Rust-Oleum® Industrial Brands Specification

Coating Specification for Rust-Oleum Virtual Solutions Coating Solution 4

A solvent based coating system

High Performance 9100 System DTM Epoxy Mastic
For Steel Substrates in a Water Immersion Environment

Specification Prepared by: Rust-Oleum Technical Service, March 2011

This is a general coating specification. Changes to this specification may void any product warranties. Contact your Rust-Oleum representative or Rust-Oleum Technical Service if modifications are required to better meet your needs.

RUST-OLEUM®
INDUSTRIAL BRANDS

PART I GENERAL

1.01 SCOPE OF WORK

A. Provide all materials and labor necessary to install Rust-Oleum® 9100 System DTM Epoxy Mastic for water immersion service, in strict accordance with project drawings, specifications and current Rust-Oleum application instructions.

1.02 RELATED WORK BY OTHER (SELECT AS NEEDED)

A. Division 3 Concrete
B. Division 4 Masonry
C. Division 5 Metals
D. Division 6 Wood
E. Division 7 Thermal & Moisture Protection
F. Division 10 Specialties
G. Division 11 Special Construction

1.03 SYSTEM DESCRIPTION

A. The 9100 System DTM Epoxy Mastic is a two component, epoxy coating manufactured by Rust-Oleum Corporation, located at 11 Hawthorn Parkway, Vernon Hills, IL 60061 (847) 367-7700. The 9100 System DTM Epoxy Mastic when used with the 9102 Immersion Activator is suitable for continuous water immersion in either fresh or salt water. It can be used for coating the interior of water storage tanks, but is not certified for use with potable water. The 9100/9102 Immersion System refers to a coating system composed of:

1. 9100 Base Component. Standard, ready mixed colors only. The 9115 Aluminum and tint bases are not to be used for immersion service.
2. 9102 Immersion Activator Component
3. 165 Thinner: specially formulated for immersion service.

1.04 ENGINEERING AND DESIGN REQUIREMENTS

A. The Design Architect and Project Engineer shall be responsible for all decisions pertaining to design, detail, structural capability and the like. Rust-Oleum Corporation has prepared guidelines in the form of specifications, technical data and application information to assist in the design and engineering processes.

B. Equivalent materials of other manufacturers may be substituted on approval of the engineer or designer. These requests for substitution shall include manufacturerôs literature for each product giving the name, generic type, descriptive information, solids by volume, recommended dry film thickness and a list of a minimum of ten (10) projects where the coating system has been applied and performed to expectations for at least three (3) years service. No requests for substitution shall be considered that lower system film thickness, number of coats and/or offer a change in the generic type of coating herein specified. Requests for review of equivalency will be accepted only from the Contractor and will be considered only after the contract has been awarded. Request for review submitted directly to the Engineer by coating suppliers will not be considered.

C. Custom colors are available for a nominal charge per color set-up from Rust-Oleum Corporation.

D. The 9100 System shall be used only in conformance to the air quality legislation applicable at the location of use.

E. The 9100 System, as well as all other epoxies in it's class, will gradually yellow with age. This is a cosmetic change and the performance is not altered.

F. The 9100 System, as well as all other epoxies in it's class, will chalk and/or lose gloss on exposure to Sunlight. This is a cosmetic change and the performance is not altered.

G. The 9100 System is a direct to metal, self-priming product.

1.05 SURFACE PREPARATION AND APPLICATION DESCRIPTION

A. Substrate cleaning, surface preparation, coating application and dry film thickness shall be as specified herein and shall meet or exceed Rust-Oleum Corporation's recommendations.

B. All application equipment shall be clean and maintained in proper working order in accordance with the equipment manufacturer's recommendations.

C. The 9100 System shall be applied in accordance with the air and surface temperature limits and work areas shall be reasonably free of airborne dust during application and drying time.

1.06 PERFORMANCE REQUIREMENTS

A. The 9100 System using the 9102 Immersion Activator has the following physical properties and these are published on the Rust-Oleum Corporation 9100 System Technical Data Sheet.

	Activated material
Solids by Volume	65-68%
Recommended Dry Film Thickness per Coat (DFT)	5-8 mils
Wet Film To Achieve DFT (Unthinned Material)	7½ -12 mils
Practical Coverage @ Recommended DFT (Assumes 15% material loss)	100-175 sq ft/gal
Induction Period	30 minutes
Pot Life @70-80°F (21-27°C)	2-4 hours, less at higher temperatures and with greater than 10 gallons of activated material.
Dry Times @70-80°F (21-27°C) 50% RH Recoat Immersion	 16-72 hours. Do not exceed 72 hours 7 days. 5 days @ temperatures above 80°F

1.07 QUALITY ASSURANCE

A. Applicator Qualifications:

1. Shall be knowledgeable in the proper installation of the 9100 System and experienced in the application of two component, epoxy systems.

2. Shall provide a minimum of one (1) year workmanship warranty for the application of the 9100 System.

3. A list of Certified Rust-Oleum Corporation Coating Applicators is available from Rust-Oleum Corporation.

B. Pre-, Mid-, and Post-Job Conferences shall be scheduled at discretion of the Project Engineer and/or Design Architect.

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1.08 SUBMITTALS

A. Product Data: 9100 System, application and related equipment information.

B. Color Cards: Supply color cards of specified materials showing range of colors.

C. Applicator: If applicable, provide certified contractor documentation showing proof of familiarity with the 9100 System.

1.09 DELIVERY STORAGE AND HANDLING

A. Deliver the 9100 System on-site in Rust-Oleum Corporation's labeled, original, unopened containers.

B. Store materials inside or under cover at ambient temperature. Keep materials dry, protected from weather, direct sunlight, surface contamination, aging corrosion, extreme temperatures and other damage.

1.10 PROJECT CONDITIONS

A. Protect adjacent work from damage and overspray during application of the 9100 System.

B. When coating the interior of tanks, similar vessels, or in confined spaces, ventilation shall be exhausted from the lowest portions of the vessel with top openings kept free and clear. During application the capacity of the ventilating fans shall be at least 300 cfm per gallon of coating applied per hour. Continuous forced ventilation is to be maintained for 48 hours after the completion of coating application at a rate of at least one complete air change every four hours. For the next 3 days ventilation is to be maintained by keeping all openings and manways open.

1.11 WARRANTY

A. The technical data and suggestions for use contained herein are correct to the best of our knowledge, and offered in good faith. The statements of this specification do not constitute a warranty, expressed, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.

B. Special project warranties may be issued on a request basis at the discretion of the Rust-Oleum Corporation Technical and Legal Departments and would not be contained within this specification document.

2. PRODUCTS

2.01 MANUFACTURER

A. The 9100 System shall be obtained through a Rust-Oleum distributor. To request nearest distribution source contact Rust-Oleum Corporation.

2.02 MATERIALS

A. The 9100 System is a two component epoxy system that consist of a selection of standard color finishes, and activators. Contact Rust-Oleum Corporation for availability of colors and container size.

3. EXECUTION

3.01 JOB CONFERENCES

A. A pre-job conference shall be at the discretion of the architect, engineer or general contractor. Coating contractor, substrate installer and other trades whose work effects the application of the 9100 System shall meet at the project site to review procedures and time schedule proposed for application of the 9100 System and related work. Additional conferences are at the discretion of the architect, engineer, general contractor and/or owner.

3.02 SURFACE PREPARATION

A. All cleaning and surface preparations specified herein are minimums.

B. All surfaces to be coated shall be free of cracks, pits, fins, projections, or other imperfections that would interfere with the formation of a uniform, unbroken coating film.

C. All sharp edges shall be ground to smooth radius of at least 1/8 inch.

D. All oil and grease shall be completely removed with biodegradable degreasers prior to mechanical cleaning begins.

E. All welds shall be ground as necessary to remove sharp edges, undercuts, pinholes, and other such irregularities.

F. All weld spatter must be removed by grinding, or other appropriate method, prior to abrasive blast cleaning.

G. All ferrous metal substrates shall be abrasive blast cleaned to an SSPC-SP-10 Near White Grade (NACE 2). The surface profile shall be uniform and have a profile depth of 1½ - 3 mils. The first application of coating shall be applied on the same day. If more surface area is prepared than can be coated in one day, the uncoated area shall be re-blasted to the satisfaction of the Project Engineer.

H. The coating contractor is to examine the substrate to determine if it is in satisfactory condition to receive the 9100 System. Obtain coating contractor's written report listing conditions detrimental to performance of work in this specification. Do not proceed with the application of the 9100 System until unsatisfactory conditions have been corrected.

3.03 MIXING AND THINNING

A. MIXING

1. The 9100 System colored base component shall be thoroughly mixed to uniform color.
2. The 9100 System 9102 Immersion Activator shall be thoroughly mixed to uniform appearance.

3. In a separate container, combine the base and activator components under mechanical agitation. Completely mix for 3-5 minutes. Allow a 30 minute induction time prior to application of the coating.

B. THINNING

1. Thinning shall be done in accordance with applicable local air quality regulations.

2. Thinning, when necessary, shall be done only with Rust-Oleum 165 Thinner.

3.04 APPLICATION

A. Weather Conditions

1. Apply when air and surface temperatures are between 60-100° F (15-38°C) and surface temperature is at least 5° F (3°C) above the dew point.

2. The relative humidity should not be greater than 85%.

B. Coating Application.

1. Application by airless spray is the recommended method. Application by brush or roller should be limited to spot coating or touch-up only.

2. Edges, corners, seams, welds, bolts, nuts and patch repair areas shall be given a brushed spot coat of the 9100 System.

3. Spot-coated areas shall have cured for 16 hours minimum prior to application of the first full coat of the 9100 System.

4. Apply two full coats of 9100 System, each at the recommend dry film thickness. The 9100 System shall be recoated no sooner than 16 hours and no later than 72 hours. It is suggested that the color of the first is different from that of the finish coat to aid application of the second coat.

5. In no instance shall the 9100 System be applied greater than 8 mils dry film thickness per coat.

6. Sags, checks, blisters, skips, teardrops, or rolled edges shall not be accepted and shall be completely removed and recoated.

C. Protection of surfaces

1. The Coating Contractor shall be responsible for protecting all adjacent surfaces from spills, drips, overspray, or any other form of coating damage.

2. The coating contractor and its subcontractors shall be responsible for removing spots or repairing damaged surfaces to the satisfaction of the project engineer, design architect and/or owner.

3. Exposed concrete or masonry surfaces not specified to be coated shall be repaired or rebuilt by the coating contractor at the discretion of the project engineer, design architect and/or owner.

3.05 CLEAN-UP

A. Clean-up shall be done to remove all spills, drips, overspray, or other unwanted coating from all surfaces not intended to be coated.

B. All used rags, brushes, roller covers, and other application related materials shall be removed from the work site and disposed in a proper manner and in accordance with local waste regulations.

C. All equipment, staging, ladders, and other contractor materials brought onto the jobsite by the contractor shall be remove at the conclusion of the job in a timely manner.

END OF SECTION