



# FerroClad™ 100



## DUCTILE IRON PROTECTIVE COATING

Revision Date 6-22-09

### Product Description

A single-component, moisture-cured urethane primer for ductile iron pipe and fittings and steel substrates. MC-FerroClad™ 100 is a proprietary formulation utilizing micaceous iron oxide (MIO) pigments and zinc to achieve outstanding long term corrosion resistance. Its performance has been evaluated in the field and by independent laboratories. Advantages include ease of use, rapid cure, extended recoat window, durability, and outstanding corrosion resistance for immersed and non-immersed applications. May be used in OEM manufacturing, potable water and waste water immersion with proper topcoats. Proven formulation compatible with acrylic, coal tar, catalyzed epoxies, polyurethane, Polyaspartic, and moisture-cured urethane topcoats. MC-FerroClad™ 100 is also compatible with asphalt-based topcoats.

### Area of Use

#### Substrates

Over properly prepared:  
Ductile Iron  
Cast Iron  
Gray Iron  
Steel

#### Possible Uses

Exterior Pipe  
Gallery Piping  
Pipe Fittings  
  
Yard Piping  
Potable Tanks

Immersion service:  
Air Piping  
Marine/Coastal  
Exposures  
Bridge Crossing  
Hydrants

### Ready Reference Information

**Resin Type:** Proprietary  
**Sheen:** Flat  
**Colors:** Bluish-Grey, Red Oxide  
**Volume Solids:** 62% ± 2.0  
**VOC:** <0.8lb/gal (100 g/l)  
(Volatile Organic Content) HAPS Free

**Theoretical Coverage:** @1 mil DFT: 994 ft<sup>2</sup>/gal  
(@ 25 µm DFT: 24.3m<sup>2</sup>/l)

#### Recommended Film Thickness

**Wet:** 4.8-8.0 mils (127-203 microns)  
**Dry:** 3.0-5.0 mils (76-127 microns)

#### Recommended Coverage per coat:

199 ft<sup>2</sup>/gal at 5.0 mils DFT - 331 ft<sup>2</sup>/gal at 3.0 mils DFT  
(4.9 m<sup>2</sup>/l at 127 µm DFT – 8.1 m<sup>2</sup>/l at 76 µm DFT)

**Thinning:** MC-Thinner, MC-Thinner XMT  
**Clean-up:** MC-Thinner, MC-Thinner XMT

### Drying Times and Temperatures

*At 50% Humidity	50°F/10°C		75°F/24°C		95°F/35°C	
	Without PURQuik®	With PURQuik®	Without PURQuik®	With PURQuik®	Without PURQuik®	With PURQuik®
Tack Free	3 hours	30 minutes	90 minutes	20 minutes	45 minutes	10 minutes
Recoat	6 hours	1 hour	4 hours	30 minutes	3 hours	20 minutes
Minimum <sup>1</sup>						
Full Cure	10 Days	7 days	7 days	5 days	5 days	4 days

\*Humidity, temperature and coating thickness will affect recoat and curing times  
<sup>1</sup>No outer recoat window on clean surfaces  
Refer to Wasser's PURQuik® Accelerator Product Data for additional information

### Product Features

- Single Component Moisture Cure Urethane
- Extended Recoat Window
- Universal Primer: Compatible with most Generic Topcoats
- Self Priming-Can be top-coated with itself
- Immersion & Non-immersion Service
- Low VOC
- Can be applied in cold, damp condition
- No Dew Point Restrictions(Substrate must be visibly dry)
- Easy to apply by brush, roller or spray methods
- Can be applied in below freezing temperatures (no ice or frost)
- No outer recoat window on clean surfaces
- Compatible with PURQuik® Accelerator for faster recoat and cure times.

## Recommended Systems

### IMMERSION & NON-IMMERSION Moisture Cure Urethane System

#### Black Finish

1 <sup>st</sup> Coat: MC-FerroClad™ 100 P	3.0-5.0 mils DFT
2 <sup>nd</sup> Coat: MC-Tar 100	5.0-7.0 mils DFT
3 <sup>rd</sup> Coat: MC-Tar 100	5.0-7.0 mils DFT
Total System DFT:	13.0-19.0 Mils DFT

#### Interior / Exterior Non-Immersion:

#### Dark Color Finish

1 <sup>st</sup> Coat: MC-FerroClad™ 100	3.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Ferrox B 100	3.0-5.0 mils DFT
3 <sup>rd</sup> Coat: MC-Ferrox A 100	
or MC-Luster 100	2.0-4.0 mils DFT
Total System DFT:	8.0-14.0 Mils DFT

#### Light Color Finish

1 <sup>st</sup> Coat: MC-FerroClad™ 100	3.0-5.0 mils DFT
2 <sup>nd</sup> Coat: MC-CR 100	3.0-4.0 mils DFT
3 <sup>rd</sup> Coat: MC-Luster 100	2.0-4.0 mils DFT
Total System DFT:	8.0-13.0 Mils DFT

#### 2 Coat System

1 <sup>st</sup> Coat: MC-Ferroclad™ 100	3.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Polyflex Rapid Thane 102	6.0-10.0 mils DFT
Total System DFT:	9.0-15.0 mils DFT

**\*Additional Systems (with different gloss levels, film thickness, etc) are available. Contact your Wasser Representative.**

## Hybrid Systems

In many water treatment and waste water treatment applications (immersed and non-immersed) intermediate and finish coats from different coating manufacturers have been successfully used over MC-FerroClad™ 100 . Contact Wasser for specifics.

## Performance Testing Data

**Abrasion Resistance:** 80 mg loss  
(ASTM D4060 – CS-17 Wheel, 1,000 cycles/kg load)

**Salt Fog Resistance:** 0.03% Rust  
(ASTM B117 3000 hours)

**Condensing Humidity:** 0.0%  
(ASTM D455 3000 hours)

**Immersion:** 0.1%  
(ASTM D870 3000 hours)

**Dry Heat Resistance:**  
Continuous: 250F (120C)

**Wet Heat Resistance:**  
Immersion: 150°F (66°C)  
Intermittent: 170°F (77°C)  
\*Contact Wasser Corporation for detailed testing of this product

### Compatible Coatings

#### Intermediates:

MC-Tar 100  
MC-Ferrox B 100  
MC-Miomastic 100  
MC-CR 100

#### Topcoats:

MC-Ferrox A 100  
MC-Luster 100  
MC-Shieldcoat 100

Polyflex 102 Rapid Thane Polyaspartic

#### Coating Accelerator:

PURQuik® Coating Accelerator

#### Generic Interior/Exterior Non-Immersion Coatings:

Acrylic/Waterbased  
Polyamide Epoxies  
Modified Epoxies  
Catalyzed Polyurethanes

For more information about generic topcoats, reference Wasser's Generic Coatings Compatibility chart or contact Wasser's Technical Service Team.

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## Surface Preparation

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### PROCEDURES

All surfaces are to be inspected for oil, grease, etc. Any oil, grease, or contaminant that can be removed by solvent shall be solvent cleaned following the guidelines of SSPC-SP 1 Solvent Cleaning or National Association of Pipe Fabricators (NAPF) Solvent Cleaning Standard 500-03-01. (If an asphalt-based coating has been previously applied contact Wasser.)

#### DUCTILE IRON, CAST IRON, GREY IRON

**For Atmospheric (Non-immersed) Applications:** After proper solvent cleaning all surfaces shall be prepared using hand tools and/or power tools to remove loose annealing oxide, loose rust, loose mold coatings and other foreign matter. Annealing oxide, mold coatings, and rust are considered adherent if they cannot be removed by lifting with a dull putty knife. If power tools are used for surface preparation do not burnish the surface or use in such a manner as to cause burrs or sharp edges. Ensure surface is clean and visibly dry prior to primer application.

**For Immersed Applications:** After proper solvent cleaning all surfaces shall be cleaned using sand or grit abrasive media. DO NOT OVERBLAST. Overblasting can result in a surface that is unsuitable for coating. (High nozzle velocities and/or excessive blast times can cause "blistering" and "slivering".) Abrasive blast cleaning shall remove all rust, loose annealing oxides, etc. After all surfaces are struck by the blast media, tightly adherent annealing oxide, mold coating and rust staining may remain on the surface provided they cannot be removed by lifting with a dull putty knife. Ensure surface is clean and visibly dry prior to primer application.

### Application Information

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MC-FerroClad™ 100 can be applied by brush, roll, airless spray and conventional spray. Follow proper mixing instructions before applying.

#### Mixing:

Material temperature must be 5°F 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 solvent float over material to prevent moisture intrusion and cover pail.

#### Brush/Roller:

Brush: Natural Fiber

Roller: Natural or synthetic fiber cover

Nap: ¼" to ⅜"

Core: Phenolic

Reduction: Typically not required. If necessary, reduce with MC-Thinner or MC-Thinner XMT

#### Airless Spray:

Pump Ratio: 28-40:1

Pressure: 2400-2800 psi

Hose: ¼" to ⅜"

Tip Size: .013-.019

Filter Size: 60 mesh (250 µm)

Reduction: Typically not required. If necessary, reduce with MC-Thinner or MC-Thinner XMT

### STEEL

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 to SSPC-SP10/NACE No. 2 Near White Metal finish. Prepare surfaces for non-immersion or atmospheric service projects to SSPC-SP6/NACE No. 3 Commercial Blast Clean finish. For minimum surface preparation use conscientious power tool cleaning methods in accordance with SSPC-SP3 to remove corrosion and loose or failing paint (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).

#### TOPCOATING MC-FERROCLAD 100-PW PRIMER

**For Interior / Exterior, Non-Immersed Applications:** 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 SSPC-SP2 or SP-3, Hand and Power Tool Clean (feather edges of sound, existing paint back to a firm edge). Spot prime clean, bare metal with MC-FerroClad™ 100 PW. If a Wasser topcoat is not used, apply a test sample to determine coating compatibility. (See also "Hybrid Systems" section)

**For Immersed Applications:** If topcoats other than recommended Wasser topcoats are used, scarification is typically recommended. Refer to the coating manufacturer's technical data

#### Conventional Spray: (DeVilbiss)

Fluid Nozzle: AV15E

Air Cap: BMC43DE

Atomizing Air: 45-75 lbs.

Fluid Pressure: 15-20 lbs.

Reduction: Typically not required. If necessary, reduce with MC-Thinner or MC-Thinner XMT

**Reducer:** MC-Thinner, if VOC regulations restrict thinning, use MC-Thinner XMT. 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:** MC-Thinner, MC-Thinner XMT. If Wasser 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 Wasser coating.

## Application Conditions

**Temperature:** 32° - 110°F (0° - 38°C) ambient and material  
32° - 115°F (0° - 46°C) surface

This temperature range should be achieved for ambient, surface and material temperature. Substrate must be visibly dry.

**Relative Humidity:** 6% - 99%

**Coating Accelerator:** PURQuik® Accelerator. See Wasser's PURQuik® Accelerator Product Data for information.

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

VOC Compliant (National Standards – Industrial Maintenance Coating)

Independent Laboratory Performance Testing (on Ductile Iron Pipe)

## Ordering Information

**Product Numbers:** W031.0597

**Package Size:** 1 gallon and 3 gallon pails

**Shelf Life:** 12 months from date of shipment when stored unopened at 75°F (24°C)

## Safety Precautions

## Shipping Information

**Flash Point:** 40°F (4°C) or over

**Weight/gallon:** 19.49 ± 1.0 lbs  
(2.34 ± .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

### DANGER!

VAPOR AND SPRAY MIST HARMFUL. OVEREXPOSURE MAY CAUSE LUNG DAMAGE. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION, EFFECTS MAY BE PERMANENT, MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS HEADACHE OR NAUSEA. CAUSES EYE, SKIN, NOSE AND THROAT IRRITATION. FLAMMABLE LIQUID AND VAPOR.

**CONTAINS: Petroleum Distillates, Xylene, Ethylbenzene, Modified MDI, Modified Polymeric MDI, 4,4'-Diphenylmethane Diisocyanate**

**NOTICE:** Reports have associated repeated and prolonged occupational over-exposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. INDIVIDUALS WITH LUNG OR BREATHING PROBLEMS OR PRIOR REACTION TO ISOCYANATES MUST NOT BE EXPOSED TO VAPOR OR SPRAY MIST. **Use Only With Adequate Ventilation.** Do not breathe dust, vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. Do not get in eyes, on skin or on clothing. Wash thoroughly after handling. Keep away from heat, sparks and flame. Vapor may cause flash fire.

#### KEEP OUT OF REACH OF CHILDREN

**FIRST AID:** If affected by inhalation of vapor or spray mist, remove to fresh air. If breathing difficulty persists or occurs later, consult a physician and have label information available. In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get medical attention; for skin, wash thoroughly with soap and water. If swallowed, get medical attention immediately. If swallowed, do not induce vomiting. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.

Keep container closed when not in use. If spilled, contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations.

**WARNING:** This product contains a chemical known to the state of California to cause cancer and birth defects, or other reproductive harm. Obtain and Read the Material Safety Data Sheet Before Using.

**INTENDED FOR PROFESSIONAL USE ONLY.  
W031.0597**