WILKO PAINT, Inc.

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MANUFACTURERS OF THE FINEST INDUSTRIAL FINISHES

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INORGANIC ZINC RICH PRIMER
WILKO NO. 859.06

PRODUCT DESCRIPTION: Wilko No.859.06 Primer Inorganic Zinc Rich is a two-component inorganic zinc rich primer that possesses excellent corrosion resistance afforded by galvanic protection.

PRINCIPAL USES: Used as primer for ferrous metals that are exposed to coastal, marine, and industrial environments. It is an excellent primer for high heat applications.

GENERIC TYPE: Ethyl Silicate

COLOR: Matte Gray - Green

COMPONENTS: Liquid component (Part A) and Zinc Dust (Part B).

MIXING RATIO: To 100 oz. Part A add 13 lbs. Part B.

POT LIFE: 8 hours

SHELF LIFE: 6 months @77°F, stored in cool, dry area. Rust on container indicates exposure to humidity and voids the shelf life warranty.

WEIGHT PER GALLON: 20.6 + .5 lbs (mixed)

VOC: 4.0 lbs (mixed)

SOLIDS BY VOLUME: 65.0 + 1.0% (mixed)

COVERAGE: @ 1 mil DFT (1.5 mils wet)
Theoretical - 1040 sq. ft./act. gal.
Practical - 750 sq. ft./act. gal.

RECOMMENDED DRY FILM: 2.0-4.0 mils, 3 max for high heat applications.

DRYING TIME: @ 77°F
To Touch: 20 minutes
To Recoat: 18 to 24 hours

TEMPERATURE RESISTANCE: up to 1000°F

THINNER: WilkoNo.37 (preferred) or Wilko No. 35 (cool weather) To keep VOC below the AIM limit of 4.2#/gal for metallic pigmented coatings, do not add more than 7 ounces of thinner per mixed gallon. If used as high temperature coating, do not add more than 79 ounces of thinner to keep VOC below the AIM limit of 5.4#/gal for high temperature coatings.

CLEAN UP THINNER: No. 37, MIBK or MEK

RECOMMENDED TOPCOAT: Epoxy, urethane, 100% acrylic coating, vinyl, or chlorinated rubber can be used for temperatures of up to 300°F. For high heat applications above 400° F use silicone coatings (pure or acrylic modified).

RECOMMENDED SUBSTRATE: Ferrous Metals

SURFACE PREPARATION: Accomplished by sandblasting to conform to a minimum NACE #2 surface preparation standard (Near White) as described below:

Near White Blast Cleaned Surface: Defined as a surface from which all dirt, grease, oil, paint, corrosives, mill scale, rust, oxides or other foreign matter has been removed except for light shadows and streaks or slight discoloration (oxide that is bonded with metal). At least 95% of any given surface area has the appearance of NACE #1 (White Metal) and remaining area is limited to slight discoloration (Comparable to SSPC-SP10, Near White Blast Cleaning). Angular ballast profile of 1- 3 mils (25-75 microns) must be achieved per ASTM D4417. Prior to Sandblasting: Round off all sharp edges and remove all weld splatter with power tools. Remove oil, grease, and other surface contaminants with suitable solvent or detergent wash. After sandblasting and before priming, remove all sand and other residue from surface with high-pressure air, lint free rag or vacuum. Sandblasted surface should not show effects of any oxidation or contamination prior to application.

APPLICATION PROCEDURE:
For uniform deposition, spray application is recommended.

1. *MIXING :* Slowly sift Component B (dust) into Component A (liquid) while mixing. Never add liquid to dust!! Mix for five minutes then strain through a 30-50 mesh screen. Primer should be under constant agitation after the two components are mixed and while applying.

2. *THINNING:* Use No.35 Thinner in cool weather. Use No. 37 Thinner for hot or windy conditions or if any dry overspray is evident. The following is a starting guideline for thinning: Because of the differences in painting conditions, equipment and application techniques, adjustments in the amount of thinner used may be necessary. For Conventional Spray - Thin 1 - 3 quarts per gallon. For Airless Spray - Thin 1 - 2 quarts per gallon. CAUTION- Zinc will settle rapidly due to its heavy weight. Over thinning will make zinc settle faster.

3. *EQUIPMENT:* As recommended or equal:
Conventional: DeVilbiss MBC-510 gun with heavy mastic spring, an E tip and a 704 air cap, or Binks 18, 62, 2001, 2100 or 69 gun with a 66 or 68 nozzle and no more than 25 feet of 1/2" ID material hose. A variable speed agitator in the pressure pot and an oil and moisture trap in the main air supply line are essential. Also, separate air and fluid pressure regulators are recommended.
Airless: Graco Bulldog 30:1, a Speedflo Alaskan PZ, or equivalent designed for zinc applications. Teflon packings are recommended for reliable pump operation. Use fluid tip with a .017 inch orifice or larger and 1800-3000 psi fluid pressure and variable speed mixer to keep primer uniformly blended.

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CAUTION - To insure against loss of, or damage to spray equipment, do not allow material to remain in pot, pump or fluid lines when unit is not operating, except for brief periods. When an operation interruption is necessary, immediately purge equipment of material.

4. *TECHNIQUE:* Properly adapted equipment for application of inorganic zinc is of the utmost importance. (see "Equipment" above) Optimum galvanic functionality of the zinc filler is accomplished by the uniform deposition of the total amount of zinc filler. Settling of the heavy particulates in the spray container will cause an imbalance of the formulation and will adversely affect performance, illustrating the need for the suspension of the zinc by frequent agitation during the application process. The applicator must deposit the atomized material as a wet film (wetness is observed briefly at high ambient temperatures) to minimize dry spray and excessive dissipation of the vehicle between nozzle and surface. Note: Refer to Section 8 regarding zinc splitting. Loose powder, observed by the naked eye or easily brushed off with bare hands, is an indication of improperly thinned and/or applied primer and may result in difficulty with the application of the topcoat and an early system failure. At higher temperatures (over 75°F) or under windy conditions, adjust spray equipment and/or add additional No. 37 until a wet film can be deposited at the proper film thickness. Multiple passes with spray apparatus may be necessary to get the recommended film depth, especially with conventional equipment. A wet film gauge is useful in determining the approximate dry film depth of inorganic zinc if used as follows:

   After film has set for an hour or so, as indicated by dry flat surface conditions from solvent loss, place gauge firmly on flat surface, move in scratching motion until bare metal is contacted to get a reading. Imprint left by graduated prongs indicates the approximate depth of the uncured film. Due to the high solids content and the puffy, porous nature of the coating, the reading obtained is a reasonably accurate dry film measurement of the cured inorganic zinc. With this type of inorganic zinc, minimal shrinkage will occur through fixation (solvent loss) during completion of the cure.

5. *CURING :* Atmospheric moisture acts as a curing agent for No. 859.06. Because of this, existing percentage of relative humidity will play an important part in the rate of cure. Normal curing rates are based on 75°F with relative humidity above 50%. When humidity conditions are below this level, cure may be enhanced and accelerated with frequent saturating mist coats of clean water. This mist application may proceed 2-4 hours after deposition of the primer and continue at intervals of 2 - 8 hours until a full cure is established. In addition to serving as a curing agent, water mist may also expose areas of thin or non-existing primer by a sudden discoloration induced by flash rusting. Such areas, of course, must be repaired spot blasting and repriming. To help determine if the film is cured for the acceptance of a topcoat, saturate a lint free rag with Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and vigorously rub the surface. If the film has zero solubilization it is reasonable to assume adequate cure for top coating exists. Ambient temperatures below 75°F will tend to decelerate cure. Although, given adequate time of several days or even weeks, primer will cure at temperatures as low as 35°F, providing the humidity conditions are adequate. Any chemical reaction is slower at cooler temperatures, so it can be expected that it will also slow down the curing process.

6. *TOPCOATING*: Use only materials designed as being compatible with Inorganic Zinc Primers, i.e., epoxy, urethane, coal tar epoxy, vinyl, chlorinated rubber, latex, etc. Under certain conditions a "mist coat" may be required to prevent topcoat from bubbling. Before topcoating, remove loose zinc overspray with stiff bristle brush. Refer to Product Data of topcoat for application instructions.

   Coating Inorganic Zinc Rich Primer: The porous nature of zinc often causes pinholes or bubbling of the Intermediate (Tie) Coat. To eliminate bubbling of the first coat, thin 50% and apply a wet mist coat over surface area, allowing a short interval for solvent to escape, followed with full wet coat. This tie coat will penetrate the porous structure displacing trapped air and providing a sealed substrate for succeeding topcoat. Tie Coat should be applied to provide 3.0-5.0 mils dry film thickness, depending on the top coat and exposure.

7. *REPAIR PROCEDURE:* Clean damaged area by potblasting to base metal and recoating with No. 859.06. Except for surfaces operating at or above 200°F, spot repair may be effectively accomplished by using Wilko No. 349-08 Organic Zinc Primer.

8. *ZINC SPLITTING:* This is evidenced by delamination of the coating, where part of the primer remains on the substrate and part is peeled off with the topcoat. It can be caused by excessive film build, dry spray during application, or both. Uncured primer will split until fully cured.

ALTERNATE PRODUCT: Wilko 809.01 Silicone Zinc Rich Primer may be used in place of 859.06 for high temperature service. It is noted for ease of use and it minimizes most of delamination problems associated with improper primer application. 809.01 is not for ambient temperature application.

PERFORMANCE:

ASTM B117 Salt Spray @ 2 mils dry film thickness over blasted steel: No rust, no blistering, no mudcracking after 4000 hours
ASTM D3363 Pencil Hardness 2H

FIRST AID: If inhaled, remove to fresh air. If not breathing, administer artificial respiration. In case of any contact with eyes, flush with plenty of water for 15 minutes. Secure medical attention in all incidence of exposure.

PRECAUTION: Not intended for general consumer use. This product is flammable and can cause skin and eye irritations. Keep away from sparks, heat and open flames. Avoid contact with eyes, skin and clothing. Use with adequate ventilation and avoid prolonged breathing of vapors. Wear an air-supplied mask to avoid breathing concentrated vapors in enclosed areas. Keep the container closed. For additional safety information, refer to Material Safety Data Sheets.