

MADISON CHEMICAL INDUSTRIES INC.

COST COMPARISON BULLETIN

COATING OF GALVANIZED AND WEATHERING STEEL STRUCTURES BLASTED SURFACE COATED WITH TRADITIONAL COATINGS

Vs.

GALVAGRIP SURFACE CONDITIONER AND GALVACLAD TOPCOAT

April 2009

In the coating of galvanized structures, there has always been a strong desire to find an alternative to the capital costs, operating expenses, labour costs and invasiveness associated with abrasive blasting. It is well known that blasting compromises the zinc layer but, until now, there was no alternative in critical applications where longevity is important and high adhesion is therefore critical. New technology now makes it possible to replace abrasive blasting with a non-hazardous surface conditioner for virtually all service conditions. This bulletin compares the cost of two traditional systems (coal tar epoxy and generic quick set polyurethanes) with GalvaClad Aromatic; the most commonly used of the GalvaClad series of products.

ASSUMPTIONS

1. Traditional system surface preparation is costed as a non-automated commercial blast (SSPC SP-6) using Steel Structures Painting Council numbers (see Journal of Protective Coatings and Linings, July 2008, page 33, table 1) for recyclable abrasives. Specifically this is \$.85 plus 20% or just over \$1.00. The cost will be about 10% more where non-recyclable abrasives are used (i.e., about \$1.10).
2. Traditional system consists of either a 2-coat coal tar epoxy system (mild to moderate service) or 1 coat quick set polyurethane (moderate to heavy duty service).
3. GalvaClad is designed to be applied over surfaces cleaned and etched with GalvaGrip, a Surface Conditioner fortified with Madison AP-50 Adhesion Promoter.
4. Prices per gallon for traditional systems are based on "street prices", which are lower than the figures published in the JPCL article. If the JPCL figures are used, the cost comparison would favour the GalvaClad system somewhat more. With epoxy, a selling price of \$18.00 per gallon and a solids content of 70% are used. With the traditional quick set urethane, a selling price of \$36 per gallon and a yield of 100% are assumed. With GalvaClad, a selling price of \$52 per gallon and a solids content of 100% are used. With GalvaGrip Surface Conditioner, the cost-per-square-foot figure in the charts is the selling price divided by the square footage covered per gallon, using the published selling price. When GalvaGrip is sold as part of a package deal together with GalvaClad, the cost is less (talk to your Madison rep for details). The prices for the new systems are based on published list prices; volume discounts will reduce these numbers by up to 10%. All in all, the savings estimates in favour of the GalvaClad system are somewhat conservative. A "Cost-Per-Dry-Mil" chart which facilitates calculation of cost per dry mil is available on request. When inquiring, ask for Madison InfoTech Bulletin No. 9.
5. Labour and equipment operating cost figures are based on SSPC figure, namely 51 cents per square foot per coat for two part epoxies and 54 cents per square foot for 2-pack polyurethanes.
6. Overbuild, overspray and waste are assumed to be a total of 30% of theoretical coating cost for all systems.
7. Overhead and profit are assumed to be 30% of all of the above direct costs.

TRADITIONAL SYSTEM NO. 1

System: Coal tar epoxy, two coats, average thickness 20 mils

Product	The Math	Extension
Abrasive blast	\$1 per square foot	\$ 1.00
Coal tar epoxy	1.6 cents x 20 ⁽¹⁾	\$.32
Waste / overspray	30% of the above	\$.10
	Sub-Total for coating	\$.42
Labour	2 coats at 51 cents	\$ 1.02
	Sub Total	\$ 2.44
Overhead and profit	30% of the above total	\$.73
	Grand Total	\$ 3.17

(1) Price in pennies per mil foot multiplied by minimum number of dry mils. See Cost-Per-Dry-Mil chart.

TRADITIONAL SYSTEM NO. 2

System: Generic quick set polyurethane, one coat, average thickness 20 mils

Product	The Math	Extension
Abrasive blast	\$1 per square foot	\$ 1.00
Polyurethane	2.25 cents x 20 ⁽¹⁾	\$.45
Waste / overspray	30% of the above	\$.13.5
	Sub-Total for coating	\$.58
Labour	1 coat at 54 cents	\$.54
	Sub Total	\$ 2.12
Overhead and profit	30% of the above total	\$.64
	Grand Total	\$ 2.76

(1) Price in pennies per mil foot multiplied by minimum number of dry mils. See Cost-Per-Dry-Mil chart.



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NEW TECHNOLOGY SYSTEM

System: GalvaGrip and GalvaClad, one coat, average thickness 20 mils

Product	The Math	Extension
GalvaGrip Surface Conditioner, including labor ⁽¹⁾	35 cents per square foot	\$.35
GalvaClad topcoat	3.4 cents x 20 ⁽²⁾	\$.68
Waste / Overspray	30% of the above	\$.20
	Sub Total for coating	\$.88
Labour	1 coat at 54 cents	\$.54
	Sub Total	\$ 1.77
Overhead and profit	30% of the above total	\$.53
	Grand Total	\$ 2.30

(1) Assumes \$54 per gallon, 320 square feet coverage, (4 cents per mil foot x 5 mils equals 20 cents, plus 15 cents in labour to apply GalvaGrip Surface Conditioner / Adhesion Promoter

(2) Price in pennies per mil foot multiplied by minimum number of dry mils. See Cost-Per-Dry-Mil chart.

SUMMARY

If we look only at coating costs, the picture looks like this:

Traditional System No. 1	\$.42
Traditional System No. 2	\$.58
New Technology System	\$.88

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

Traditional System No. 1	\$ 3.17
Traditional System No. 2	\$ 2.76
New Technology System	\$ 2.30

Although the coating component of the new technology is twice as much as coal tar epoxy⁽¹⁾, the overall applied cost is the lowest of the group. The GalvaClad system is about 45 cents per square foot less than generic polyurethane and more than 80 cents less than a two coat epoxy system.

Speed of throughput (cure to handle 15 minutes compared to 24 hours with epoxy) will add further savings in favour of the quick set one coat systems.

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(1) After allowing for new technology being solvent-free.



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