resistance
Compatible with most conventional coatings
Suitable for maintenance and new construction

Area of use

Substrates
Ferro
Non-ferro
Concrete
Metalized
Galvanised
Aluminium
Stainless steel surfaces
Mild steel
Cast iron
Previously existing coating

Possible uses
Ballast Tanks
Bridges
Structural Steel
Tanks interiors
Work Boats
Offshore Platforms
Marine/Port Facilities
Material Handling Equipment
Refineries
Pulp and Paper Mills
Pipes
Chemical Processing Facilities
Floors
Hydropower Facilities
Water and Wastewater Treatment Facilities
Pipe lines

Specifications

Resin type:	Aromatic polyurea
Pigment type:	Refined coal tar and Micaceous Iron Oxide
Sheen:	Flat
Colours:	Black and red oxide
Volume solids:	68.0 % ± 2.0
VOC:	Black: 411 g/l Red oxide 420 g/l

Recommended film thickness
wet: 147 - 257 µm (5,8 - 10,1 mils)-not thinned
dry: 100 - 175 µm (4.0 - 7.0 mils)
Above 150 µm DFT adding MCU-Quickcure recommended.

Theoretical coverage: 25 µm DFT: 27,2 m^2/L
1 mil DFT: 1108 ft^2/gal

Performance test data
Adhesion (ASTM D4541): >14 MPa (2030 PSI).
Impact (ASTM 2794): direct 160; reverse 30.
Prohesion (ASTM G85 5000 hours): scribe rate 9.5; blistering: none.
Dry heat resistance: continous 90 ºC (194 ºF).
Salt Spray (ASTM B117): +20.000 hours (several systems).
Norsok M-501 system 1: passes
Norsok M 501 system 3: passes
ISO 12944 C5M high: Passes

Shipping information

Packaging size:	15 litres
Shelf life:	115 months from date of shipment when stored unopened between -5 ºC and 35 °C in a dry cool place
Density:	1.5 (black), 1,6 (red oxide) ± 0.12 kg/L
Flash point:	25 ºC (77 ºF)
UN Proper Shipping Name:	UN 1263, PAINT, Class 3, Packaging Group III

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Drying times and temperatures

Temperatures RH at 60% *	Tack free		Recoat minimum		Full cured	
	without MCU-Quickcure	***with MCU-Quickcure***	*without MCU-Quickcure*	***with MCU-Quickcure***	*without MCU-Quickcure*	***with MCU-Quickcure***
-20 °C (-4 °F)	20 hours		48 hours	10 hours		
-10 °C (14 °F)	15 hours		24 hours	6 hours		
0 °C (32 °F)	7 hours		12 hours	1,5 hour		
10 °C (50 °F)	30 minutes		4 hours	1 hour	10 days	
25 °C (77 °F)	10 minutes		3 hours	30 minutes	7 days	
40 °C (104 °F)	10 minutes		3 hours	30 minutes	5 days	

Refer to MCU-Quickcure Product Data Sheet for addional information
* Humidity, temperature and coating thickness (>100 µm DFT) will affect drying and curing times

Surface preparation

Ferrous Metal

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

Blast Clean surfaces for immersion or severe service projects by ISO 8504-2 methods to ISO 8501-1 Sa2.5 or SSPC-SP10/NACE No. 2 (visual standard SSPC vis 1) Near White Metal finish or by SSPC-SP12/NACE 5.0 High or Ultra High Pressure water jetting methods to WJ 2M (visual standard SSPC vis 4/NACE vis 7) very thorough cleaning finish (not applicable for new steel) or by SSPC-TR2/NACE 6G198 Wet abrasive blast cleaning methods to WAB 10M (visual standard SSPC vis 5/NACE vis 9) Wet near white metal blast clean finish. Consult your MCU-Coatings representative for minimal surface preparation.

Prepare surfaces for non-immersion or atmospheric service projects by ISO 8504-2 methods to ISO 8501-1 Sa2 or SSPC-SP6/NACE No.3 (visual standard SSPC vis 1) Commercial Blast Clean finish or by SSPC-SP12/NACE 5.0 High or Ultra High pressure water jetting methods to WJ 4M (visual standard SSPC vis 4/NACE vis 7) or by SSPC-TR2/NACE 6G198 Wet abrasive blast cleaning methods to WAB 6M (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-SP2 and 3 to remove corrosion and loose or failing paint to ISO 8501-1 St2 or SSPC-SP2 and 3 (visual standard SSPC vis 3). Feather-edges of sound, existing paint back to a firm edge. Blast cleaning methods should produce a surface profile of 25-50 µm (1.0 - 2.0 mils).

Aluminum/Galvanized/Non-Ferrous Metals

Prepare surfaces using SSPC-SP1 Solvent Cleaning and SSPC-SP12/NACE No. 5 Low Pressure Water Cleaning methods to remove surface contamination. Supplement weathered galvanized surface preparation with ISO 8501-1 St 3 (SSPC-SP 3) Power Tool cleaning to remove excessive corrosion and impart surface profile on bare metal. Spot prime clean bare metal with the recommended primer of MCU-Coatings. Suplement new galvanized surface cleaning with mechanical abrasion to impart surface profile and support mechanical adhesion.

Concrete/Concrete Block

The surface must be 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). 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 - 14 days cure time for new concrete prior to preparation and application.

Previously 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 and ISO 8501 St 2 (SSPC-SP2 and 3) Hand and Power Tool clean areas of corrosion and loose or flaking paint (feather edges of sound, existing paint back to a firm edge). OR prepare surfaces using SSPC-SP12/NACE 5.0 High or Ultra High Pressure waterjetting to WJ 4. Spot prime clean, bare metal with MCU's recommended primer. Sand glossy surfaces to provide profile. Apply a test sample to a small area to determine coating compatibility.

Good Practices

MCU-FERROGUARD 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 compatibility. Spot prime any areas cleaned to bare metal with a recommended primer from MCU-Coatings.
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 defects exposed by surface preparation are properly cleaned and treated prior to coating application.

Consult the referenced standards, SSPC-PA1 and your MCU-coatings Representative for additional information or recommendations.

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Application information

MCU-FERROGUARD can be applied by brush, roll, airless spray and conventional spray methods (one grade only). Follow proper mixing instructions before applying.

Mixing

Material temperature must be 5 °F (3 °C) above the dew point before opening and agitating. Power mix thoroughly prior to application. **Do not keep under constant agitation.**
Apply a 3-6 oz (9-18 cl) solvent float over material to prevent moisture intrusion and cover pail.

Reducer

Typically not required. If necessary, thin up to 10% **with recommeded thinner of MCU-Coatings**. See technical data sheet MCU-Thinners for additional information.

Brush/Roller

Brush:	Natural Fiber
Roller:	Natural or synthetic fiber cover
Nap:	1/4" to 3/8"
Core:	Phenolic

Airless Spray

Pump Ratio:	28-40:1
Pressure:	2400-2800 psi
Hose:	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:	45-75 lbs.
Fluid Pressure:	15-20 lbs.
Hose:	½" ID; 50' Max

Clean up

MCU-Thinner, MCU-Thinner 25 and MCU-Thinner 50. If MCU-Coatings thinners are not available, use MEK, MIBK, Xylene, a 50:50 blend of Xylene and MEK or MIBK, or acetone for clean up only. Do not add unauthorized solvents to a coating of MCU-Coatings.

Application Conditions

Temperature: -20 °C to 75 °C (-4 °F to 167 °F)
This temperature range should be achieved for ambient, surface and material temperature. Substrate must be visibly dry.

Relative Humidity: 6% to 99%*
MCU-Quickcure is advised when relatives humidities are below 40%

Coating Accelerator: MCU-Quickcure. See MCU-Quickcure Product Data for information.

Storage

Store off the ground in a dry, protected area in temperature between -5 °C to 35 °C (23 °F to 95 °F). Containers must be kept sealed when not in use. Use a solvent float to reseal partial containers.

Safety precautions

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

Warranty

MCU-Coatings warrants its products to be free from defects in materials. MCU-Coatings's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited at MCU-Coatings's option to either replacement of products not conforming with this warranty or to credit the Buyer's account 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, 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 requisite skill and know-how in the industry, and therefore it is for Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so at its sole discretion and risk. Variation in environment, changes in procedures of use or extrapolation of data may cause unsatisfactory results.

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 give rise to the claim. In no event shall MCU-Coatings be liable for consequential or incidental damages. Published Product Data Sheets are subject to change without notice. Contact your MCU-Coatings Representative for current Product Data Sheets.