

mcu ferroguard

technology description

single component moisture cure urethane coating

technology features

applies in 6% to 99% humidity
applies to damp substrates
resistant to moisture within 30min. of application
cures fast, even at -12°C
no induction time
superior adhesion to various substrates
no recoat time

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

product description

MCU-Coatings combined moisture-cure urethane technology, micaceous iron oxide, and refined coal tar resin to produce a superior corrosion resistant coating. MCU-Ferroguard has proven outstanding performance in severe exposure, and is recommended for application on various substrates for immersion, atmospheric, and buried environments. It has the ability to provide outstanding barrier protection in one-coat or multi-coat systems. MCU-Ferroguard passes the LC 50 fish toxicity test and has proven to outperform coal tar epoxy coatings in many ways.

area of use

substrates

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

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

ready reference information

resin type: aromatic urethane
pigment type: refined coal tar and micaceous iron oxide
sheen: flat
colours: black and red oxide
volume solids: 72.0% ± 2.0
VOC: <1.38 lb/gal (165 g/l)
(volatile organic content)
theoretical coverage: @ 1 mil dft: 1155 ft²/gal
@ 25 µm dft: 28.4 m²/l

recommended film thickness

wet: 6.9 - 14.4 mils (81 - 494 microns)-not thinned
dry: 5.0 - 14.0 mils (127 - 356 microns)

recommended coverage per coat:

82 ft²/gal at 14.0 mils dft - 231 ft²/gal at 5.0 mils dft
(2.0 m²/l at 356 microns dft - 5.7 m²/l at 127 microns dft)

thinning: mcu-thinner, mcu-thinner 25
clean up: mcu-thinner, mcu-thinner 25

drying times and temperatures

*at 50% humidity	50°F / 10°C		72°F / 24°C		95°F / 35°C	
	without QuickCure	with QuickCure	without QuickCure	with QuickCure	without QuickCure	with QuickCure
tack free	1 h	-	30 min	-	20 min	-
recoat minimum	8 h	1 h	4 h	30 min	3 h	20 min
ful cure	10 days	7 days	7 days	5 days	5 days	4 days

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 SA 2.5 or SSPC-SP10/NACE No. 2 (visual standard SSPC vis 1) Near White Metal finish OR by SSPC 12/Nace 5.0 High or Ultra High Pressure water jetting methods to WJ 2 M (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 10 M (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 SA 2 or SSPC-SP6/NACE No. 3 (visual standard SSPC vis 1) Commercial Blast Clean finish OR by SSP 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-edges of sound, existing paint back to a firm edge.

Blast cleaning methods should produce a surface profile of 1.0 - 2.0 mils (25-50 microns).

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 MCU recommended primer. Supplement 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-SP 12 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-SP 12/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 MCU recommended 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 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.

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 (9-18cl) solvent float over material to prevent moisture intrusion and cover pail.

Brush/Roller

Brush: Natural Fiber
Roller: Natural or synthetic fiber cover
Nap: 1/4" to 3/8"
Core: Phenolic
Reduction: Typically not required. If necessary, reduce with MCU-Thinner 25.

Airless Spray

Pump Ratio: 28-40:1
Pressure: 2400-2800 psi (170-200 Bar)
Hose: 1/4" to 3/8"
Tip Size: .015-.021
Filter Size: 60 mesh (250 µm)
Reduction: Typically not required. If necessary, reduce with MCU-Thinner, MCU-Thinner 25.

Conventional Spray

Fluid Nozzle: E Fluid Tip
Air Cap: 704 or 765
Atomizing Air: 45-75 lbs.
Fluid Pressure: 15-20 lbs.
Hose: 1/2" ID; 50' Max
Reduction: Typically not required. If necessary, reduce with MCU-Thinner, MCU-Thinner 25.

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surface preparation

Reducer

MCU-Thinner, MCU-Thinner 25. Reduction is typically not required. If necessary, thin up to 10% with recommended thinner. Thin in accordance with local and federal regulatory standards.

Clean up

MCU-Thinner, MCU-Thinner 25. 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 MCU-Coatings coating.

Application Conditions

Temperature: 10°-122° F (-12°-50° C)

This temperature range should be achieved for ambient, surface and material temperature. Substrate must be visibly dry. MCU-Thinner 25 is recommended for spray application in temperatures above 90°F.

Relative Humidity: 6%-99%

Coating Accelerator: QuickCure Accelerator. See MCU-Coatings's QuickCure Accelerator Product Data for information.

Storage

Store off the ground in a dry, protected area in temperature between 40-100°F (4-38°C). MCU containers must be kept sealed when not in use. Use a solvent float to reseal partial containers.

typical systems

		(spot) primer	DFT	intermediate	DFT	topcoat	DFT	Total DFT
carbon steel	atmospheric	mcu-zinc/mcu-miozinc	75	mcu-miomastic*	75	mcu-(mio/alu) topcoat	75	225
3 coat systems	interior	mcu-zinc/mcu-miozinc	75	mcu-miomastic*	75	mcu-mastic	75	225
	overcoating	mcu-miozinc	75	mcu-zincmastic	75	mcu-(mio/alu) topcoat	75	225
	refined tar based	mcu-zinc/mcu-miozinc	75	mcu-ferroguard	125	mcu-ferroguard	125	325
	immersion/splash zone	mcu-zinc/mcu-miozinc	75	mcu-mastic	75	mcu-mastic	75	225

		sealer 20% thinned	DFT	primer	DFT	topcoat	DFT	Total DFT
concrete	atmospheric	mcu-masthetic	NA	mcu-masthetic	75	mcu-(mio/alu) topcoat	75	150
3 coat systems	interior	mcu-masthetic	NA	mcu-masthetic	75	mcu-mastic	125	150
	refined tar based	mcu-ferroguard	NA	mcu-ferroguard	125	mcu-ferroguard	125	250
	immersion	mcu-ferroguard	NA	mcu-ferroguard	125	mcu-ferroguard	125	250

		spot prime	DFT	intermediate	DFT	topcoat	DFT	Total DFT
galva, alu, non-ferro	atmospheric	mcu-zinc/mcu-miozinc	75	mcu-miomastic*	75	mcu-(mio/alu) topcoat	75	150
	interior	mcu-zinc/mcu-miozinc	75	mcu-miomastic*	75	mcu-mastic	75	150
	overcoating	mcu-miozinc	75	mcu-zincmastic	75	mcu-(mio/alu) topcoat	75	225
	refined tar based	mcu-zinc/mcu-miozinc	75	mcu-ferroguard	125	mcu-ferroguard	125	250
	immersion/splash zone	mcu-zinc/mcu-miozinc	75	mcu-mastic	75	mcu-mastic	75	150

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typical systems

		spot prime	DFT	intermediate	DFT	topcoat	DFT	Total DFT
metallised	atmospheric	mcu-aluprime diluted + QuickCure	35	mcu-miomastic*	75	mcu-(mio/alu) topcoat	75	185
	interior	mcu-aluprime diluted + QuickCure	35	mcu-miomastic*	75	mcu-mastic	75	185
	overcoating	mcu-miozinc	75	mcu-zincmastic	75	mcu-(mio/alu) topcoat/mastic	75	225
	refined tar based	mcu-aluprime diluted + QuickCure	35	mcu-ferroguard	125	mcu-ferroguard	125	285
	immersion/splash zone	mcu-aluprime diluted + QuickCure	35	mcu-mastic	75	mcu-mastic	75	185

*Replace by MCU-Masthetic if smooth finish is desired

Note:

- ◇ This system sheet is to be used as a general guide line only.
- ◇ Please consult your MCU representative for detailed specifications and recommendations
- ◇ MCU-Zinc can be replaced by MCU-Miozinc at all times. MCU-Zinc is best performing
- ◇ MCU-Mastic can be used in atmospheric exposure when colour and UV resistance are not of importance. UV will have minimal and temporarily influence to the corrosion resistance of the coating
- ◇ It is recommended to spot prime twice for splash zone or immersion service
- ◇ One coat less, reduced DFT or lower cost systems are available in less aggressive environments. Consult your MCU Technical representative.
- ◇ Always do adhesion test when overcoating, especially when applying MCU-(Alu)Topcoat or MCU-Mastic directly to old coatings

ordering information

package size: 5 and 15 liter pails

shelf life: **18 months from date of shipment** when stored unopened at 75°F (24° C)

shipping information

flash point: 80°F (26.6°C)
weight/gallon: 13.4 ± 1.0 lbs
(1.60 ± .12 kg/l)

DOT HAZARD CLASS 3
DOT PACKAGING GROUP III
DOT LABEL FLAMMABLE LIQUID
DOT SHIPPING NAME PAINT
DOT PLACARD FLAMMABLE LIQUID
UN/NA NUMBER 1263

safety precautions

This product is for industrial use only

WARNING: Vapour and spray mist is harmful. Consult the Material Safety Data Sheet. Use an approved respirator when applying this product. Consult the MSDS for recommendations. Protect skin and eyes from contact. This product contains organic solvents and polyisocyanates. Do not use if you have a chronic or allergic reaction to isocyanates or organic solvents.

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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.