



# ITW- American Safety Technologies

Application Specification

Specification No. ASTI-91605-440G

September 16, 2005

NON-SKID COATING SYSTEM

PS-100 WB Primer/Sealer & MS-440G Non-skid  
Applied to a concrete substrate

## 1. SCOPE

**1.1 Scope.** This specification covers the surface preparation, mixing, and application of non-skid coatings to a concrete substrate.

**1.2 Classification.** The coating system covered by this specification will be furnished by ITW - American Safety Technologies and will be comprised of the following products:

<u>Primer</u>	<u>Non-Skid</u>	<u>Color Topping</u>
PS-100WB	MS-440G	MS-200

## 2. REQUIREMENTS

**2.1 Composition.** The coating system shall consist of a chemical resistance, two-part epoxy non-skid topcoat and a two-part, water based, proprietary epoxy primer/sealer, as specified in paragraph 1.2. The proprietary system shall meet all Department of Defense Specifications including MIL-PRF-24667A-Type I, DOD-C-24667-Grade A and quality under MIL-I-45208, MIL-Standard 45662. Products listed in paragraph 1.2 have been specially formulated to meet all above specifications.

**2.2 Appearance of dried coating.** When applied in accordance with this specification, the primer will dry to a smooth uniform film, free of spotting, streaking, mud cracking, wrinkling, cratering or blistering. When the non-skid is applied by phenolic roller, the non-skid topcoat will have a textured appearance of roughly parallel rows of raised coating, forming peaks or ridges. The aggregate will be uniformly distributed, and will have a coarse, rough appearance.

**2.3 Condition in container.** Individual components of the two-part coating will not show skinning, livering, curdling, or separation of ingredients, nor will they show any hard settling of grit which cannot be dispersed to a uniform consistency by 5 minutes of stirring with a power mixer.

### 3. COVERAGE

3.1 System Coverage. The following coverage is required by this specification:

<u>Part Number</u>	<u>Coverage Rolled</u>
PS-100WB	320 sq. ft. /gal. (2 mils DFT)
MS-440G	20-30 sq. /gal.
MS-200	320 sq. ft. /gal. (5 mils WFT)

### 4. STORAGE

4.1 Long term storage. Material is to be stored at temperatures not less than 50E F and not more than 90E F.

4.2 24 hours before application. Material is to be stored at temperatures between 60° F and 80° F.

4.3 Shelf Life. The shelf life of all coating materials specified in paragraph 1.2 is 1 year from the date of manufacture.

### 5. SURFACE PREPARATION

5.1 New Concrete. New concrete should be wet cured for at least three days and allowed to dry with good ventilation for an additional thirty days.

After proper curing, new floors must be swept clean of all contaminants which might interfere with the adhesion of the coating system including laitance, curing membranes, surface hardeners, greases and oils should be removed. An appropriate surface profile should be created using chemical or mechanical means.

The preferred method to prepare floor surfaces and to remove laitance, curing membranes and surface hardeners is by abrasive blast cleaning with a portable shot blast machine.

Where abrasive blast cleaning is not feasible, chemical cleaning of laitance and unbonded particles can be accomplished by etching the surface with a muriatic acid or a buffered acid solution. Follow acid manufactures application and safety instructions. After the acid has finished reacting with the concrete the residue must be removed by a detergent washing followed by a liberal fresh water rinse or preferably by power washing. Allow the surface to completely dry.

**Note: Acid etching will not remove oil, grease or wax. If the acid does not bubble or foam when spread on the concrete, the surface should be examined for films of oil, grease, wax, curing membranes, hardeners or other sealers.**

**5.2** Aged or coated concrete floors. Remove all paint films, laitance, and unbonded particles, preferably by abrasive blasting. Remove oil, grease, dirt, wax etc., by dissolving with a water-based cleaner/degreaser. Place particular emphasis on examination for grease, oil and chemical contamination and subsequent adequate cleaning.

**5.3** General. Since conditions such as temperature, humidity, density, PH, condition of surface, etc. vary, it is strongly recommended that the applicator apply a test patch to determine adequacy of preparation and suitability.

**Note: Repair disintegrated or cracked concrete. After the concrete is repaired, the usual methods of surface preparation are employed prior to coating. Oil soaked substrates are best prepared by UHP Water Jetting.**

**5.4** Surface Profile. A properly etched surface should have the texture of rough sandpaper.

## **6. PRIMER APPLICATION**

**6.1** Purpose. Primer is required to promote adhesion of the non-skid topcoat and enhance the total performance of the non-skid system. The use of any other primer than specified in paragraph 1.2 is strictly prohibited.

- 6.2 Surface Condition. As specified in paragraph 5.1, the surface must be free from all contaminants before application of the primer. If any contaminants are present, they must be removed using a 3-5% mild detergent solution. If a detergent solution is used, rinse the surface thoroughly, two times.
- 6.3 Temperature. As specified in 4.2 the primer should be stored between 60°F and 80°F for 24 hours before use. The substrate temperature must be between 55°F and 110°F.
- 6.4 Mixing. Pour the hardener into the container of base material and stir thoroughly by suitable mechanical means for 3-5 minutes.

**NOTE: The proper blending of the two components is critical to the performance of the coating.**

- 6.5 Thinning. Not allowed.
- 6.6 Spray Application. Airless, air assisted or conventional paint spray equipment may be used.
- 6.7 Roller Application. Use a short nap mohair paint type roller. Apply uniformly.
- 6.8 Brush Application. Use a 4" thin stock brush.
- 6.9 Primer Film Thickness. Apply at least two mils DFT above the surface anchor profile.
- 6.10 Pot Life.

PS-100 WB - 2 Hrs @ 70°F

**IMPORTANT: Unlike conventional epoxies, PS-100 WB will not harden in the can. It will remain liquid after its 2-hour pot life has expired. Therefore, no material should be used 2 hours after mixing, as it will not cure properly.**

- 6.11 Induction Time. No induction time is required.
- 6.12 Cure. The primer must be tack free before overcoating. Allow 3-6

hours @ 70°F before applying the MS-440G topcoat. The amount of time for curing will decrease with warmer conditions and increase in colder conditions. The non-skid topcoat should be applied within 36 hours of primer application for best results. If topcoating is delayed more than 7 days, the area, after cleaning in accordance with paragraph 6.2, should be brush blasted and PS-100 WB reapplied.

**6.13** Humidity. Maximum 85%.

**6.14** Dew Point. Surface temperature must be a minimum of 5°F above the dew point.

## **7. NON-SKID APPLICATION**

**7.1** Substrate. As specified in paragraph 6.2, the primed surface must be free from all contaminants before the non-skid application.

**7.2** Temperature. As specified in paragraph 4.2 the non-skid coating should have been stored between 70°F and 80°F for 24 hours before use. The substrate temperature must be between 35°F and 90°F.

**7.3** Mixing. Premix the base component. Make sure all settlement is lifted off the bottom of the container and is uniformly dispersed in the material. Pour the entire contents of hardener can/bag into base material. Mix hardener and base material with a mechanical mixer for 3-5 minutes. The material will assume a uniform color and appearance.

**Note: The proper blending of the two components is critical to the performance of the coating. Material not thoroughly mixed will not cure properly.**

**7.4** Thinning. Not allowed.

**7.5** Roller Application. In order to achieve the correct profile, the non-skid material must be applied with a napless phenolic roller with a 5' roller handle. Pour a ribbon of non-skid material 2' to 3' long and approximately 1' to 2' wide. Roll material in one direction only, in a slow straight stroke pulling material towards you with a moderate amount of pressure on the roller handle.

Borders and other areas where non-skid need not be applied should be taped or masked. The tape is pulled after the non-skid has cured revealing a clean straight line. Borders may then be painted with a proprietary acrylic epoxy color topping (MS-200) available from the non-skid manufacturer.

**7.6** Pot Life.

MS-440G 2 hours @ 70°F

Pot life is increased at lower temperatures and decreased with higher temperatures.

**7.7** Induction Time. No induction time is required.

**7.8** Cure. Foot traffic: 24 Hrs @ 70°F - Heavy vehicles: 96 Hrs @ 70°F

**7.9** Humidity. Maximum of 85%.

**7.10** Dew Point. Surface temperature must be a minimum of 5°F above the dew point.

**NOTE: DO NOT apply material when the surface temperature is under 40°F or over 130°F.**

**8. Visual Landing Aids (VLA) and other safety markings.**

**8.1** Use MS-200 Acrylic Epoxy Color Topping; follow manufacturer's technical data sheets.

**END**