



MOISTURE CURE URETHANE *APPLICATION GUIDE & RECOMMENDATIONS*

FOR STEEL SURFACES

1.0 PRODUCT STORAGE AND HANDLING

- 1.1 All Wasser MC-Urethanes should be stored in a covered shelter. Care should be taken to ensure that unused containers remain sealed and leftover, partial containers are properly resealed.
- 1.2 Storage temperature can range from 40°F to 100°F and should be kept constant. The material temperature must be brought to 5°F above the dew point temperature before opening and agitating the material to prevent condensation from entering the coating.
- 1.3 Since Wasser MC-Urethanes react with atmospheric moisture, it is important to limit the time the container is open. Pour out only what is needed, then apply a solvent "float" of approximately 3 - 6 ounces of Wasser's thinner over the surface of the coating before resealing the container.
- 1.4 If it is not possible or practical to reseal the container during spray application, pour a Wasser solvent "float" over the coating to prevent moisture intrusion.
- 1.5 If a skin forms on the surface of the coating in a new, sealed container or a resealed partial container, remove it by cutting the edge of the skin at the skin/container interface, and discard. Agitate the remaining material until it's homogeneous, adding Wasser's thinner as necessary. Filter the coating through a fine filter and proceed with the application.

2.0 MIXING AND THINNING

- 2.1 Wasser MC-Urethanes are single-component coatings. There is no mixing "Part A with Part B"; however, the coating should be mixed using power agitation for 3 minutes or until it's completely homogeneous.
- 2.2 Do not use on paint shaker, and avoid repeated boxing.
- 2.3 Aged Wasser MC-Urethanes (six months or older) may develop significant settling.

Follow recommendations in Section 2.1, but increase agitation time.

- 2.4 Do not subject Wasser MC-Urethanes to agitation during application. Once thoroughly mixed, the pigments stay in suspension for up to 4 hours. Even MC-Zinc will remain suspended once thoroughly mixed. Continuous agitation can cause premature gelling.
- 2.5 Thinning: Use only MC-Thinner or MC-Thinner 100. Make no exceptions, substitutes, or assumptions about using other reducers. Most industrial solvents contain water, or alcohol. Even a very small amount of water, alcohol or other hydroxyl bearing solvent can contaminate and destroy the moisture-cure reaction without any apparent indication or gelling. Substitutions may also jeopardize application and performance properties and will void any product warranty. Consult Wasser Technical Service for thinning recommendations when Wasser's MCU thinner is not available.

3.0 SUBSTRATE TYPES

Wasser MC-Urethanes are surface tolerant protective coatings that can be applied to various types of metal surfaces in varying conditions.

- 3.1 Ferrous steel is a steel alloy containing iron. It makes up the bulk of the heavy industrial steel market, but is given to fast corrosion if not protected by a sealant, or coating system.
- 3.2 Galvanized metal has been coated with a thin film of zinc creating a sacrificial barrier between the metal and the environment. Since it is the nature of zinc to attract corrosion to itself, galvanized surfaces break down over time and eventually lose effectiveness.
- 3.3 Corten steel, or weathering steel, is designed to rust, forming a corrosion barrier that encapsulates the steel. However, the long-term performance of weathering steel is greatly affected by environment, location and design details.

- 3.4 Other Metals: Aluminum, brass, bronze, copper, stainless and many other corrosion resistant metals or alloys.

4.0 PROJECT TYPES

4.1 If the existing coating meets the following minimum requirements, it may qualify as a candidate for a Wasser overcoat system:

- The existing coating is in fair or good condition and exhibits adhesion strength of a minimum 250psi per ASTM D4541 Pull-off Adhesion Test
- The existing coating has been checked for system compatibility, and has been cleaned or prepared to the extent required by the overcoat system to allow for sufficient mechanical adhesion
- The existing coating has been checked for lead content (refer to your local state and federal regulations on lead pigment coatings)

4.2 For full removal projects where the existing coating system failed, Wasser's coatings are surface tolerant, and for many full removal projects can be applied on steel prepared to a minimum SSPC-SP6. Additional spot preparation may be required on heavily corroded and pitted areas. Cleaning should produce a bare steel surface profile of 1.0 - 2.0 mils.

4.3 New bridge projects benefit from the versatility of Wasser's coatings in shop application and field touch-up, with extended application parameters, indefinite recoatability on clean surfaces, and easy maintenance.

- Remove all mill scale on new steel structures with SSPC-SP10 or SSPC-SP6 according to its service environment.
- Surface cleaning shall produce a profile of 1.0 - 2.0 mils.

5.0 SURFACE PREPARATION

The following standards reflect various degrees of cleanliness and surface preparation. Refer to the most current edition of the SSPC Painting Manual Systems and Specifications Volume 2 for more details on surface preparation standards and consult your Wasser Technical Representative for project specific recommendations.

5.1 SSPC-SP1 Solvent Cleaning: Uses solvents, emulsions, cleaning compounds, steam or similar materials to remove detrimental foreign matter like oil, grease, soil, drawing and cutting compounds and other contaminants.

5.2 SSPC-SP2 Hand Tool Cleaning: Uses hand brushing, hand sanding, hand scraping, hand chipping or other hand impact tools alone or in combination to remove loose mill scale, loose rust, and loose paint.

5.3 SSPC-SP3 Power Tool Cleaning: Uses power impact tools, power wire brushes, power grinders, power sanders alone or in combination to remove loose mill scale, loose rust, and loose paint.

5.4 SSPC-SP5/NACE No. 1 White Metal Blast Cleaning: Uses abrasives propelled through nozzles or by centrifugal wheels to remove all mill scale, rust, paint, and other foreign matter. All contaminants, loose residues, surface imperfections and visible rust that forms following cleaning and prior to painting, shall be removed. Cleaned surface must be roughened to impart a profile suitable for the coating system.

5.5 SSPC-SP10/NACE No. 2 Near-White Blast Cleaning: Uses abrasives propelled through nozzles or by centrifugal wheels to remove all mill scale, rust, paint, and other foreign matter. Up to 5% staining may remain due to rust, mill scale, or previously applied paint on each 3-in. x 3-in. surface area. Cleaned surface must be roughened to impart a profile suitable for the coating system.

5.6 SSPC-SP6/NACE No. 3 Commercial Blast Cleaning: Uses abrasives propelled through nozzles or by centrifugal wheels to remove mill scale, rust, paint, and other foreign matter. Up to 33% staining may remain due to rust, mill scale, or previously applied paint on each 3-in. x 3-in. surface area. Slight residues of rust and paint may remain in bottoms of pits if original surface is pitted. Cleaned surface must be roughened to impart a profile suitable for the coating system.

5.7 SSPC-SP7/NACE No. 4 Brush-Off Blast Cleaning: Uses abrasives propelled through nozzles to remove loose mill scale, rust scale, paint, and other foreign matter. Tightly adherent mill scale, rust and paint may remain if they cannot be

removed by lifting with a dull putty knife. The cleaned surface must be roughened to impart a profile suitable for the coating system.

5.8 SSPC-SP11 Power Tool Cleaning to Bare Metal: Uses rotary impact tools, needle guns, non-woven abrasive wheels and discs or coated abrasive discs to remove all visible mill scale, rust, paint, and other foreign matter. Slight residues of rust and paint may remain in bottoms of pits if original surface is pitted. Cleaned surface must be roughened to impart a profile no less than 1 mil.

5.9 SSPC-SP12/NACE No. 5 uses high- and ultrahigh-pressure water jetting without the addition of aggregate to achieve various degrees of visible and non-visible surface cleanliness.

- High-Pressure Water Jetting (HP WJ): Uses water at pressures from 70 to 170 MPa (10,000 to 25,000 psi).
- Ultrahigh-Pressure Water Jetting (UHP WJ): Uses water at pressures above 170 Mpa (25,000 psi).
- High-Pressure Water Cleaning (HP WC): Uses water at pressures from 34 to 70 MPa (5,000 to 10,000 psi).
- Low-Pressure Water Cleaning (LP WC): Uses water at pressures less than 34 MPa (5,000 psi).

5.10 SSPC-SP14/NACE No. 8 Industrial Blast Cleaning: Uses abrasives propelled through nozzles or by centrifugal wheels to remove mill scale, rust, paint, and other foreign matter. Traces of tightly adherent rust, mill scale, or previously applied paint may remain on 10% of each 3-in. x 3-in. surface area. Cleaned surface must be roughened to impart a profile suitable for the coating system.

6.0 EQUIPMENT AND SET-UP PROCEDURES FOR AIRLESS AND CONVENTIONAL SPRAY

6.1 Inspect all air/liquid hoses for cracks, leaks, etc., and replace as necessary. New hoses should be used to eliminate potential clogging from previous materials.

6.2 Inspect the spray apparatus and its components. Insure spray guns are clean and properly functioning. Change or clean filters prior to use. Check for proper tips and tip sizes, and use a reversible spray tip. Refer to Recommended Pressure and Tip Sizes

chart in this section. Check valves and gauges for proper operation, and replace as necessary. Adjust to proper pressure.

6.3 Flush Wasser's thinner through the system to clean the hose and flush out condensate. Never allow old thinner in the paint lines to enter MC-Urethanes.

6.4 Stage 5-gallon pails away from paint pump to prevent relief valve moisture from contaminating the product. Line a clean, empty pail with a 55-mesh screen, and tape the screen to the outside of the pail. Cut a 3" slit parallel to the pail top, to allow insertion of a siphon unit, placing it between the screen and pail wall. This measure minimizes potential plugging of the spray tips.

6.5 Follow all mixing instructions, and apply a Wasser solvent "float", and place a cover over the pail.

6.6 All Wasser MC-Urethanes are supplied ready to mix and spray. Use standard production type spray equipment. Conventional Application- Air supply must have an effective moisture trap. Use air pressure at gun of 45-75 pounds. Use 15-20 pounds pot pressure. Do not agitate in pressure pot. Airless Application- Use Graco, Binks pumps or equivalent 28-40:1.

RECOMMENDED PRESSURE AND TIP SIZES

<u>PRODUCT</u>	<u>PRESSURE</u>	<u>TIP SIZE</u>
MC-Zinc	2400-2800	013-019
MC-Miozinc	2400-2800	013-019
MC-Prepbond	1800-2000	011-015
MC-Ferrox B	2100-2800	013-019
MC-Miomastic	2100-2800	013-019
MC-CR	2100-2800	013-019
MC-Luster	2400-2800	013-019
MC-Ferrox A	2100-2800	013-019
MC-Shieldcoat	2400-2800	007-015
MC-Clear	2400-2800	007-013
MC-Aroshield	2100-2800	007-013
MC-Aroclear	2100-2800	007-013
MC-Aluminum	1800-2000	011-013
MC-Tar	2400-2800	015-019
MC-Ballastcoat	2100-2800	013-019

7.0 ROLLER OR BRUSH SET-UP

Use a natural fiber brush or a natural or synthetic fiber roller cover with a ¼ - ⅜ inch nap, and a phenolic core. Pay special attention when brush-applying primer to avoid brush stroke valleys, which may produce holidays in the film.

MC-Thinner 100 is the solvent of choice for brush and roll applications when reduction is desired.

8.0 SYSTEM APPLICATION

- 8.1 **Prime Coat:** Apply the primer or primer/sealer at the recommended DFT. Thinning is not normally required; however, thin up to 10% as needed to achieve desired application characteristics. A brush applied stripe coat is recommended for all nuts, bolts, weld seams, corners, joints, and edges cleaned to bare metal.
- 8.2 **Intermediate and Topcoat:** Apply coatings at the recommended DFT. Thinning is not normally required; however, thin up to 10% as needed to achieve desired application characteristics. Follow all recommended recoat times.
- 8.3 **PURQuik® Accelerator** is a 100% solids, proprietary additive designed to accelerate any Wasser MC-Urethane when reduced cure and recoat times are desired. PURQuik® Accelerator comes premeasured in a 1 half-pint can (6.4 oz [.19l] fill) for addition to a 1 gallon pail or premeasured 1 quart can (19.2 oz [.57l] fill) for addition to a 3 gallon pail or premeasured in a 1 quart can (32 oz [.95l] fill) for addition to a 5 gallon pail of Wasser's MC-Urethane. Review the PURQuik® Product Guide for more details.

NOTE: Follow minimum recoat times as stated per coat at the recommended dry film thickness on Wasser's Product Guides. Additional recoat time is required when films are applied in excess of the recommended range. As a guideline, at 70°F and RH of 60-90%, add 40 minutes per additional wet mil (or 1 hour per dry mil). Excessive films may also cause poor adhesion, blistering, pinholing, and solvent entrapment and may require remedy. Consult your Wasser Technical Representative for more information.

9.0 CLEAN-UP

- 9.1 Use MC-Thinner or MC-Thinner 100. If Wasser's thinners are not available, use MEK, MIBK, Xylene, a 50:50 blend of Xylene and MEK or MIBK, or acetone for clean up only. Be careful not to add

unauthorized solvents to a Wasser coating.

- 9.2 Always flush equipment, hoses and tips clean after use. Remaining coating residue will cure and become insoluble. Thoroughly clean brushes and rollers after use. Submerging used brushes and rollers in solvent overnight will not prevent the coating from curing. Avoid contact with skin or clothing. Any coating not removed within 15 minutes will begin to cure and become difficult to remove.

10.0 GOOD PRACTICES

- 10.1 Always prevent rain, mist, or any other form of moisture from falling directly into open can.
- 10.2 It is not necessary or required to keep Wasser MC-Urethanes under constant agitation while spraying. Prolonged agitation can introduce moisture into the coating.
- 10.3 Avoid opening and agitating MC-Urethanes if the paint temperature is below the dew point temperature. To avoid potential, premature gelling, warm the paint to match the ambient temperature if possible.
- 10.4 Always pour a Wasser solvent "float" over the exposed material in the can when spraying or over any remaining material when resealing partial cans for storage.
- 10.5 Use only Wasser MC-Thinner or MC-Thinner 100.

WASSER MCU ADVANTAGES

Single component: No catalyst mixing errors, or pot life concerns.

Application: Can be applied in humidity up to 99%, in low temperatures - to below freezing (avoid frozen surfaces), and subjected to rain, fog, or condensate within 30 minutes; however, variations in sheen and/or finish look may appear.

Durability: Superior performance and corrosion resistance with extended service life for protective coating and maintenance projects.

Recoat: Most Wasser MCUs have no outer recoat window on a clean surface.

Time: Use PURQuik® as recommended to increase output and reduce recoat times.