



B
U
L
L
E
T
I
N

**MADISON CHEMICAL
INDUSTRIES INC.**

InfoTech Bulletin #26

**Cost Savings with No-Blast
Protective Coating Systems**
Atmospheric Service

February 2010



Madison Chemical Industries Inc.

“The World Leader For Infrastructural Coatings”™

490 McGeachie Drive Milton, Ontario, Canada L9T 3Y5

Phone (905) 878-8863 Fax (905) 878-1449

Email: sales@madisonchemical.com Web Site: www.madisonchemical.com

Cost Savings with No-Blast Protective Coating Systems Atmospheric Service

In the coating of steel structures, there has always been a strong desire to find an alternative to the capital costs, operating expenses, labor costs, invasiveness and safety issues associated with abrasive blasting. Our new technology now makes it possible to replace abrasive blasting with a non-hazardous surface conditioner for most exterior, light to heavy duty, non-immersion service conditions. This InfoTech Bulletin compares the cost of three traditional systems with three systems based on the new Madison approach.

ASSUMPTIONS

1. Traditional system surface preparation is costed as a non-automated commercial blast (SSPC SP-6) using SSPC numbers ⁽¹⁾
2. Traditional system consists of either a 2-coat system (6 mils total - light to moderate duty) or a 3-coat system (8 mils total - moderate to heavy duty). These include:
 - a- An epoxy primer/polyurethane topcoat, solvent borne system
 - b- An alkyd primer/topcoat, waterborne system
 - c- A zinc-rich primer/epoxy midcoat/polyurethane topcoat solvent borne system
3. The new Madison systems are designed to be applied over surfaces conditioned with FerroGrip™, a proprietary surface conditioner/adhesion promoter. The three systems are:
 - a- An acrylic primer/polyurethane topcoat waterborne system
 - b- A next-generation zinc-rich primer/polyurethane topcoat solvent borne system
 - c- A plural component, one high-build coat, solvent-free polyurethane
4. Prices per gallon for traditional systems are “street” prices and prices per dry mil foot are based on those prices and published solids content (except for Traditional System 2 which uses JPCL data). Typically this will provide a value somewhat below SSPC figures reported in JCPL. If those figures were used, the cost of traditional systems would be somewhat higher. The prices for the new systems are based on published list prices; volume discounts will reduce these numbers somewhat. A “Cost-Per-Dry-Mil” chart which facilitates calculation of cost per dry mil is available on request. Ask for InfoTech Bulletin No. 9.
5. Labour and equipment operating cost figures are also based on SSPC figures ⁽²⁾
6. Overbuild, overspray and waste are assumed to be a total of 30% of theoretical coating cost.
7. Overhead and profit are assumed to be a total of 30% of surface preparation, coating and application costs.

(1) Journal of Protective Coatings and Linings, Volume 25 / Number 7, July 2008, pp. 32-36

(2) Around 35 cents per square foot per coat for single component products and 50 cents per square foot for 2-pack products. For one-coat plural component purposes (see New Technology No. 3), we have used a labor figure of 70 cents to account for the extra set-up and shutdown costs associated with using plural component equipment.

TABLE 1: Comparison of Systems for Light to Moderate Duty Exterior Applications

Item	The Math	Traditional System 1	Traditional System 2	New Tech. System 1
		Epoxy primer Polyurethane topcoat (Solventborne)	Acrylic latex primer Acrylic latex topcoat (Waterborne)	Acrylic primer Polyurethane topcoat (Waterborne)
		3 mils each Total: 6 mils	3 mils each Total: 6 mils	3 mils each Total: 6 mils

SURFACE PREP'N				
Abrasive blast	Per sq. ft.	0.940	0.940	-
Surface Conditioner	Per sq. ft.	-	-	0.310
	Surface Preparation Sub Total	0.940	0.940	0.310

COATINGS				
Primer	Per sq. ft. @ mil thickness	0.162	0.207	0.203
Topcoat	Per sq. ft. @ mil thickness	0.186	0.207	0.309
	Coating Sub Total	0.348	0.414	0.512

APPLICATION				
Losses (waste/overspray)	30% of coating sub total	0.104	0.124	0.154
Labor/Equipment	Per sq. ft. @ 2 coats	1.000	0.700	0.850
	Appl'n Sub Total	1.104	0.824	1.004

OVERHEAD / PROFIT	30% of above totals	0.718	0.653	0.548
--------------------------	---------------------	-------	-------	-------

Total Applied Cost		3.110	2.831	2.374
---------------------------	--	--------------	--------------	--------------

TABLE 2: Comparison of Systems for Moderate to Heavy Duty Exterior Applications

Item	The Math	Traditional System 3	New Tech System 2	New Tech System 3
		Zinc rich primer 2 mils Epoxy mid 3 mils Polyurethane top 3 mils	Next Generation Zinc rich primer 4 mils Polyurethane top coat 4 mils	100% solids, fast set high build Polyurethane Single coat
		Total: 8 mils	Total: 8 mils	Total: 8 mils

SURFACE PREP'N				
Abrasive blast	Per sq. ft.	0.940	-	-
Surface Conditioner	Per sq. ft.	-	0.310	0.310
	Surface Preparation Sub Total	0.940	0.310	0.310

COATINGS				
Primer	Per sq. ft. @ mil thickness	0.118	0.232	-
Midcoat	Per sq. ft. @ mil thickness	0.162	-	-
Topcoat	Per sq. ft. @ mil thickness	0.186	0.320	0.568
	Coating Sub Total	0.466	0.552	0.568

APPLICATION				
Losses (waste/overspray)	30% of coating sub total	0.140	0.166	0.170
Labor/Equipment	Per sq. ft. @ req'd no. of coats	1.500	1.000	0.700
	Appl'n Sub Total	1.640	1.166	0.870

Overhead / Profit	30% of above totals	3.046	0.608	0.525
--------------------------	---------------------	-------	-------	-------

Total Applied Cost	3.960	2.636	2.273
---------------------------	--------------	--------------	--------------

SUMMARY

If we look only at total coating cost (including waste), the picture looks like this:

Traditional System 1	\$ 0.452
Traditional System 2	\$ 0.538
Traditional System 3	\$ 0.606
New Technology System 1	\$ 0.666
New Technology System 2	\$ 0.718
New Technology System 3	\$ 0.738

But, if we look at total applied costs, the picture looks like this:

Traditional System 1	\$ 3.11
Traditional System 2	\$ 2.83
Traditional System 3	\$ 3.96
New Technology System 1	\$ 2.37
New Technology System 2	\$ 2.64
New Technology System 3	\$ 2.28

In brief, the coating component is about 32% (\$0.17/sq.ft.) more expensive on average for the new Madison technology ⁽¹⁾

But...

The total applied cost is about 36% (\$0.87/sq.ft.) more expensive for the *old technology* ⁽¹⁾

And finally...

The coating that costs the most per gallon is the one that provides the lowest overall system cost ⁽¹⁾

The Madison products are available now:

System 1 is FusionClad[®] - Advanced waterborne coatings for industrial maintenance applications

System 2 is Alumizinc[®] 'S' - 'Next generation' Zinc Rich Primer with AcrylaThane[®] acrylic aliphatic polyurethane topcoat

System 3 is Tufsheen[®] - Direct to metal, 100% solids, high build aliphatic polyurethane with adhesion promoter

For specific product details, please refer to the Product Profiles, Technical Data Sheets and Application Instruction Bulletins.

(1) Average coating cost for traditional systems is \$0.532 and for Madison is \$0.707. Average total applied cost for traditional systems is \$3.30 and for Madison is \$2.43.