SURFACE PREPARATION AND APPLICATION GUIDE

SERIES 423 PIPE ARMOR™ FJW

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INNOVATION IN EVERY COAT.™

1.0 INTRODUCTION

The purpose of this guide is to acquaint contractors and applicators with the basic information necessary for properly ordering and installing Tnemec's Series 423 Pipe Armor™ FJW. Prior to starting work, please read this entire guide carefully. If you have questions, contact your Tnemec representative or call Tnemec Technical Service at +1 816-483-3400. It is important that you obtain answers to any questions before work begins.

Please review all pertinent Product Data Sheets as well as the project specifications and compare them with this guide. Resolve any inconsistencies prior to starting work. Contact Tnemec Technical Service for the most up to date equipment recommendations.

This application guide cannot cover every issue that may be encountered in the field. If issues arise that are not addressed in this guide or the Product Data Sheets, please contact your Tnemec representative or call +1 816-483-3400 for assistance.

2.0 PRODUCTS & PACKAGING

2.1 SERIES 423 PIPE ARMOR FJW

Series 423 Pipe Armor FJW is a 100% solids epoxy coating specially designed to protect field joints and welds on steel pipelines and to repair areas damaged during transport and installation. This user-friendly and fast-curing coating offers exceptional adhesion and long-term corrosion protection, and provides excellent resistance to cathodic disbondment. Series 423 is applied over clean, bare steel and adjacent fusion bonded epoxy (FBE), as well as liquid epoxies.

2.2 SERIES 423 PACKAGING

KIT SIZE	PART A (partial fill)	PART B (partial fill)	YIELD (mixed)
Small Kit	Quart jar	Pint jar	0.125 gallon (0.47 L)

2.3 SERIES 423 COVERAGE RATES (THEORETICAL)

	DRY MILS (MICRONS)	WET MILS (MICRONS)	SQ.FT./GAL (M^2/GAL)
Suggested	30.0 (760)	30.0 (760)	53 (5.0)
Minimum	20.0 (510)	20.0 (510)	80 (7.5)
Maximum	60.0 (1525)	60.0 (1525)	27 (2.5)

2.4 SERIES 423 STORAGE & MATERIAL TEMPERATURE

Minimum storage temperature is 20°F (-7°C) and maximum is 110°F (43°C). For optimal handling and application characteristics, both material components should be stored between 70°F and 80°F (21°C and 27°C) for at least 48 hours prior to use.

3.0 SURFACE PREPARATION

Ensure there is adequate access on all sides of the pipe weld, including the bottom side. Use an inspection mirror to identify holidays and ensure coverage of the bottom side.

3.1 PREPARATION OF STEEL - SOLVENT CLEANING

The surface should be clean, dry, and contaminant free. Clean surfaces of grease, oil, salts, and other contaminants with solvent in accordance with SSPC SP-1 Solvent Cleaning. This cleaning should be performed when pipe is at least 5°F (3°C) above the dew point.

3.2 PREPARATION OF STEEL - ABRASIVE CLEANING

Pipe surfaces to receive Tnemec's Series 423 Pipe Armor FJW should be abrasive blasted to near white metal cleanliness in accordance with SSPC-SP10/NACE 2 Near White Metal Blast Cleaning or ISO Sa 2½ Very Thorough Blast Cleaning and achieve a minimum 3.0 mil angular anchor profile.

3.2 PREPARATION OF FUSION BONDED EPOXY

Sweep blast adjacent FBE coatings in accordance with SSPC-SP7/NACE 4 Brush-Off Blast Cleaning or ISO Sa 1 Light Blast Cleaning with a minimum angular anchor profile of 1.0 mil (25 microns). The adjacent coating must be cleaned and abraded 2" (5 cm) to either side of the cutback (the bare steel area). Burnishing or polishing must be avoided.

3.3 ABRASIVE CLEANING

Blasting should not be performed when the surface temperature is less than 5°F (3°C) above the dew point to prevent the formation of rust bloom. Dew point and surface temperature readings should be taken prior to blasting to ensure this condition. Painting over flash rust or other contaminants is not acceptable. Care should be exercised by all personnel to avoid hand or clothing contamination of the freshly-blasted surface.

All dust and blasting debris must be removed prior to coating application, resulting in a clean, dry, contaminate free and angular profiled surface.

Abrasive blasting may expose surface imperfections in steel surfaces that may previously have gone unnoticed. If practical, these imperfections must be repaired immediately and blasted to duplicate the surrounding area.

4.0 PRIMERS

4.1 PRIMERS FOR STEEL

Steel: Self-priming.

5.0 MIXING

5.1 SERIES 423 PIPE ARMOR FJW - THINNING

DO NOT THIN. Thinning will adversely affect the performance properties.

5.2 SERIES 423 PIPE ARMOR FJW - MIXING

Power mix the contents of each container, making sure no pigment remains on the bottom. Scrape all of the Part B into the Part A can. Mix slowly for two minutes, to minimize air entrainment. Use a mixing speed that uniformly blends the two parts but does not create a vortex in the mixture or cause spillage. Blend both parts to create a uniform color with no streaks.

5.3 SERIES 423 PIPE ARMOR FJW - POT LIFE

The pot life of Series 423 at 75°F (24°C) is 15 minutes. Due to this short pot life, planning ahead is critical. A person on each side of pipe helps reduce application time per weld and limits times crossing pipe.

6.0 CURING TIME

TEMPERATURE	TO HANDLE	MAXIMUM RECOAT
140°F (60°C)	15 minutes	24 hours
75°F (24°C)	2 hours	24 hours

Note: Curing time varies with surface temperature, air movement, humidity, and film thickness.

7.0 APPLICATION & EQUIPMENT

Before beginning application, ensure there is adequate access on all sides of the weld, including the bottom side.

7.1 APPLICATION EQUIPMENT

Use only new or cleaned brushes/rollers/applicator pads for each mixed kit. Carrying over sundries from kit to kit will greatly reduce pot life and may adversely affect the overall application properties.

Brush: Use high quality natural or synthetic bristle brush.

Roller: Use high quality 3/8" (9.5 mm) to 1/2" (63.5 mm) nap, shed resistant, woven fabric roller cover.

Applicator Pad: Use high quality foam, microfiber, or fabric applicator pad.

7.2 SURFACE TEMPERATURE

Minimum surface temperature is 60°F (16°C) and maximum is 150°F (66°C). The surface should be dry and at least 5°F (3°C) above the dew point.

7.3 APPLICATION

Slowly pour mixed material onto the weld and use a brush, roller, or applicator pad to apply the required thickness of coating to the field joint. Cover at least 2" (5 cm) of the adjacent coating.

Note: In order to create a straight edge and neat appearance, tape may be applied to the left and right 2" (5 cm) beyond cutback and later removed while the coating is still tacky.

7.4 POT LIFE

The pot life of Series 423 at 75°F (24°C) is 15 minutes.

8.0 CLEANUP

Clean immediately after use with No. 4 Thinner or MEK.

9.0 TOUCH-UP & REPAIR

- If removing blisters, cut back to sound coatings or substrate.
- If the blister has uncured material, remove all resins by scraping then wipe with solvent such as MEK or xylene to remove all uncured resin.
- If the steel substrate is exposed, prepare the steel in accordance with SSPC-SP11. Scarify and feather the edges 2-4 inches (5-10 cm) around the area to be repaired with wire cup brushes attached to angle grinders.
- Wipe the area to be coated with MEK and allow to dry.
- Series 423 should be applied at the specified thickness to the properly prepared, clean, dry, and contaminant-free surface.
- Refer to the product data sheet for proper mixing, application and cure instructions.

10.0 HEALTH & SAFETY

Series 423 is for industrial use only and installed by qualified coating and lining application specialists. Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Safety Data Sheet for important health and safety information prior to the use of this product. Keep out of the reach of children.