NAVSEA REVIEWED ASTM F-718

ITW AMERICAN SAFETY TECHNOLOGIES

MS-400 G

MS-400G

MIL-PRF-24667

If this product is to be applied as part of a coating system, all components of the system must be as listed on the QPL.

This NAVSEA-REVIEWED ASTM F-718 data sheet is the only data sheet approved for use when utilizing this coating for U.S. Navy preservation projects. NAVSEA's review covers only the application process for the material. The review does not denote the material as a qualified product, nor does it constitute an approval for purchase/procurement of the material. For products on the Qualified Products List (QPL) for this MILSPEC, please refer to https://assist.daps.dla.mil/quicksearch/

Questions regarding modifications or updates of this ASTM F-718 shall be directed toward:

NSWCCD
(215) 897-7411
nswccd_astm_f718@navy.mil

ASTM F 718

MS-400G

SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

CONTINUATION SHEET USED: ☐YES ☒NO

Date: 4 Oct 2012

I. GENERIC TYPE AND DESCRIPTION: MS-400G – Epoxy – Polyamide Nonskid Coating
Specification Number: MIL-PRF-24667

II. MANUFACTURERS DATA:

(a) MANUFACTURER: ITW American Safety Technologies
130 Commerce Drive, Montgomeryville, PA 18936

(b) PRODUCT DESIGNATION: MS-400G Nonskid

(c) COLOR(S): Dark Gray FED-STD-565 Color Number 36076 (Custom colors available, subject to minimum quantities)

(d) USES: Abrasive Nonskid Deck Coating for Critical and Non-Critical Decks

(e) TECHNICAL SERVICE REPRESENATIVE:
Phone: 215-855-8450
Fax: 215-855-4688
Email: SALES@ITWPOLYTECH.COM
Website: www.itwast.com

(f) NOT RECOMMENDED FOR: N/A

III. PROPERTIES:

(a) % VOLUME SOLIDS (ASTM D 2697): 86 ± 1%

(b) % WEIGHT SOLIDS (ASTM D 1475): 95 ± 2%

(c) FLASH POINT (ASTM TEST METHOD D 3278): >102 °F (39 °C)

(d) WEIGHT PER VOLUME (FTMS 141a4184.1): 18.70 ± 0.2 lbs. per gallon

(e) % EDGE RETENTION: N/A

(f) SHELF LIFE: 1 year

(g) VISCOSITY (FTMS 141a4281): COMPONENT A: N/A
COMPONENT B: N/A
MIXED: Brookfield Viscosity: 40000-46000 cps @ 75 °F

(h) PACKAGING: 5 gals in 6 ½ gal. pails

(i) NUMBER OF COMPONENTS: 2

(j) GLOSS (ASTM D 523): N/A

(k) STORAGE REQUIREMENTS: LONG TERM TEMP. MIN. 40 °F MAX. 100°F
24 HRS PRIOR TO MIXING: MIN. 60 °F MAX. 80 °F
ADDITIONAL PAINT STORAGE REQUIREMENTS: Colder temperatures will extend cure time.

(l) VOLATILE ORGANIC COMPOUND (VOC- EPA TEST METHOD 24): 0.9 lbs/gal (114 g/L)

(m) WEIGHT OF DRY FILM (WEIGTH/FT^2 AT 1 MIL THICKNESS): 4.5-5.5 g/ft² (0.01-0.012 lbs/ft²)

(n) SPECIAL PROPERTIES: N/A

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IV. SURFACE PREPARTION MINIMUM REQUIREMENTS (USE SPECIFIC STANDARD NUMBERS):

(a) INITIAL: Remove grease, oil, and dirt (SSPC-SP1) or other approved method.

(b) TOUCH-UP: For deck edges, hard to reach areas and for areas not to receive nonskid, use power tool cleaning to bare metal, SSPC-SP11 is recommended.

(c) PROFILE (ASTM D 4417 Method C): MIN. 3 mils MAX. 6 mils

(d) SPECIAL INSTRUCTIONS: N/A

(e) PRIMER REQUIREMENTS: MS-7CZ, minimum 3 mils, DFT.

(f) MAXIMUM ALLOWABLE CONDUCTIVITY (BRESTLE PATCH METHOD): N/A

(g) MAXIMUM DEGREE OF FLASH RUSING ALLOWED (LIST COMMERICAL STANDARD): N/A

SPECIAL SAFETY PRECAUTIONS:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: WARNING! IRRITANT. **Read MSDS before use.** Do not get in eyes. Avoid contact with skin and clothing. Avoid inhalation vapor or mist. Use with adequate ventilation. Wash thoroughly after handling, and before eating, drinking or smoking. Remove contaminated clothing and wash before use.

OTHER PRECAUTIONS: Avoid extreme heat – **keep away from flame or other ignition source.**

V. MIXING PROCEDURES:

(a) MIXING RATIOS BY WEIGHT: 13.3:1 (base to hardener)
BY VOLUME: 5.7:1 (base to hardener))

(b) INDUCTION TIME: N/A

(c) RECOMMENDED SOLVENT – THINNING: NO THINNING ALLOWED
CONFINED AREAS: NO THINNING ALLOWED
NON-CONFINED AREAS: NO THINNING ALLOWED
CLEAN UP: Isopropyl Alcohol
Aromatic Naptha
N-Methyl Amyl Ketone (MAK)
S-426 Solvent.

(d) THINNING REQUIRMENTS (RATIO): NO THINNING ALLOWED

(e) POT LIFE:

1 Hr(s) @	90 °F (32 °C)
2 Hr(s) @	70 °F (21 °C)
3 Hr(s) @	50 °F (10°C)

(f) SPECIAL INSTRUCTIONS: **Improperly mixed material will not cure properly.** A Compound or Double Box Vortex Mixing Paddle may be used to perform both the base (Part A) pre-mix and combine components (Part A and B) with the same paddle. Perform a pre-mix of base material for at least 1 minute. Following pre-mix of base material (Part A) add hardener (Part B) to the base material (Part A). Once the hardener is introduced, continue mixing the combined contents of the kit for an additional 2-5 minutes or until a homogenous blend of both components is achieved and mixture presents a uniform color and appearance.

If a single mixing blade is used for mixing, perform a pre-mix of the base material for no less than 3 minutes. Slowly add the hardener while continuing mixing. Once all the hardener has been introduced, continue mixing the combined contents of the kit for 3-5 additional minutes. Ensure a homogenous blend of both components is achieved and the mixture presents a uniform color appearance. Additional mixing time may be required to obtain a homogenous blend and a uniform color appearance. **WARNING – Inadequately mixed material will not cure properly!**

AMERICAN SAFETY TECHNOLOGIES
An Illinois Tool Works Company

CONTINUATION SHEET USED: ☐YES ☒NO
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VI. APPLICATION:

(a) ENVIRONMENTAL LIMITATIONS:

SUBSTRATE TEMPERATURE: MIN. 40 °F MAX. 110 °F

MINIMUM SUBSTRATE TEMPERATURE DIFFERENCE ABOVE THE DEW POINT: 5 °F

MAXIMUM PERCENT RELATIVE HUMIDITY: 85%

AMBIENT TEMPERATURE: MIN. 40 °F MAX. 100 °F

(b) FILM THICKNESS (SSPC PA2-73T) - PER COAT:

WET MIN. 53 mils WET MAX.82 mils

DRY MIN. 45 mils DRY MAX. 70 mils

SPREAD RATE: 20-30 ft²/gal

(c) DRY TIMES (ASTM D 1640):

Surface Temperature	40 °F (4.4 °C)	70 °F (21.1 °C)	90 °F (32.2 °C)	110 °F (43.3 °C)
Tack Free	N/A	N/A	N/A	N/A
Dry to Touch	20-24 hrs	10-12 hrs	5-6 hrs	3-4 hrs
Dry Hard	30-36 hrs	16-18 hrs	8-9 hrs	5-6 hrs
Dry to Handle*	72 hrs	24-30 hrs	12-15 hrs	6-8 hrs
Overcoat – Min**	N/A	N/A	N/A	N/A
Overcoat – Max**	N/A	N/A	N/A	N/A
Cure to Full Service	14-21 days	7 days	5 days	3 days
Top Coat with Color Topping ***	3-30 days	1-30 days	1-30 days	1-30 days

*Minimum dry time before color top coat application of visual landing aid markings.
**Except for seam overlap – overcoating nonskid with nonskid for shipboard application is not authorized.
***Apply color topping (Visual Landing Aid Markings) prior to placing newly applied nonskid into service.

(d) EQUIPMENT REQUIREMENTS (INCLUDE PREFERRED, SUITABLE, NOT SUITABLE REQUIREMENTS): Phenolic hard core roller with extended handle; #¾", ¾ HP, 450 RPM power mixer capable of mixing heavy, mastic materials.
IF PLURAL COMPONENT EQUPIMENT IS REQUIRED STATE SO: N/A

IF HEATED LIENS ARE REQUIRED, STATE SO: N/A

(e) SPECIAL INSTRUCTIONS: **NOTE**: 1) Do not apply when deck temperature is under 40°F or over 110°F. 2) At time of application, in accordance with NAVSEA Standard Item 009-32 MATERIAL TEMPERATURE should be no lower than 50°F or higher than 90°F. 3) Caution should be taken that the surface temperature is at least 5°F above the dew point at application. 4) MS-400G is formulated to be applied within the parameters listed on this document. NAVSEA Standard Item 009-32 applications may adjust the environmental and application procedures recommended by this ASTM-F718.

REPAIR PROCEDURES IF THE OVERCOAT WINDOW HAS BEEN EXCEEDED FOR **CRITICAL** APPLICATIONS: Please refer to NAVSEA Standard Item 009-32 and NSTM Chapter 634 Guidelines for secondary surface preparation after 36 hours.

REPAIR PROCEDURES IF THE OVERCOAT WINDOW HAS BEEN EXCEEDED FOR **NON-CRITICAL** APPLICATIONS: If less than 7 days has elapsed since the application of the primer, a proprietary non-skid or color topping may be applied after visual inspection to confirm the absence of grease, dirt, salts, or other surface contaminants. If surface contamination is suspected as a result of visual inspection or for other reasons, the entire surface shall be cleaned in accordance with SSPC-SP 1. Apply the proprietary non-skid or color topping after surfaces are completely dried.

If more than 7 days but less than 30 days has elapsed since the application of the proprietary primer coat, the entire surface shall be cleaned in accordance with SSPC-SP 1. Ensure the surface has fully dried, then lightly abrade with abrasive blast, power sanding, or hand sanding using 80-120 grit sandpaper. Perform a solvent wipe of the abraded surface and then apply a tack coat (2-3 MILS/ 50-75 MICRONS WFT) of proprietary primer. The tack coat shall be allowed to cure until dry to handle before applying a proprietary nonskid or color topping. For application, mixing, and cure time guidance of the proprietary primer refer to the appropriate ASTM F-718.

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Date: 4 Oct 2012

ADDITIONAL DATA/INSTRUCTIONS:

II. MANUFACTURERS DATA:

ADD ADDITIONAL COMMENTS FROM PART II HERE:

III. PROPERTIES:

ADD ADDITIONAL COMMENTS FROM PART III HERE:

IV. SURFACE PREPARATION MINIMUM REQUIREMENTS (USE SPECIFIC STANDARD NUMBERS):

ADD ADDITION COMMENTS FROM PART IV HERE:

V. MIXING PROCEDURES

ADD ADDITIONAL COMMENTS FROM PART V HERE:

VI. APPLICATION REQUIREMENTS

ADD ADDITIONAL COMMENTS FROM PART VI HERE:

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