

Shop Applied Coatings Reduce Project Costs at the Mojave Solar Project

The Mojave Solar Project is a solar thermal power facility currently under construction in the Mojave Desert, just north of Barstow, California. Owned by Abengoa Solar, the plant is estimated to cost more than \$1.6 billion and is scheduled to be completed in late 2014. Once complete, the plant will provide sustainable energy for 54,000 California residents. In order to generate this power, the project covers roughly three square miles with solar collectors that are 18 feet wide and 410 feet long.¹

Mobile Pipe Lining and Coating, Inc., of Adelanto, California, coated the above-ground pipe system designed to convey the heat transfer fluid that drives the plant's steam turbines.

Project Details and Project Summary

Project Name	Mojave Solar Project
Location and Timing	Barstow, CA – December 2013
Pipe Size and Length	4,200 LF of 4" – 54" fabricated pipe spools
Paint System	8 mils Carboline® Carboguard® 60 epoxy & Carbothane® 134HG polyurethane
Customer	Murray Company/ Abengoa Solar

The economic advantages of using a shop coating applicator are becoming increasingly evident to field contractors such as Murray Company, the piping contractor on this project. The controlled environment of a shop that is designed specifically for pipe coating and lining results in higher quality coatings, better control of schedule, and less rework. For these reasons, operators and contractors are increasing their use of shop applied coatings and moving away from field applicators for above-ground piping projects.

Epoxy polyimides, such as the Carboline® Carboguard® 60 system, are frequently specified in abusive environments such as refinery applications for the protection of tanks, vessels, and pipelines, as well as other industrial applications such as power plants. Carboguard® coatings are versatile, corrosion-resistant coatings that can be applied over steel or zinc primers. Additionally, glass flake or micaceous iron oxide may be added for improved strength. In general, polyimide epoxies are considered more resilient and flexible while giving better weather resistance than amine-cured epoxies. Their cure is, however, temperature dependent and they have slower curing times than more common amine epoxies. Moreover, it is widely known that epoxies chalk with UV exposure. For that reason aliphatic polyurethanes such as Carbothane® 134 are often used for added protection against UV aging and to create a long-lasting gloss finish for the exposed pipe system.

“Mobile Pipe was incredibly easy to work with and when we were pushed to improve our delivery time by the contractor, Mobile Pipe was there to put in extra hours and ensure on-time delivery. They saved us thousands of dollars with their relentless commitment to serve their customers’ needs.”

Murray Company



Figure 1: Finished 54" Header Assembly. This special project consisted of over 225 special spool pieces that were coated with the epoxy and polyurethane.



Figure 2: Mobile Pipe performed quality assurance testing and capped the ends.



Figure 3: Pre-fabricated pieces save time and money allowing the installation process to require fewer welds and less painting in environments where quality is not easily controlled.



Figure 4: Fabricated specials coated and set aside to cure. Mobile Pipe has an enclosed 36,000 ft² facility to control environmental factors and eliminate rework – resulting in on-time deliveries.

References

1. **Abengoa Solar.** Mojave Solar Project. *Abengoasolar.com*. [Online] August 2013. http://www.abengoasolar.com/export/sites/abengoasolar/resources/pdf/Mojave_factsheet_10112013.pdf.

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