Product Description

A single-component, moisture-cured urethane primer intended for ductile iron pipe and fittings. MC-FerroClad™ Primer is a proprietary formulation utilizing micaceous iron oxide (MIO) pigments and zinc. Its performance on ductile iron substrates 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.

Proven formulation compatible with acrylic, coal tar, catalyzed epoxies, polyurethane and moisture-cured urethane topcoats. MC-FerroClad™ Primer is also compatible with asphalt-based topcoats.

Area of Use

<table>
<thead>
<tr>
<th>Substrates Over properly prepared</th>
<th>Exterior Pipe</th>
<th>Possible Uses</th>
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<tbody>
<tr>
<td>Ductile Iron</td>
<td>Exterior Pipe</td>
<td>Bridge Crossing</td>
</tr>
<tr>
<td>Cast Iron</td>
<td>Immersion Service</td>
<td>Gallery Piping</td>
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<tr>
<td>Gray Iron</td>
<td>Air Piping</td>
<td>Pipe Fittings</td>
</tr>
<tr>
<td></td>
<td>Marine/Coastal Exposures</td>
<td>Yard Piping</td>
</tr>
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</table>

Ready Reference Information

- Resin Type: Proprietary
- Sheen: Flat
- Colors: Bluish-Grey and Red-Oxide
- Volume Solids: 62.0% ± 2.0
- VOC: 2.8 lb/gal (340 g/l)
  (Volatile Organic Content)

Theoretical Coverage: @1 mil DFT: 994 ft²/gal (@ 25 µm DFT: 24.4 m²/l)

Recommended Film Thickness
- Wet: 5.0-8.0 mils (127-203 microns)
- Dry: 3.0-5.0 mils (76-127 microns)

Recommended Coverage per coat:
- 199 ft²/gal at 5.0 mils DFT - 331 ft²/gal at 3.0 mils DFT
  (4.87 m²/l at 230 µm DFT - 8.28 m²/l at 76 µm DFT)

Thinning:
- MC-Thinner, MC-Thinner 100, MC-Thinner XMT

Clean-up:
- MC-Thinner, MC-Thinner 100, MC-Thinner XMT

Drying Times and Temperatures

| Resin Type: Proprietary | Sheen: Flat | Colors: Bluish-Grey and Red-Oxide | Volume Solids: 62.0% ± 2.0 | VOC: 2.8 lb/gal (340 g/l) |

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<table>
<thead>
<tr>
<th>50° F (10° C)</th>
<th>75° F (24° C)</th>
<th>95° F (35° C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>without PURQuik®</td>
<td>with PURQuik®</td>
<td>without PURQuik®</td>
</tr>
<tr>
<td>Tack Free*</td>
<td>1 hr</td>
<td>30 min</td>
</tr>
<tr>
<td>Recoat Minimum*</td>
<td>6 hrs</td>
<td>1 hr</td>
</tr>
<tr>
<td>Wasser MCU/Other Topcoats</td>
<td>7 days</td>
<td>5 days</td>
</tr>
<tr>
<td>Full Cure*</td>
<td>10 days</td>
<td>7 days</td>
</tr>
</tbody>
</table>

* At 50% Relative Humidity. Humidity, temperatures and coating thickness will affect recoat and curing time.

Recoat Maximum times with Wasser MCU and other topcoat technology: On clean, properly prepared surfaces, MC-FerroClad™ Primer is indefinitely recoatable. See Surface Preparation for Immersed Applications for additional details. Contact Wasser Technical Service for specific coating technology and service application considerations.

Refer to Wasser’s PURQuik® Accelerator Product Data for additional information.

Product Features

- Single Component
- Proven Formulation (15+ years)
- Extended Recoat Window
- Universal Primer: Compatible with most Generic Topcoats
- Can be topcoated with itself
- Immersion & Non-immersion Service
- Chemical Resistant
- Impact Resistant
- Abrasion Resistant
- Low VOC
- Can be applied in cold, damp conditions
- No Dew Point Restrictions (Substrate must be visibly dry)
- Surface Tolerant
- Spray, Brush and Roller Application
- Compatible with PURQuik Accelerator

Wasser High-Tech Coatings, Inc. • www.wassercoatings.com • 800-627-2968
**Recommended MCU Systems**

**IMMERSION & NON-IMMERSION**

**Moisture Cure Urethane System**

- **Black Finish**
  - 1st Coat: MC-FerroClad™ Primer 3.0-5.0 mils DFT
  - 2nd Coat: MC-Tar 5.0-7.0 mils DFT
  - 3rd Coat: MC-Tar 5.0-7.0 mils DFT
  - Total System DFT: 13.0-19.0 mils

- **Interior / Exterior Non-Immersion:**
  - **Dark Color Finish**
    - 1st Coat: MC-FerroClad™ Primer 3.0-5.0 mils DFT
    - 2nd Coat: Ferrox B 3.0-5.0 mils DFT
    - 3rd Coat: MC-Ferrox A or MC-Luster 2.0-4.0 mils DFT
    - Total System DFT: 8.0-14.0 mils

  - **Light Color Finish**
    - 1st Coat: MC-FerroClad™ Primer 3.0-5.0 mils DFT
    - 2nd Coat: MC-CR 3.0-4.0 mils DFT
    - 3rd Coat: MC-Luster 2.0-4.0 mils DFT
    - Total System DFT: 8.0-13.0 mils

*N*ote: Developed as an OEM shop primer for ductile iron casters, MC- FerroClad™ Primer is compatible with most high performance epoxies, coal tars, urethanes, etc. from other coating manufacturers. Contact your Wasser representative for specific applications.

**Hybrid Coating Systems**

MC- FerroClad™ Primer offers the best available technology today as a universal primer for ductile iron substrates:

It can be topcoated with a very wide range of high performance coatings including but not limited to epoxies, urethanes, bitumens, polyureas, and moisture cure urethanes.

It is a suitable primer for both immersed and non-immersed coating systems.

Over the past 4 years MC- FerroClad™ Primer has been used in many water treatment and wastewater treatment applications where field applied topcoats from different coating manufacturers have been successfully used. Topcoats from national coating manufacturers such as Devoe, Carboline, Tnemec and Sherwin Williams have been successfully applied to MC- FerroClad™ Primer.

Contact Wasser Technical Service or your Wasser representative for specific application.

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**Performance Testing Data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>80 mg loss</td>
</tr>
<tr>
<td>Hardness (ASTM D2240)</td>
<td>75-80 Shore “D”</td>
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<tr>
<td>Salt Fog Resistance (ASTM B117, 3000 hrs)</td>
<td>0.03% Rust</td>
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<tr>
<td>Condensing Humidity (ASTM D455, 3000 hrs)</td>
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<td>Immersion (ASTM D870, 3000 hrs)</td>
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<tr>
<td>Continuous:</td>
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<td>Intermittent:</td>
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<tr>
<td>Wet Heat Resistance:</td>
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<td>Immersion:</td>
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<tr>
<td>Intermittent:</td>
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**Compatible Coatings**

**Moisture Cure Urethane (MCU) Coatings:**

- **Intermediates:**
  - MC-Tar
  - MC-Tar 200
  - MIO filled refined tar
  - MC-Ferrox B
  - MC-Ferrox B 200
  - MIO-filled intermediate
  - MC-Miomastic
  - MC-Miomastic 200
  - MIO-mastic intermediate
  - MC-CR
  - MC-CR 200
  - Light colored intermediate

**Topcoats:**

- MC-Ferrox A Flat-finish, aliphatic, MIO-filled topcoat
- MC-Luster Gloss-finish, aliphatic topcoat
- MC-Shieldcoat Gloss-finish, aliphatic topcoat
- MC-Aroshield Gloss-finish, aromatic, interior topcoat

**Generic Interior / Exterior Non-Immersed Coatings:**

- Alkyd Polyamide Epoxies
- Modified Epoxies
- Catalyzed Polyurethanes

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

Revision Date 11/17/06
Surface Preparation

**DUCTILE IRON, CAST IRON, GREY IRON**

Several publications and standards exist for the surface preparation of carbon steel substrates. Examples include The Society for Protective Coatings (SSPC), National Association of Corrosion Engineers (NACE), and Swedish Surface Preparation Standards. Inherent metallurgical, manufacturing and processing differences preclude certain parts of these surface preparation standards from being applied to ductile iron substrates.

Do not apply carbon steel surface preparation specifications to ductile iron. Doing so may result in damage to the ductile iron surfaces and reduce coating effectiveness and longevity.

**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 contact Wasser.)

**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.

**TOPCOATING MC-FERROCLAD 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 Primer. If a Wasser topcoat is not used, apply a test sample to determine coating compatibility. (See also "Hybrid Systems" section)

For Immersed Applications: If MC-FerroClad™ Primer is exterior exposed for 1 year or more, it must be recoated with itself or scarified before top coating.

If topcoats other than recommended Wasser topcoats are used, scarification is typically recommended. Refer to the coating manufacturer’s technical data.

Application Information

MC-FerroClad™ Primer 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 ¾”
- **Core:** Phenolic
- **Reduction:** Typically not required. If necessary, reduce with MC-Thickness 100

**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-Thickness 100

**Conventional Spray:** (DeVilbis)

- **Fluid Nozzle:** AV15E
- **Air Cap:** BMC43DE
- **Atomizing Air:** 45-75 lbs.
- **Fluid Pressure:** 15-20 psi
- **Reduction:** Typically not required. If necessary, reduce with MC-Thinner or MC-Thickness 100

**Reducer:** MC-Thinner, MC-Thickness 100, (if VOC regulations restrict thinning, use MC-Thinner XMT). Reduction is typically not required. If necessary, thin up to 10% with recommended thinner. MC-Thickness 100 is recommended for application in temperature above 90°F (32°C). Thin in accordance with local and federal regulatory standards.

**Clean up:** MC-Thinner, MC-Thickness 100. If Wasser thickeners 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°F-110°F (0°C-38°C) ambient and material
- **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 40-100°F (4-38°C). Containers must be kept sealed when not in use. Use a solvent float to reseal partial containers.

Revision Date 11/17/06
VOC Compliant (National Standards – Industrial Maintenance Coating)
Independent Laboratory Performance Testing (on Ductile Iron Pipe)

Certifications and Qualifications

Ordering Information

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<th>Product Numbers:</th>
<th>W03.0597 – Bluish-Grey</th>
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<tr>
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<td>W03.1211 – Red-Oxide</td>
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<tr>
<td>Package Size:</td>
<td>1 gallon and 3 gallon pails</td>
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<tr>
<td>Shelf Life:</td>
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Shipping Information

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<th>Flash Point:</th>
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<td>Weight/gallon:</td>
<td>20.6 ± 1.0 lbs</td>
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<tr>
<td></td>
<td>(2.48 ± 0.12 kg/l)</td>
</tr>
<tr>
<td>DOT HAZARD CLASS</td>
<td>3</td>
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<tr>
<td>DOT PACKAGING GROUP</td>
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<td>FLAMMABLE LIQUID</td>
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Safety Precautions

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.
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. Obtain and read the Material Safety Data Sheet before using this product.

WARNING: This product contains a chemical known to the state of California to cause cancer and birth defects, or other reproductive harm.

INTENDED FOR PROFESSIONAL USE ONLY.
W03.0597
W03.1211

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