



**MOISTURE CURE URETHANE
APPLICATION GUIDE
& RECOMMENDATIONS**

FOR CONCRETE 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. Mix and 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 (6 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 will stay in suspension for up to 4 hours. 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 thinner is not available.

3.0 CONCRETE CURE TIMES

- 3.1 ASTM C150 concrete types will vary in rate of cure. Wasser recommends a minimum cure of 7 days for non-immersion service and 14 days for immersion service. Test the concrete for moisture content using mechanical or digital methods. Proceed with surface preparation and coating application when the moisture content of the concrete is not in excess of 14%.
- 3.2 ASTM D4263-83: The plastic sheet method is used to indicate the presence of capillary moisture in concrete. Tape 18” by 18” (457 by 457 mm), 4-mil thick, clear plastic sheet tightly to the surface, making sure that all edges are sealed. Keep the taped sheet in place for a minimum 16 hours, then remove it and visually inspect the underside of the sheet and the concrete for the presence of moisture.
- 3.3 If ASTM D 4263-83 test shows darker (damp, but not visually wet) concrete the coatings application can commence.

3.4 Refer to SSPC-TU2, SSPC Guide 11 and ACI 308 for additional information.

4.0 PRE-SURFACE PREPARATION

4.1 Any curing agents or hardeners, oil, grease, dirt and other contaminants must be removed prior to surface preparation and coating application. Various methods of pre-surface preparation are available as referenced in SSPC-SP13/NACE No. 6 and the following ASTM Standards. Consult Wasser for further recommendations whenever the following ASTM designations do not meet your project requirements.

4.1.1 ASTM D 4258-83 (Reapproved 1999) Standard Practice for Surface Cleaning Concrete for Coating: This practice is primarily recommended for light-duty service. Where protective coating systems are used for continuous or intermittent immersion, mechanical loading and for systems needing optimum bond, this standard should be used as pre-surface preparation in conjunction with ASTM D4259 and ASTM D4260.

4.1.2 ASTM D4259-88 (Reapproved 1999) Standard Practice for Abrading Concrete: This practice is intended to alter the surface profile of the concrete, remove foreign materials and weak surface laitance. This standard will effectively remove curing compounds, form release materials, and concrete hardeners. Use this standard in conjunction with ASTM D4258.

4.1.3 ASTM D4260-88 (Reapproved 1999) Standard Practice for Acid Etching Concrete: This practice is primarily used on horizontal surfaces, and is intended to alter the surface profile of the concrete. It aids in removing foreign materials and weak surface laitance but is not effective in removing curing compounds, form release agents and hardeners. Use this standard in conjunction with ASTM D4258.

4.2 If a concrete floor is below grade, a moisture barrier should be present under the slab. This eliminates the possibility of hydrostatic pressure build-up under the coating, which can cause blisters and delamination.

5.0 SURFACE PREPARATION

5.1 Follow Pre-Surface Preparation recommendations in Section 4.0, and refer

to SSPC-SP13/NACE No. 6 Surface Preparation of Concrete for complete surface preparation procedures prior to protective coating application. Consult Wasser for further recommendations whenever the following SSPC-SP13 NACE No. 6 methods do not meet your project requirements.

5.2 Surface preparation methods should achieve adequate surface profile and porosity to ensure optimum mechanical coating adhesion to the substrate. In most cases, the desired profile is similar to that of medium grade sandpaper.

5.3 Abrasive Blasting Methods, either wet or dry, can be used to remove contaminants, loose paint, laitance, and weak concrete, to expose surface voids and to produce a sound concrete surface with adequate profile and porosity. Vacuum or air blast cleaned surface to remove all sand and dust.

5.4 High-Pressure Water Cleaning Methods described in SSPC-SP12/NACE No. 5 using manually operated high-pressure water jetting equipment may be used to remove contaminants, loose paint, laitance, and weak concrete, to expose surface voids and to produce a sound concrete surface with adequate profile and porosity.

5.5 Impact Tool Methods include scarifying, planing, scabbling, and rotary peening to remove existing coatings, laitance, and weak concrete. Impact-tool methods may fracture concrete surfaces or cause micro-cracking that may need supplemental cleaning with Abrasive Blasting or High Pressure Water Cleaning to produce a sound concrete surface with adequate profile and surface porosity. The soundness of an impact-tool prepared surface should be verified by testing the surface tensile strength after cleaning.

5.6 Power-tool Methods include circular grinding, sanding, and wire brushing to remove existing coatings, laitance, protrusions, loose paint and weak concrete. These methods may require Abrasive Blasting or High-Pressure Water Cleaning to produce a sound concrete surface with adequate profile and surface porosity.

5.7 Chemical Surface Preparation or Acid Etching as described in ASTM D4260 may be used on horizontal surfaces to remove

some surface contaminants, laitance, and weak concrete, and may provide sufficient surface profile on concrete. This method requires the complete removal of all reaction products and pH testing to ensure neutralization of the acid. Acid etching is not recommended on vertical surfaces or on areas where curing compounds and sealers have been used. Acid etching with hydrochloric acid is not for use where corrosion of metal in the concrete is likely to occur.

5.8 Inspect the surface for soundness, moisture content, and cleanliness. Ensure all contaminants, form release agents, and hardeners are removed. Repair or remove any surface irregularities and loose concrete. Use an approved crack filler on holes and cracks. When the surface is clean, sound, and dry proceed with coating application.

5.9 If a previous coating system exists, test its adhesion to verify that it withstands 200 psi using ASTM D4541 Pull-off Adhesion Test. Remove the old system if it fails, and feather abrupt edges on any sound coating that remains. Clean the surface as recommended and scuff-sand any existing gloss. Perform a spot test application of the new system over the prepared existing coating. System incompatibility may be evident within 30 minutes. If after 30 minutes no sign of incompatibility presents itself, wait five days and perform either ASTM D4541, or ASTM D3359 to check adhesion of the new system over the existing 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 the 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 the coating.

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, 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-CR	2100-2800	013-019
MC-Shieldcoat	2400-2800	007-015
MC-Clear	2400-2800	007-013
MC-Luster	2400-2800	013-019
MC-Aroshield	2100-2800	007-013
MC-Aroclear	2100-2800	007-013
MC-Tar	2400-2800	015-019

7.0 ROLLER OR BRUSH SET-UP

Use a natural fiber brush or a natural or synthetic fiber roller cover with a 1/4 - 3/8 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 **Primer/Sealer:** Apply one coat at the recommended DFT, thinned up to 30% as needed for penetration and adhesion, which will maximize coverage of the succeeding coats. **Do not use PURQuik® in this coat.**
- 8.2 **Intermediate and Topcoat:** Apply one or two coats of the specified coating at the recommended DFT, thinned up to 10% as needed to achieve desirable application characteristics.
- 8.3 **Optional Clear Finish Coat:** Use MC-Clear or MC-Aroclear in one or two coats at the recommended DFT, thinned up to 10% as needed to achieve desirable application characteristics.
- 8.4 Allow approximately 4-8 hours, @ 70°F, minimum cure between coats (refer to Wasser's PURQuik® Product Guide for temperature/cure-time chart), 2-4 days minimum cure @ 70°F for light traffic; 7-10 days for heavy vehicular traffic; 72 hours minimum for chemical exposures. Recoat and cure times are based on recommended dry film thickness.
- 8.5 For non-skid surfaces, lightly broadcast 40-80 grit abrasive (aluminum oxide or crushed quartz) into wet intermediate prior to final colored coat application.
- 8.6 **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. Any remaining paint 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.
- 10.6 Do not add PURQuik® to the primer/sealer applications on bare concrete.

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.