NACE TG 441 & 442:

Plastisol – An Emerging Solution for Below and Above Grade Coatings for Utility T&D Structures and Systems.

Jon H. Brasher, President & CTO
Ovante, LLC
Tallahassee, FL Auburn, AL

Patent Pending

www.ovantellc.com

The idea for using plastisol began forming shortly after Hurricane Katrina.

Patent Pending

www.ovantellc.com

What is Plastisol?

How does Plastisol work?

Plastisol consists of pigmented particles of PVC resin suspended in liquid.

Plastisol changes from liquid to solid through heat curing.

During the curing process, these resin particles absorb the liquid, causing the particles to swell and fuse into a non-porous, inert, solid material.

Solve

Create

See

Patent Pending

The Plastisol coating can be applied to almost any shape.

Because the coating cures to form an inert material, it will not react with sunlight or most chemicals, normal/coastal temperatures, or salt water, the way other coatings do.

Plastisol blocks out galvanic corrosion.

Plastisol is also unaffected by a contaminated galvanic coating.

Patent Pending

Solve

Create

See

www.ovantellc.com

Testing:

SWAAT: Touchstone Labs in West Virginia . Testing was for 30 days .

3,280 hours.

ASTM B117: Salt spray

1,080 hours.

Patent Pending

Solve

Create

See

November 2008:

The preceding slides were part of a presentation that was made to the Southern Company, Inc. Pole and Design Committee. At the end of that presentation, the response from the committee chairman was:

"We like this. We have two questions:

"What's the burning temperature?"

"425 to 475 degrees F. Plastisol is also self-extinguishing."

"If we coat a pole from the butt end up to a point 2 feet above ground, will it leak around that upper edge?"

"?"

Solve

Create

See

A test was proposed:

Place coated sections of galvanized fence posts in gravel and subject them to a continuous spray for 30 days in high humidity.

"That sounds like a good test, but we want you to add a sample coated with what we currently use, for comparison."

The test was monitored and approved by Glenn Sollie, PE, Criterium-Sollie Eng.

Patent Pending

Avg. Low Temp: 106.88

Avg. High Temp: 128.20

www.ovantellc.com

Solve

Create

See

At the request of the Pole and Design Committee, additional tests were conducted during July and August of 2009:

Adhesion and Pull-Off tests (TEC Services – Atlanta, GA.)

Adhesion:

Plastisol averaged 270 psi bond strength
(Profile: Galvanized finish, supplied by Valmont)

Polyurethane averaged 395 psi bond strength
(Plate coated and supplied by Sabre)

X-Cut Pull-Off Test:

Plastisol scored perfect 10s … 3 times.

UV Test (Touchstone Labs – Tridelphia, West Virginia)

Sample	Unexposed Gloss	Exposed Gloss	% Loss
Plastisol	36.7 %	35.5 %	3.3 %
Polyurethane	27.1 %	0.5 %	98.2 %

Solve Create See

Patent Pending

www.ovantellc.com

EPRI Testing

After seeing these results, the Pole and Design Committee asked that Plastisol be included in coating evaluations at the EPRI facility in Charlotte, NC.

On November 23rd, 2009, 60 panels were coated with Plastisol at the Charlotte facility. 20 panels were galvanized steel, 20 panels were carbon steel, and 20 panels were repair grade (sandblasted).

In February, 2010, Mr. Neal Murray – Project Manager at EPRI – stated that the Storm Greeter™ Plastisol process had passed the Tier One thresholds for maintenance and repair grade applications.

As of October 2011, Plastisol had received favorable ratings thru the 3rd Tier for immersion applications.

In the past 2 years, testing has also shown that:

Fluctuations in temperature don't affect Plastisol.

Plastisol is not hospitable to marine life.

Solve

Create

See

Patent Pending

www.ovantellc.com

Plastisol Pros & Cons

Pros:

- The thickness can be tailored to match the demands of location and soil type.
- Plastisol doesn't react with most chemicals or with sunlight.
- Plastisol is a great insulator against galvanic corrosion.
- Plastisol is flexible and resilient– it won't crack or split.
- Plastisol comes in a wide range of colors to blend with the environment.
- Testing has shown that Plastisol is a strong coating option.

Cons:

It's new… but not really.

It's always required heat to apply it... until now.

It's hard to repair.

Solve

Create

See

Yeah, but…?

COST - Most of the world's pole & tower manufacturers already have the facilities and equipment in place to coat with plastisol.

SAFETY - Plastisol, in its liquid form, will wash off with soap and water. It will stain clothing

Solve

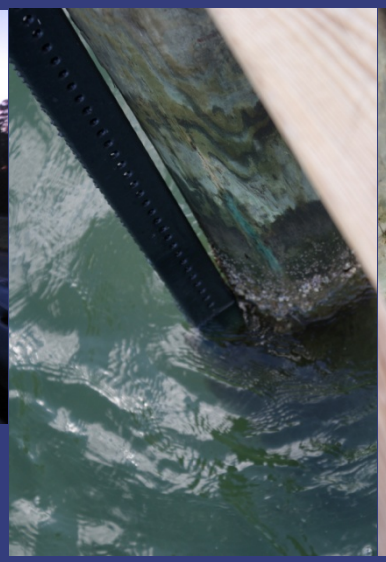
Create

See

Patent Pending

www.ovantellc.com

In October of 2011, the Alabama DOT began testing Plastisol at Perdido Pass in Orange Beach, AL.



In the Gulf of Mexico….

….and along the beach highway.

These Plastisol coated posts will receive a 6-month checkup in March.

Solve

Create

See

Patent Pending

www.ovantellc.com

Possible Benefits of Using Plastisol:

- Plastisol could reduce future maintenance time and cost,

- Using Plastisol could ultimately allow utilities to defer the expense of asset retirement and/or replacement,

- When teamed with an etching primer, Plastisol coating could give new structures – with freshly galvanized surfaces – a head start and better chances of beating corrosive elements.

Solve

Create

See

January of 2012:

Ovante's plastisol application process has been nominated for the NACE/MP Reader's Choice "Innovation of the Year"!

Solve

Create

See

Patent Pending

www.ovantellc.com

Ovante

See, Create, Solve

Jon H. Brasher, CTO & President
Ovante, LLC

Email: jbrasher@ovantellc.com

Office: 334-844-5289
Cell: 334-363-9558

Christopher Campbell, CEO
Ovante, LLC

Email: ccampbell@ovantellc.com

Office: 850-386-4335
Cell: 256-426-6231

www.ovantellc.com