

Metal Coat

Corrosion Protection

PRODUCT DESCRIPTION:

Coval Metal Coat is a thin film, single component coating designed to protect metal from corrosion. Metal Coat creates a matrix of nano sized particles that crosslink with the substrate and itself. This high-tension crosslink creates an extremely hard, durable waterproof, non-toxic clear surface. It is resistant against acids, hydrogen sulfide (H₂S), caustic ingredients, galvanic corrosion, abrasion, graffiti, and scale & dirt build up. METAL COAT is available in gloss, satin, or matte finish.

RECOMMENDED USES:

Iron, steel, stainless steel, galvanized steel, copper, bronze, and aluminum.

- Pipelines (internal & external)
- Refineries & Petrochemical Plants
- Bridges, Marinas
- Ships
- Underground Construction
- Saltwater environments

Thin Film Coatings:

CAUTION: Coval Coatings are professional grade coatings and should only be applied by experienced professionals. Coval has created a completely new kind of hybrid cross linking coating. This extreme cross linking is the science that allows the coatings to be so hard and durable, yet so thin. As they cure, the extreme cross-linking creates a high surface tension which in turn gives the coating extreme hardness.

The best practice is to apply enough coating to “wet-out” the surface and leave it to dry. Do not exceed 2-3 mils, wet film thickness. **MORE IS NOT BETTER.** If you apply the coating too thick, it will attempt to cross-link away from the surface, which may cause fracturing or delamination. Over applying the coating will either destroy the coating or cause whatever the coating is applied on to peel. Yes, it is amazingly strong.

To achieve a thicker coating, apply in multiple layers rather than applying one ‘thicker’ layer.

Our coatings are specifically designed for the substrate listed in the Data Sheet and should never be applied to substrates not listed.

PRODUCT CHARACTERISTICS:

Metal Coat is <100 g/liter VOC

ASTM C1353-09	Taber Abrasion test. (Granite 28-32)	39.11
ASTM G85-11	Annex 5 Acidic salt spray 1000 hours:	10 out of 10
ASTM D4587-11	Fluorescent UV-Condensation 1000 hours:	10 out of 10
ASTM D-1654-08	Accelerated Weathering Exposure, 1000 hours:	10 out of 10
ASTM D-5894-10	Cyclic Salt Fog UV Exposure. 1000 hours:	10 out of 10
ASTM D-7140-02	Blistering of Paints. 1000 hours:	10 out of 10
ASTM D-610-08	Rusting on Painted Steel Surfaces, 1000 hours:	10 out of 10
ASTM D-2803-03	Corrosion and Filiform. 1,000 hours:	None

SCAQMD & PROP 65

METAL COAT contains less than 100 g/L VOC and exceeds SCAQMD Rule 1113 requirements, the highest air quality control standards in the United States. MC 400 contains no known carcinogens under Proposition 65, California's Drinking Water and Toxic Enforcement Act of 1986

Dry Time:

Touch:	2-3 hours
Through:	3-5 hours
Full Cure:	7 Days

(Drying Time at 77 degrees F & 50% Relative Humidity)

Properties:

Color:	Clear
Vehicle Type:	Solvent Base
Flash Point:	-9C/15F (C Penskey-Martens closed cup)
VOC:	<100 g/ltr
Weight per Gallon:	7.36 lb/gallon (SG = 0.88)
Coverage	600 sq.ft./gallon (14.5m ² /liter)
Spread Rate:	0.0.8 -1.2 mils (20 – 30 micron)

APPLICATION INSTRUCTIONS:

METAL COAT, as with most final finishes, is best sprayed on to achieve optimum finish and appearance. With all methods of application, always mask off any adjacent surfaces to keep them free of drips or accidental coating. METAL COAT should be sprayed. However, if the project does not allow for spraying, as an alternative, brush on METAL COAT using a fine China bristle brush. This type of alternate application will not yield the same spread coverage and will not yield the optimum smooth finish as spraying. If applying outdoors, make certain the ambient temperature is between 45°F and 105° F, and RH is under 90%. Make certain that there is no chance of rain for a minimum of 5 hours after the estimated time of completion of the coating process. Also make certain there will be no additional return of morning dew to make the surface damp again before it has had a chance to dry for at least 5 hours.

Product Preparation:

Stir the contents thoroughly to re-suspend the satin or matte finish additives that have settled to the bottom. (You should feel a thick layer of sediment with your stir stick in the bottom of the container. This must be resuspended into the liquid to ensure performance of the coating). **Stir again every 15-20 minutes during the application process to re-suspend the particles.**

Surface Preparation:

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, and other foreign material. Heavy rust must be sandblasted or ground off. METAL COAT should be HVLP sprayed or dipped. It is fast-drying and, in most cases, requires only one coat.

New Iron & Steel:

The entire surface must be cleaned of any rust, scale, oil, and grease. On hot rolled steel, make certain to sandblast or grind off 100% of the slag from that process. Use a white rag and wipe the surface. If the rag remains white, your surface is clean.

METAL COAT can be applied over rust and corrosion primers or pipe coatings per the manufacturer's instructions. After primer or paint has dried to full cure, apply 1 coat of METAL COAT per application instructions.

IMPORTANT - make sure when applying over primers that the re-application time set by the primer's manufacturer is followed. If re-application window has passed, you must mechanically abrade the surface by sanding with a minimum of 220 grit sandpaper to achieve an anchor system for the Metal Coat.

IMPORTANT: When applying over steel or iron that has no primer, you must apply two coats of METAL COAT, wet over tack, no more than 15 minutes apart. This will fill micro holes that can rust if not coated properly.

Old Iron & Steel with Existing Primer or Paint:

Inspect the condition of the primer and paint to ensure it is sound and free of peeling or chips and that there is good adhesion. Sand blast to a minimum Commercial Blast Clean SSPC-SP-6 method or abrade off any existing peeling paints until you reach a solid base or repair by sanding with 220 grit sandpaper or lower, then re-paint as needed. Once re-painted areas are dry and cured, clean the surface with a damp rag with fresh water to prevent removal of the existing paint. Once surface is clean and dry, METAL COAT can be applied. Apply only one coat.

Aluminum, Copper, Brass, Bronze, & Stainless Steel:

Clean the entire surface of any oil and grease. Rinse with fresh water and dry. The surface must be free of any oil or grease to form a good bond. To ensure the surface is free of oil and grease, use a white rag wipe the surface. If the rag remains white the surface is clean; if the rag turns dark, continue cleaning until it remains white. Once clean, METAL COAT can be applied per application instructions. Only apply one coat.

Aluminum, Copper, Brass, Bronze, & Stainless Steel:

Clean the entire surface of any oil and grease. Rinse with fresh water and dry. The surface must be free of any oil or grease to form a good bond. To ensure the surface is free of oil and grease, use a white rag and wipe the surface. If the rag remains white, the surface is clean; if the rag turns dark, continue cleaning until it remains white. Once clean, METAL COAT can be applied per application instructions. Apply only one coat.

Powder Coated Metals:

Inspect the surface to ensure there are no breaches in the powder coating. If any appear, make certain to have them re-coated or primed with a matching paint to touch up. Clean the entire surface of any dirt, oil or grease. Rinse with fresh water and dry. Do not use solvent as it will damage the powder coating. Once the surface is clean and dry, METAL COAT can be applied per application instructions. Apply only one coat.

Test Area:

Due to the wide variety of metals and the various methods of application and environments, always test METAL COAT in an inconspicuous location to ensure adhesion and determine that the desired look is achieved. There will be a slight enhancement in appearance from the original surface, which will vary based on different finishes. **IMPORTANT** – METAL COAT is clear but on some white paints or white powder coats, color may be altered to appear off-white or slightly yellow once the coating is applied, so always do a small test on white surfaces in an inconspicuous spot to determine if any possible color change is acceptable.

APPLICATION TYPES:

Spraying:

Stir the contents thoroughly if using satin or matte finish. (You should feel a thick layer of sediment with your stir stick in the bottom of the container. This must be re-suspended in the liquid to ensure performance of the coating). **Re-stir every 15-20 minutes.** When surface preparation is complete and surface is dry and free of dust, begin application using a high volume, low pressure (HVLP) spray gun with a 1.0-1.3 size tip and the pressure set at approximately 25 to 30 psi. On a separate piece of cardboard, first spray a test pattern to achieve an 8" to 10" elongated pattern approximately 1 ½" wide in the middle and fluid enough to cover but not puddle. If there is high wind, this will affect the quality of the finish, as blowing wind can disrupt the spray pattern from your HVLP. It can also contribute to contamination of the finish from blowing dust. It may be necessary to erect a windscreen to protect the area. Once the spray pattern is achieved on the test cardboard, spray one coat in a cross-pattern; left to right, then up and down. This will provide sufficient coverage and will help prevent holes in coverage. (Exception for one coat is on unpainted steel or iron, which requires 2 coats wet on tack) Desired wet film thickness (WFT) is approximately 2.0 to 2.5 mils.

CAUTION:

If using spray application method in an enclosed space, make certain to tent off the area being sprayed with plastic tarps to avoid spray dust from traveling and contaminating other surfaces with over spray dust. Tented and enclosed areas always require to be positively supplied with fresh air and have ventilated exhaust to outside using fans. Never spray near any open flame or any possible source of ignition such as pilot light, or anything that may spark, as this may cause ignition and explosion of the fumes and vapors. (In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.)

If applying outdoors, make certain the ambient temperature is between 45°F and 105° F, and RH is under 90%. Make certain that there is no chance of rain for a minimum of 5 hours after the estimated time of completion of the coating process. Also make certain there will be no additional return of morning dew to make the surface damp again before it has had a chance to dry for at least 5 hours.

Brushing:

Clean the surface per preparation instructions. Stir the contents thoroughly to re-suspend the nano particles that have settled to the bottom. Re-stir the coating every 15-20 minutes during the application process to re-suspend the settling nano particles. Select the appropriate size brush width based on the surface area being coated. Using only a good quality China bristle brush, apply METAL COAT in a cross-pattern; up and down, then left and right. Desired wet film thickness (WFT) is approximately 2.0 to 2.5 mils.

To obtain the best results, do not overwork the coating, as it dries quickly. Do not bear down with the brush. Use light strokes and use the tip of the brush to smooth out the coating.

Dipping:

Make certain the surface is clean per preparation instructions. Stir the contents to re-suspend the nano particles that have settled to the bottom before dipping. Apply a blanket of nitrogen gas over the coating in the tank to prevent flashing of the solvents and evaporation of the product. Dip the pieces and agitate back and forth and up and down, then remove to dry rack. Make certain to re-stir every 15-20 minutes during the application process to re-suspend the settling nano particles. (In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.)

Internal Pipeline Coating:

To apply this to an existing internal pipeline requires specialized equipment. Please contact Coval-Group directly.

CARE AND MAINTENANCE:

For normal cleaning, simply clean by light-spraying the surface with a hose or wiping down with a damp rag to remove most dirt and spills on the surface. If an area is damaged or is mechanically abraded, lightly sand the area with 220 grit sandpaper and reapply METAL COAT. If the substrate is damaged at the same time, make the necessary repairs first, and then re-apply METAL COAT.

CLEAN UP:

Clean tools and flush equipment with acetone at least twice immediately after application.

IMPORTANT - once coating is dry the tools will not clean up with acetone or any other solvent.

STORAGE:

If you have excess coating remaining in a container, we recommend 1) put a nitrogen blanket on the top of the remaining liquid in the container or 2) move the remaining coating to a smaller container with as little air/oxygen in the container as possible. Store in cool dry location. Do not store solvent based products in sun or in sun heated vehicle as overly heated product can turn dark in color and remain tinted when applied. The coating should be very thin and clear, if you see that it has changed viscosity and/or color then that coating has expired (oxidized) and should not be used.

SAFETY AND ENVIRONMENTAL:

Always wear OSHA approved 1910.134 and ANSI Z88 2 Respiratory protection. Fresh air and exhaust are required in the work area. If inhaled, remove affected person to fresh air. Call physician immediately if physical difficulties occur. Wear butyl rubber gloves and other skin protection to avoid contact. In the event of contact with skin, wash skin thoroughly with soap and water. Chemical safety goggles or splash shields are required. Do not wear contacts without eye protection. Immediately flush eyes with water for 15 minutes after contact and get medical attention. If accidentally swallowed, rinse mouth thoroughly and obtain immediate medical attention. (In enclosed areas make sure to have an observer watching the applicator for any signs of physical distress.) Consult the Safety Data Sheet (SDS) for more information concerning proper Personal Protective Equipment and precautionary measures that are recommended for proper protection while handling this product.