



## Performance Coatings for Architecture

Extending the lifecycle of a coated surface is addressed through the proper selection of performance coatings and the use of knowledgeable applicators.

In the 1980s facility operators, owners and architects started using epoxy mastics and high-build polyurethanes for structural steel, galvanized steel and aluminum components. The desire for corrosion protection, abrasion resistance, ultra-violet resistance and longer coating lifecycles moved traditional industrial coatings into the commercial architectural market. In the 1990s epoxy-siloxanes were added to the group of products being specified and used for facilities.

Today performance coatings are used on metal components from structural steel to light poles to door frames. The coatings usually consist of an epoxy primer with a polyurethane topcoat, zinc rich epoxy primer with a polyurethane topcoat or one coat of epoxy-siloxane. The savings are gained through the significant extension of the lifecycle of the coating as well as the overall reduction of labor as the coating system simply performs three to five times longer than traditional architectural products on steel and metallic substrates.

General Electric sells its gas turbines by telling customers that maintenance painting will not be required for twenty years on the exterior of equipment housings. The system General Electric uses is a zinc rich epoxy primer and an epoxy-siloxane topcoat. San Onofre Nuclear Generating Station has reduced its painting requirements significantly on structural steel by switching to a system consisting of a mastic epoxy topcoated with an epoxy-siloxane. San Onofre's ocean-front location is one of the most corrosive environments in the world and the savings are demonstrated by the minimal amount of touch up the facility requires.

In the architectural environment these same coatings that withstand the corrosion of offshore platforms and arctic pipelines can work to provide an extended lifecycle and reduced maintenance costs while meeting aesthetic appearance requirements. Structural and metal surfaces in shopping centers such as Newport's Fashion Island and Escondido's Promenade; cultural sites such as the Getty, the new Water Plus Life Museum at Diamond Lake, Meng Hall at Cal State Fullerton and office buildings such as 6300 Wilshire are all protected with performance coatings.

Coating	Cost/gallon	Sq Ft Cov.	Cost/Sq. Ft.	Exterior Lifecycle	Labor	Coats
Synth. Alkyd Primer	\$35.00	300	\$0.116	Primer	\$0.916	1
Alkyd Topcoat	\$25.00	300	\$0.083	2 years	\$1.832	2
<i>Alkyd System</i>			<i>\$0.282</i>	<i>2 year topcoat</i>	<i>\$2.748</i>	<i>3</i>
Acrylic	\$28.00	290	\$0.094	5 years	\$1.832	2
<i>Alkyd Acrylic System</i>			<i>\$0.304</i>	<i>5 year topcoat</i>	<i>\$2.748</i>	<i>3</i>
Epoxy Mastic	\$38.00	266	\$0.14	Primer	\$0.916	1
High Build Urethane	\$70.00	230	\$0.30	10 years	\$0.916	1
<i>Epoxy / HB Urethane</i>			<i>\$0.44</i>	<i>10 years</i>	<i>\$1.832</i>	<i>2</i>
Thin Film Urethane	\$94.00	400	\$0.23	14 years	\$0.916	1 or 2
<i>Epoxy / TF Urethane</i>			<i>\$0.37</i>	<i>14 years</i>	<i>\$1.832</i>	<i>2 or 3 coats</i>
<i>Epoxy-Siloxane</i>	<i>\$170.00</i>	<i>289</i>	<i>\$0.58</i>	<i>20 years</i>	<i>\$0.916</i>	<i>1</i>
<i>Epoxy/ Epoxy-Siloxane</i>			<i>\$0.72</i>	<i>20 years</i>	<i>\$1.832</i>	<i>2</i>

System based on 3,000 square foot application on prepared metal substrate with labor rate of \$55.00 per hour in 2006 dollars.

Alkyd System	Total cost over twenty years with labor \$27.73 per square foot*
Alkyd / Acrylic System	Total cost over twenty years with labor \$9.96 per square foot*
Epoxy / HB Urethane	Total cost over twenty years with labor \$3.49 per square foot*
Epoxy / TF Urethane	Total cost over twenty years with labor \$3.35 per square foot*
Epoxy-Siloxane	Total cost over twenty years with labor \$1.50 per square foot*
Epoxy / Epoxy-Siloxane	Total cost over twenty years with labor \$2.55 per square foot*

\*Data compiled by Nye Miller of Ameron Performance Coatings (714) 337-1953 and Doug Hampton of Wilson and Hampton (714) 772-5091 and is based on lifecycle estimates of performance life of generic resin systems in a typical southern California architectural environment. [www.pacificsouthwest.net](http://www.pacificsouthwest.net) and [www.wilsonhampton.com](http://www.wilsonhampton.com)