



MADISON CHEMICAL INDUSTRIES INC.

Protective Coatings for Marine Applications

Product Selector Guide



www.MadisonChemical.com





Welcome to Madison Chemical

Madison Chemical Industries is a technology leader in the development and marketing of “Infrastructural Coatings”™ – ultra high performance coatings that protect and preserve the marine infrastructure upon which our society depends. With over 35 years of experience on four continents, Madison has evolved into a mainstream supplier to many industries including all aspects of the storage, transmission and processing of both potable water and wastewater.

From our roots supplying coatings to North America’s largest manufacturers of storage tanks and water/waste-water pipe, Madison has established a reputation of protecting infrastructure in the harshest imaginable environments. Marine environments are unforgiving and relentless. Protecting a ship, drilling rig, or on-shore facility demands the best possible technology. Madison Chemical delivers it with our family of MariThane marine grade coatings.

Technology Leaders

We are a technology leader all the way, with over three decades of breakthroughs:

- 1973: First polyurethane tank coatings
- 1982: First polyurethane pipeline coatings
- 1989: First polyurethane lining to receive NSF listing for potable water service
- 1998: Permanent Anti-Microbial (AM) MicroSpear™ Technology
- 2001: Ceramic (CM) polyurethanes for highly abrasive conditions
- 2008: Three new, multi-purpose metal coating systems

Technical and Project Services

Our technical service specialists are highly trained and are NACE certified. We recruit a skilled network of independent applicators to guarantee superior product performance. To become a Madison Approved Applicator, a coating contractor must undergo rigorous training to ensure that they are experts in surface preparation, product application, equipment service, spray techniques and troubleshooting. Every member of our in-house technical service team has years of experience, so outstanding support is just a phone call away.



To learn more about Madison’s new products, visit www.MadisonChemical.com



Performance

Unrivalled handling and performance characteristics allow Madison's coating products to meet the demands of an incredible array of applications. A wide variety of coatings are available for virtually every kind of substrate encountered in the marine industry, including steel, ductile iron and concrete. Many of Madison's coatings achieve adhesion in excess of 2,000 p.s.i., more than twice that of the competition. Coated surfaces are so smooth that the coefficient friction rivals that of polyethylene. Impact resistance values compare to the best in the industry. Chemical resistance is proven by 30 years of real-world experience and hundreds of long-term laboratory immersion tests.

Some of the leading edge handling characteristics you can expect from Madison include¹:

- Curing at virtually any temperature, winter and summer
- Non-flammable, solvent free and intrinsically safe
- Self-priming direct to metal systems
- Application in a single multi-pass coat
- Setting times from seconds to hours
- Return to service in hours
- Easy touch-up and repair
- D.O.T. rated as "non-hazardous"

(1) Not all the above features apply to every product.

Important performance advantages include:

- Superior adhesion
- Resistance to chemical attack
- Resistance to gouging and abrasion
- Flexibility and resilience to embrittlement
- Inert when cured; no risk of 'tainting' water supply
- Impermeability
- Resistance to disbondment and undercutting
- Several national and international approvals
- Special versions with anti-microbial and/or ceramic modified modifications for additional performance protection

Quality

Madison products are designed to last for decades, even in the most aggressive environments, and we have the case studies and technical data to prove it. In addition to numerous approvals from 3rd party tests, UL, AWWA, and NSF, we are also an ISO 9001:2008 certified facility.

At Madison we don't simply manufacture and ship coating products. We provide a complete package of coating services designed to satisfy the expectations of our customers. We go beyond the norm to provide our customers with quality, service, and innovation.



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Application	Substrate	Service Req.	Basecoat/ Primer	Maincoat/ Topcoat	Total DFT Target (mils)	Surface Prep'n	System	Description
Ship Hull Expterior	Steel	General Purpose		MariThane II Multi	25	SSPC-SP10	MAR-150 MAR-155	Versatile plural component fast set polyurethane coating. Available in AM and CM versions.
				MariThane 'S'	25	SSPC-SP10	MAR-600	Easy to use, 'Single component plus catalyst system'. 2 - 3 coats needed. Available in AM and CM versions.
		Heavy to Severe Service		MariThane 3000	30-40	SSPC-SP10	MAR-455	Superior plural component fast set polyurethane coating. Highest resistance to water permeation and undercutting corrosion. For highest performance apply 40 mils. Available in AM and CM versions.
		UV stable	MariThane Liquid Zinc 3-4 mils	MariThane 1:4 Aliphatic 2 coats of 3-5 mils each	9-14	SSPC-SP10	MAR-465	Easy to use, advanced zinc-rich primer, (formulated with aluminum flake and micaceous iron oxide) with topcoat of 'mix and apply' high performance UV stable acrylic polyurethane. General purpose.
			MariThane II Multi 25 mils	MariThane 1:4 Aliphatic 4-6 mils	29-31	SSPC-SP10	MAR-460	'Never go back to bare metal' for maximum performance. Refresh topcoat every 8-10 years for maximum longevity.
Ship Super-structure and Decks	Steel	UV stable	MariThane Liquid Zinc 3-4 mils	MariThane 1:4 Aliphatic 2 coats of 3-5 mils each	9-14	SSPC-SP10	MAR-465	Easy to use, advanced zinc-rich primer, (formulated with aluminum flake and micaceous iron oxide) with topcoat of 'mix and apply' high performance UV stable acrylic polyurethane. General purpose.
			MariThane II Multi 25 mils	MariThane 1:4 Aliphatic 4-6 mils	29-31	SSPC-SP10	MAR-460	'Never go back to bare metal' for maximum performance. Refresh topcoat every 8-10 years for maximum longevity.
Storage Holds and Tanks	Steel	NSF 61 and UL compliance for potable water and foodstuffs		MariThane II PW Ultra	20	SSPC-SP10	MAR-250	Superior plural component fast set polyurethane coating designed for potable water and dry foodstuffs contact.
			Dry goods and liquids		MariThane II Multi	20	SSPC-SP10	MAR-150 MAR-155
				MariThane 3000	30-40	SSPC-SP10	MAR-455	Designed for maximum protection against abrasive solids and aggressive fluids and chemicals.
		Ballast		MariThane II Multi	25	SSPC-SP10	MAR-150 MAR-155	Versatile plural component fast set polyurethane coating. Available in AM and CM versions.
				MariThane 'S'	25	SSPC-SP10	MAR-600	Easy to use, 'Single component plus catalyst system'. 2 - 3 coats needed. Available in AM and CM versions.



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Application	Substrate	Service Req.	Basecoat/ Primer	Maincoat/ Topcoat	Total DFT (mils)	Surface Prep'n	System	Comments
Dockside Facilities	Steel	General Immersion	N/A	MariThane II Multi	20	SSPC-SP10	MAR-150 MAR-155	As previously.
			N/A	MariThane 'S'	20	SSPC-SP10	MAR-600	As previously.
		UV stability	MariThane II Multi (20 mils)	MariThane 1:4 Aliphatic (5 mils)	25	SSPC-SP10	MAR-460	Highest performance for extended service in severe conditions.
			MariThane Liquid Zinc (6 mils)	MariThane 1:4 Aliphatic (6 mils)	12	SSPC-SP6	MAR-465	Suitable for moderate to heavy duty service.
			MariThane Aluminized Primer (4 mils)	MariThane PC Aliphatic (4 mils)	8	SSPC-SP6	MAR-470	Suitable for mild to moderate exposure; MariThane Aluminized Primer and PC aliphatic are easy to use precatalyzed products (apply directly from container).
Pilings	Steel	General Immersion	N/A	Piling Pro	25	SSPC-SP10	MAR-700	A fast set, 1:1 ratio high performance polyurethane coating specifically formulated for pilings of all designs and immersion in all fresh and sea water applications. Available in CM.
		UV Stability	Piling Pro (25 mils)	MariThane 1:4 Aliphatic (5 mils)	30	SSPC-SP10	MAR-750	For applications where UV resistance is needed; CM version recommended for applications where high abrasion resistance is required.
	Concrete	General or Optional UV stability	MG-201 plus Piling Pro (40-50 mils)	OPTIONAL MariThane 1:4 Aliphatic (8 mils)	50-60	SSPC-SP13	MAR-755	MG-201 seals the concrete and primes surface; Piling Pro thickness is higher for rough concrete; CM version recommended for applications where high abrasion resistance is required.
Aquaria	Concrete	Immersion	MG-201 plus MariThane II Multi (40-50 mils)	MariThane 1:4 Aliphatic (AM) (8-10 mils)	50-60	SSPC-SP13	MAR-800	For fresh and sea water aquaria. MG-201 seals the concrete and primes surface; Multi thickness is higher for rough concrete; AM version recommended to minimize opportunity for microbiological induced corrosion.
Off shore platforms	See Ship Hull Exterior and Superstructure for Options							





Product and Technology Descriptions

MariThane 1:4 Aliphatic

A high performance, Mix-and-Apply polyurethane for exterior exposure where superior colour and gloss stability is required.

MariThane II Multi

A multi-purpose 100% solids, 1:1 fast set polyurethane protective coating for a variety of marine environments.

MariThane II PW Ultra

A high performance 100% solids, 1:1 fast set polyurethane protective coating designed for potable water immersion service. NSF 61 certified.

MariThane 3000

A superior performance 100% solids, 1:1 fast set polyurethane protective coating designed for the harshest marine environments.

MariThane Aluminized Primer

An easy to use single component polyurethane primer loaded with aluminum flakes for use in moderate exposure conditions.

MariThane Liquid Zinc

A surface tolerant, Mix-and-Apply (single-component-plus-catalyst) polyurethane primer/topcoat containing several corrosion resistant technologies (aluminum flakes, micaceous iron oxide and zinc powder) for harsh conditions.

MariThane PC Aliphatic

An easy to use, Pre-catalyzed (single component) polyurethane topcoat designed for use in moderate exterior exposure conditions.

MariThane 'S'

A versatile, Mix-and-Apply (single-component-plus-catalyst) polyurethane coating that offers excellent performance in a wide variety of marine applications.

PilingPro

A superior performance, 100% solids, 1:1 fast set polyurethane specifically designed for steel pilings used in a variety of fresh and sea water marine environments.

MG series

'Mix and Apply' polyurethane modified epoxies. MG-201 is a primer/sealer suitable for concrete.

MicroSpear AM (Anti-Microbial) Technology

A proprietary, permanent anti-microbial modification. Suitable for use in all water immersion applications for prevention of microbial induced corrosion (MIC).

NanoShield CM (Ceramic Modification)

Ceramic nanospheres providing the highest level of abrasion resistance.

NSF 61 (National Sanitation Foundation)

Specification governing products in contact with potable water.





Systems

SYSTEM MAR-150

Marithane II Multi High Build. One multi-pass coat using standard plural component equipment. Fast set. Near white metal blast.

SYSTEM MAR-155

Marithane II Multi, As above but using delayed set. Near white metal blast.

SYSTEM MAR-250

Marithane II PW Ultra One multi-pass coat, standard plural component equipment. Near white metal blast.

SYSTEM MAR-455

Marithane 3000 One multi-pass coat, using standard plural component equipment. Near white metal blast.

SYSTEM MAR-460

Marithane 1:4 Aliphatic Topcoat. Apply by brush, roller, single component or pressure pot spray equipment. Marithane II Multi base coat. Near white metal blast.

SYSTEM MAR-465

Marithane 1:4 Aliphatic Topcoat. Marithane Liquid Zinc Primer. Single component plus catalyst system ('s' system) use C-10 catalyst (slow setting, permits 5-6 wet mils per coat), C-7 catalyst (faster setting, permits 8-10 wet mils per coat) or C-4 catalyst (fastest setting, permits 12-15 wet mils per coat). Commercial blast.

SYSTEM MAR-470

Marithane PC Aliphatic Topcoat. Precatalyzed (all in one container) system. Apply by brush, roller, single

component or pressure pot spray equipment. Marithane aluminized primer. Precatalyzed system. Apply by brush, roller, single component or pressure pot spray equipment. Commercial blast.

SYSTEM MAR-600

Marithane 'S' applied in two to three coats. Use C-10 Catalyst (slow setting, permits 5-6 wet mils per coat), C-7 Catalyst (faster setting, permits 8-10 wet mils per coat) Or C-4 Catalyst (fastest setting, permits 12-15 wet mils per coat). Equipment as in system MAR-460 above. Near white metal blast.

SYSTEM MAR-700

PilingPro. High build in one multi-pass coat using standard plural component equipment. Fast set. Near white metal blast.

SYSTEM MAR-750

Marithane 1:4 Aliphatic Topcoat. PilingPro basecoat. Near white metal blast.

SYSTEM MAR-755

Marithane 1:4 Aliphatic Topcoat (optional). PilingPro basecoat MG-201 polyurethane-epoxy hybrid concrete sealer/primer. Equipment as in system MAR-460 above for MG-201. Concrete blast (SSPC-SP13).

SYSTEM MAR-800

Marithane 1:4 Aliphatic (AM) Topcoat. Marithane II Multi basecoat. MG-201 polyurethane-epoxy hybrid concrete sealer/primer. Equipment as in system MAR-460 above for MG-201. Concrete blast (SSPC-SP13).





General Comments

“One Multi-Pass Coat” refers to the application of several passes, typically in a cross-hatching manner, to achieve the desired build. If sags occur, wait a few seconds between passes.

“Single Component Equipment” means airless pump, hose and gun drawing from a pail or drum.

“Standard Plural Component Equipment” means two component 1:1 airless pump with primary heaters, dual heated hose and gun with in-head mixing.

“Whip End Configuration” means as above but remove in-head mixing type gun and replace with manifold, several feet of standard airless hose and regular airless spray gun.

Always use angular mineral abrasives or steel grit for blasting, never shot. Synthetic grit or slag-based abrasives

may cause contamination of surface and must be used with extreme caution. 24 to 32 grit size recommended.

With all systems, “fogging” one or two mils on corners and edges improves performance.

1 mil equals .001 inches and is approximately equal to 25 microns.

This Product Selector Guide is not intended to be definitive.

In some cases a clear choice may not be immediately obvious, or more than one option is available. Detailed technical data sheets, specifications and application instructions are available to assist in choosing a suitable system, or contact a Madison representative for further guidance in making your selection.

Note: The following are Trademarks and/or Registered Trademarks of Madison Chemical Industries Inc.:
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