

# Tech Talk Q&A

**Strip and re-dip! The steel substrate must be completely clean for re-galvanizing.**

**By Professor Zinc**

**Q: "Is it possible to take steel which was recently galvanized, and re-galvanize without stripping the old coating off? The problem is bare spots from welding changes."**

A. The short answer is "No". Based on your description of the problem, welding through galvanizing has removed the coating at the weld area and in the surrounding heat affected zone of the weld. Zinc melts at 786°C and during welding produces a voluminous white zinc oxide at about 1000°F. Welding temperatures are in the range of 3-4000°F or higher, depending upon the method.

ASTM allows for repair, but limits the allowable area. The total area subject to renovation on each article shall be no more than 1/2 of 1% of the accessible surface area to be coated on that article, or 36 in.2 per short ton [256 cm2 per metric ton] of piece weight, whichever is less.

The specification further states, "Materials that have been rejected for reasons other than embrittlement are not prohibited from being stripped and re-galvanized and again submitted for inspection and test at which time they shall conform to the requirements of this specification."

## Hot Dip News Fall 2018

The hot dip galvanized coating is formed through a diffusion reaction between iron and zinc and develops a metallurgical bond between the two metals. In order for the iron-zinc alloy to develop the steel substrate must be completely clean. Residual weld fluxes, oils, paint or any other contaminant will result in a bare area that will not galvanize. Attempting to re-galvanize without removing the existing zinc will result in a coating with bare areas and zinc that is not adherent to the pre-existing coating.

Galvanized steel develops zinc oxide on the surface of the material within 24 hours of the galvanizing process. The coating gradually weathers to form zinc hydroxide and finally zinc carbonate. The re-galvanizing process will require that any zinc on the steel surface be removed completely before being re-coated in order to meet ASTM specifications.

**Contact Galvan Industries, Inc.**  
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## Galvan Industries, Inc. Hot Dip News

### Inside:

- *More photos from Chimney Rock project*
- *Galvan celebrates 60th anniversary!*
- *Galvan Rust-Proofs Honolulu Light Rail*



## GALVAN'S WORK ON CHIMNEY ROCK PROTECTS AND BLENDS WITH NATURE'S BEAUTY

Chimney Rock State Park's Outcroppings Trail offers hikers a series of staircases and lookout points threaded through a near-vertical boulder field. The strenuous trail takes hikers to several points of interest including Vista Rock, the Grotto, Subway, Pulpit Rock, and Chimney Rock itself.

After the 491-stair, 315-foot climb to the top, visitors are greeted with a sweeping view of Lake Lure and the Hickory Nut Gorge below.

When improvements and repairs were needed to the many stairways and decks on the trail, Galvan Industries was chosen to rust-proof the supporting steel, helping protect the park's investment and its visitors for decades to come. **See more photos inside.**





## Galvan Rust-Proofs Honolulu Light Rail

Honolulu's 20-mile-long \$8.1 billion light rail line is the biggest public works project in the history of the state. It's being built to last with rust-proofing by Galvan Industries.

The tropical weather and warm ocean breezes in Hawaii are particularly hard on exposed steel, so there was really only one choice for protection against costly corrosion: hot-dip galvanizing.

The tough barrier coating created by the metallurgical bond developed between zinc and steel during the galvanizing process will optimize the project's life and lower lifecycle cost.

Compared to the cost of maintenance, damage and repairs, the initial cost of galvanizing is a very small investment with a large return for the public.

For more information visit our Web site at [www.galvanize.com](http://www.galvanize.com) or call Ben Kelly at (704) 455-5102.

## Galvan Celebrates 60 Years

Galvan Industries, Inc. recently celebrated an historic milestone, 60 years in business. Founded in 1958, Galvan was the first hot dip galvanizing operation in the Carolinas. Current and former employees and customers gathered at the Galvan plant in Harrisburg, NC on Friday, September 28 - Steel Day – for barbecue, music, plant tours, employee awards and raffles.

"It's exciting for me to see Galvan reach the sixty year mark," stated Laurens Willard, president. "The company has certainly surpassed what was envisioned back in the fifties. We've become a trusted partner with dozens of companies in many industries. We have a loyal customer base that relies on the quality of our process, our products and our people."

Thirteen Galvan employees with 15 or more years in the company were recognized with awards for their dedicated service. (Details at [www.galvanize.com](http://www.galvanize.com))

In the 60 years since its founding, Galvan's commitment to quality and investment in plant expansions and improvements have allowed it to become one of the largest capacity contract galvanizers in the Southeast.

### Prize Winners

Two large prizes were given away in drawings at the celebration. The prize for the employee raffle was won by Kenneth Ferrell, third shift employee in the galvanizing plant. The customer prize winner was Kent Walker of Con-Tech Systems, who took home five Silver Club Level tickets and a parking pass to the Carolina Panthers October 28 home game against the Baltimore Ravens.

Thanks to everyone who attended or sent good wishes. For more photos and information, visit Galvan Industries on the Web at [www.galvanize.com](http://www.galvanize.com).

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## Chimney Rock Takes Galvan To The Top

Chimney Rock is one of the top 20 tourist attractions in North Carolina. More than 253,000 visitors came to the park in 2017. The number grows annually. Galvanizing by Galvan Industries provides the highest level of corrosion prevention for the steel components of the famous Outcroppings trail, plus a natural aesthetic that blends with beauty of the environment.

Since 1958, Galvan Industries has provided the ultimate in corrosion control for steel while setting the standard for environmental sustainability. Contact Ben Kelly at (704) 455-5102, or e-mail [sales@galvanize.com](mailto:sales@galvanize.com) to learn more about galvanizing for your next project.

To see more photos, visit our online Project Portfolio at [www.galvanize.com](http://www.galvanize.com).

