

High Performance Antimicrobial Coating System

Surface Preparation, Mixing and Coating Application and Curing

DESCRIPTION

This system consists of cleaning areas to be painted followed by one coat of high performance Silver Bullet AM® antimicrobial protected coating.

SURFACE PREPARATION - Clean & Remove Oils

Surface preparation is extremely important for successful paint application.

Surface preparation is one of the most important steps in the shop applied coating process. If the surface is not adequately cleaned, then a future paint failure could occur. You must remove all grease, oils, salts and other contaminants by washing with BC4000 cleaner thinned from 5 parts water to 1 part cleaner, up to 9 parts water to 1 part water. More contaminants require a stronger mix.

Mix one part BC 4000 Biodegradable cleaner/degreaser to 9 parts water by volume.

Hand-trigger spray containers or larger volume garden pump-spray applicators can be used for applying BC4000 in a uniform spray.

Spray all surfaces with BC 4000 Cleaner/degreaser and let set one to two minutes.

Remove BC 4000 cleaner/degreaser by spraying areas again with clean water and hand-wiping using clean rags or towels. You may also air dry using compressed air.

Make sure all water and BC 4000 cleaner is completely removed prior to painting. Be sure to change rags regularly and discard rags or towels as they become contaminated with dirt or oils.

Visually inspect all areas to be painted to make sure that they are clean and dry and have no contaminants on them.

All surfaces must be free of oil residue so that paint will tightly adhere to the interior surface and not blister or dis-bond during subsequent handling or assembly.

If you observe any cratering or crawling of the coating during paint application STOP and rewash the entire surface. Extremely smooth or slick metal may require scuff sanding for maximum adhesion. * Consult BC4000 Product Data Sheet for additional information.

PRIMING

Quality paint jobs occur with quality preparation, products and application. Quality preparation includes cleaning the surface to be painted to remove all contaminants. Some customers do not have the proper equipment to adequately clean parts to be coated with water base coatings and may only solvent wash parts. For those customers, we have developed Prime Solution. Prime Solution, in laboratory tests, is able to bite through to surfaces contaminated with motor oil, cutting oils and mineral oils. Steel test plates were coated with oil and wiped with a paper towel to remove excess oil. While we would always recommend that surfaces be cleaned as well as possible, tests indicate that Prime Solution can supply a quality paint job on surfaces with some oil contamination. We recommend you test Prime Solution in your process to determine results in your application. Steel surfaces should have rust, grease, dirt, oil or loose paint removed. We recommend washing with BC 4000 Cleaner/degreaser. Solvent wash and wipe would be a second choice.

STRAINING

Straining Silver Bullet AM® components through a strainer prior to use is a precaution. We recommend 30 mesh stainless steel screens as strainers.

These are available at local paint supply stores. Straining is recommended, especially when mixing paint from previously opened containers that might contain dried paint or particulate matter that could clog the paint gun tip. Containers used for the first time typically do not require straining.

MIXING

Silver Bullet AM® series epoxy is a two component, water base product.

Mix 2 parts A to 1 part B by volume. Mixing parts A & B activates the curing process.

All mixed product should be used immediately (1 to 4 hours - subject to conditions)

This window of time is referred to as "Pot Life".

Silver Bullet AM® Mixing Instructions:

For 1 1/2 Gallon Volumes:

1. Thoroughly stir contents of Silver Bullet Tracer Black - Part A making sure all pigment is evenly dispersed and is not settled on bottom of the container. Mixed liquid must be uniform in color throughout.
2. Pour one gallon (128 fluid ounces) of Silver Bullet Tracer Black - Part A into clean, dry, 5 gallon polyethylene painter's bucket.
3. Pour off 2 quarts (64 fluid ounces) of Silver Bullet Part B (Cure) into clean, dry graduated polyethylene 2 quart container for measurement.
4. Add full contents of Part B (Cure) to Part A and mix thoroughly for 3 minutes using a small "Jiffy" mixer.
5. Pour mixed contents into spray unit tank for spray application. Optional tank liners can be used with Silver Bullet AM®.

For 1 Quart Volumes:

1. Thoroughly stir contents of Silver Bullet Tracer Black - Part A making sure all pigment is evenly dispersed and is not settled on bottom of the container. Mixed liquid must be uniform in color throughout.
2. Pour off 20 fluid ounces of Silver Bullet Tracer Black - Part A into clean, dry, graduated polyethylene 2 quart container for measurement.
3. Pour off 10 fluid ounces of Silver Bullet Part B (Cure) into separate clean, dry graduated polyethylene 2 quart container for measurement.
4. Pour contents of Part A and Part B (Cure) into separate clean, dry container and mix thoroughly for 3 minutes.
5. Pour mixed contents into spray unit cup for spray application.

No induction time required

Up to four hour pot life

Add up to 10% (max.) clean water for thinning

Refer to Silver Bullet Tracer Black product data sheet for additional information.

Equipment

Silver Bullet AM® can be applied by brush or roller, however it is highly recommended it be spray applied for productivity, consistent film build and maximum coverage rates. The product can be sprayed using conventional, airless, air-assisted airless or HVLP spray equipment.

For maximum yield applications we recommend the Binks SC400W spray package with 2.8 gallon pressure pot and 2100 series spray gun using a Binks 63ss tip. Follow equipment manufacturer's operating instructions and recommended tip size for use with medium viscosity paints. The product can be thinned up to 10% with clean water to make spray application easier.

The Following recommended settings apply to the Binks SC400W Package only.

TANK SETTINGS

Spray at a starting air pressure of 45-60 PSI and Fluid pressure of 8 to 10 Lbs. (adjust air pressure and fluid pressure as needed)

Note: Fluid pressure should never exceed air pressure.

2100 SERIES GUN

For maximum yield: use a Binks 63ss tip with a .028 (0.7mm) orifice (12 oz. flow rate)

For less yield: use a Binks 63B tip with a .046 (1.2mm) orifice (25 oz. flow rate)

EXTENSION WAND

The extension wand is only used when coating Spiral/round duct or pipe. See manufacturer's data sheet for diameters. We recommend the Binks "HC Series" 63" Inch extension wand (Model # 52-3559) for use with the 2100 series gun. This model includes a 360 degree spray nozzle for efficient coverage.

TANK SETTINGS W/ EXTENSION WAND

Set air pressure at 20 PSI and Fluid pressure of 5 Lbs. (adjust fluid pressure as needed)

Note: Fluid pressure should never exceed air pressure.

AIRLESS EQUIPMENT

When using airless equipment, dial up the pressure to where the product sprays evenly. Dialing pressure to the maximum will make it very difficult to apply to 1 mil of product. Also use a 0.11 orifice tip when spraying 20-451AM and 20-830AM. Use a 0.17 tip when spraying 20-452AM and 10-830AM. If the temperature is excessively hot, the dry time of Silver Bullet AM can be slowed down by adding ethylene or propylene glycol at the rate of 5 fluid oz. per mixed gallon of paint.

APPLICATION

Apply one coat SILVER BULLET AM® at 3.0 mils wet film to achieve 1.0 mils dry film thickness. Take care to maintain millage on hard to coat areas such as corners, edges and angles. Check film build throughout for added application controls, test with a Dry film thickness gauge after curing.

CONDITIONS

Only Apply SILVER BULLET AM® when air and surface temperatures exceed 50°F and are less than 95°F and the relative humidity is less than 85%. At 70°F and 50% relative humidity the coating will be dry to the touch in 45-60 minutes. You may re-coat in approximately 1 hour after dry to touch. Be sure coatings have been given adequate dry time (Minimally 24 hours) prior to sealing any fabrications for shipment. Prematurely sealed ductwork assemblies can prevent coating from drying and could potentially cause failure.

Important Note: DO NOT store or subject recently primed metal components to temperatures below 50 degrees Fahrenheit for at least 72 hours. Even when primer appears dry to touch, store at controlled temperatures to allow for proper curing.

ACCELERATED DRYING OPTIONS

Exposing Silver Bullet AM® coating to heat at 200 degrees F is roughly equivalent to a 7 day air cure at 75 degrees F. (However, there are some issues with the steel thickness related to time and temperature that need to be considered). A freshly painted piece of duct cannot be immediately exposed to an oven temperature of 200 degrees F. The top of the coating will "skin over" quickly and trap entrained air below the coating at the bond line to the metal. Since HVAC duct steel is thin gauge (20-26G, it will heat up rapidly and cause the entrained air to expand and blister the coating.

There are several options to get around this.

1. Silver Bullet AM® coating only needs to dry sufficiently to allow for wrapping the ends of the ductwork pieces for transport or storage. A 15 minute exposure to heat between 130 to 140 degrees F with good air movement would adequately achieve this.

2. If you wish to fully cure the coating at 200 degrees F, you will need to elevate the temperature incrementally, starting at around 120 degrees F for 15 minutes and increasing the temperature to 200 degrees F for the remaining 15 minutes.

Convection or infrared heat is acceptable. Air movement is recommended if the area is enclosed so that humidity does not build up.

AIR DRYING – OPTIMUM CONDITIONS

At 70°F and 50% Relative Humidity and with good air movement, Silver Bullet AM should be dried to touch within 15 minutes. 45 minutes after dry to touch, it can be recoated, wrapped for shipment or assembled. You should be able to put your hand on the painted surface and the coating should be hard to the touch. If the coating still feels soft, wait an additional hour and hand check again.

Adhesion Testing

Adhesion testing will determine the bond between the coating or paint and the substrate below. Adhesion failure can occur when a surface has not been properly prepared (cleaned) by REMOVING ALL oil and debris prior to painting.

As a quality control measure, It is highly recommended that applicators of Silver Bullet AM conduct systematic paint adhesion tests according to ASTM test method D 3359.

CLEANUP

Silver Bullet AM® is water-based epoxy paint. Use soap and water for cleanup. Clean equipment IMMEDIATELY after use. This product WILL NOT break down with soap and water AFTER it is cured and dry. If DRY, remove dry paint with MEK.

SAFETY INFORMATION

Specific safety information is found in the Product Data Sheet and the MSDS sheets that are supplied with each shipment of product. These products are designed for industrial application by qualified, professional applicators.

STORAGE INFORMATION

Keep containers closed when not using

Store containers in an area that can maintain temperatures between 45°F and 90°F.

NOTES

While every precaution is taken to insure that all the information furnished in this procedure is as accurate and complete, it is up to the customer to review these guidelines and operational guidelines of their equipment prior to start of any project. Please contact the appropriate vendor if you have any questions.