IMPREGLON® 522M

COATING FOR CORROSION CONTROL IN POTENTIALLY ABRASIVE/EROSIVE ENVIRONMENTS

Introduction

IMPREGLON® 522M is made up of two distinct layers with unique and complementary properties. It is designed specifically for corrosive environments with elevated susceptibility to physical damage.

IMPREGLON® 522M combines the toughness of a nickel phosphorous-plated base coat (ENC) with the unique corrosion and release properties of a sealing organic topcoat (IMPREGLON® 222M). The IMPREGLON® 522M coating system can be applied in a range of thicknesses depending on the severity of the service, and subject to tolerance considerations.

IMPREGLON® 522M reduces or eliminates the need for:

- Corrosion resistant alloys
- Chemical treatments
- Liners
- High-build coatings

Dual Benefit

The dual layer coating system combines the unique properties of each layer to create a situation where the whole is greater than the sum of the parts.

The IMPREGLON® 222M Topcoat compensates for any defects in the ENC:

Improved Protection - Any imperfections (e.g. porosity) in the ENC layer are covered by the IMPREGLON® 222M

Enhanced Hardness - ENC's properties are enhanced by the Impreglon process, as the ENC is effectively "heat treated" during the Impreglon process, improving both corrosion and wear resistance (hardness)

Improved QA - The adhesion of the ENC layer is tested during the application of IMPREGLON® 222M. As part of the preparation for the application of IMPREGLON®222M the ENC is cleaned by media blasting to create a profile. Areas with poor adhesion will blister or flake off during this process. This allows for the part to be re-plated prior to fluoropolymer topcoat application, avoiding a costly field failure

The ENC Reciprocates:

Second Line of Defense - Any undetected imperfections in the IMPREGLON® 222M are protected by the underlying layer of nickel. Should the IMPREGLON® 222M be damaged by erosion, abrasion or mechanical damage, the ENC continues to protect the substrate

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The chart below highlights how the two coatings complement each other (X indicates superior performance).

	Corrosion Resistance	Adhesion	Abrasion Resistance	Release Properties	Hardness	Flexibility	Erosion Resistance	Low Coefficient of Friction	Wear Resistance
Electroless Nickel	X	X	X		X		X		X
IMPREGLON 222M	X	X		X		X		X	

Track Record

IMPREGLON® 522M has proven itself in severe service wells throughout North and South America for over 10 years. Impreglon Coatings, incorporated in 1974, is North America's leading applicator of thin-build fluoropolymer coatings for the production segment of the petroleum industry.

Typical Applications

- Wellhead Equipment
- ANSI Valves

Recommended Services

Corrosion*	H_2S, CO_2, Chlorides
Deposition	Asphaltenes, Scales, Sulphur
Erosion	High Flow Wells
Abrasion	wells with potential for sand and/or other abrasives in the production or injection stream

*See IMPREGLON® 222M data sheet for more information

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Physical Properties

Thickness Range	IMPREGLON® 222M	1.25 – 2.5 mils / 0.00125" – 0.0025" / 31.75 – 63.5 micron
	ENC	1.5 – 5 mils / 0.0015" – 0.005" / 38.1 – 127 micron
	Combined	2.75 – 4.0 mils / 0.00275" – 0.004" / 69.85 – 127 micron
Maximum Operating Temperature	IMPREGLON® 222M	430˚F (221 C) Continuous
	ENC	750˚F (400 C)*
Hardness	IMPREGLON® 222M	60 Shore D
	ENC	R_c 68
Salt Spray Test - ASTM B117-64	IMPREGLON® 222M	1,000+ hours @ 5% concentration
	ENC	5,000+ hours @ 5% concentration
Colour	IMPREGLON® 222M	Red
	ENC	Yellow Metallic
	As Coated	Red

* Hardness of heat-treated ENC begins to degrade beyond this temperature

NOTE: The information presented is based on the research and understanding of Impreglon Coatings. For new, unproven applications, we recommend lab testing, followed by a field trial, in order to ensure your complete satisfaction. Impreglon Coatings is the registered owner of the IMPREGLON® trade name in Canada and the exclusive applicator of IMPREGLON® coatings.