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NICOL SCALES & MEASUREMENT IS AN ISO ACCREDITED CALIBRATION COMPANY THAT HAS PROVIDED CALIBRATION, REPAIR AND SALES OF ALL TYPES OF WEIGHING AND MEASUREMENT PRODUCTS SINCE 1931.



## Coal Tar Undercoating



Coal tar undercoat on truck scale

**Rust** — In 2001, the National Association of Corrosion Engineers (NACE) released a study that calculated the cost of corrosion to the United States economy. According to this study, rust costs nearly \$280 billion dollars per year. These costs come from maintenance, repair and replacement of equipment. It is such a large issue that the report offered some suggestions to minimize these costs. One of the key recommendations of the NACE study was to demand equipment designs that feature corrosion control technology from the original equipment manufacturer. Some OEMs have embraced implementing these technologies, others have not.

**Get an edge over rust** — Corrosion is the enemy. It can cost you dearly in maintenance and repair costs over time. However, there are steps you can take to prevent rust from causing damage to your scale – even if your application is a very corrosive one. Taking the advice from the NACE report, demand that your OEM can provide corrosion prevention technologies. For example, if you are operating a scale in a pit, demand a pit-type design. A pit-type design is engineered to minimize the amount of steel exposed to a corrosive atmosphere, thus reducing the possibility of corrosion altogether. Another step you can take to get an edge over rust is to apply a protective coating. One of the best protective coatings for industrial use is coal tar.

**Consider coal tar** — When buying a scale, you have choices regarding anti-corrosion coatings. Most all manufacturers offer a paint system designed to slow corrosion. That paint system may not be adequate for rugged environments. For added protection, be sure to evaluate coal tar. Coal tar is a single component, high solids coating applied at the factory to 12 mils thickness. Coal tar is used to protect against rust in very rugged, high risk environments like underground pipelines. The performance of coal tar is proven and is a perfect solution for protecting truck scales from corrosion.

**Beware of imitators** — In contrast to a single component coal tar, some manufacturers offer asphalt emulsions. However, asphalt emulsions are cut with water and mechanically emulsified into a thinner, water-based substance not well suited to rugged environments. An emulsion is a mixture of two immiscible fluids – think oil and water. Two substances that will not mix naturally can be made to mix in an emulsion with the addition of chemical additives. That's what an asphalt



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emulsion is, a water-based mixture held together by chemical surfactants. Over time—a very short period of time—that mixture breaks down and the properties change, leading to scaling and ultimately a failure. Once this scaling occurs, your steel substrate is at the same degree of risk for corrosion as if there were no coating at all.

**How is coal tar different?** — Coal tar is not an emulsion. Coal tar is a single component, high solids coating applied directly to the prepared steel surface. Because asphalt emulsions are mixtures, they will have a tendency to separate and fail. According to the Transportation Research Board of the National Academies, “macro-emulsions are inherently unstable. Over a period of time, the asphalt phase will eventually separate from the water. Asphalt is insoluble in water.” In other tests, asphalt emulsions were found to be three times more likely to absorb water. Absorbing water will accelerate the breakdown of the asphalt coating and expose the steel to moisture – which was precisely what the coating was applied to prevent in the first place!

**Coal tar is the best prevention** — If you operate in an extremely corrosive environment, you need added protection. Over the long term, you could be paying for corrosion related repairs that could have been prevented, or at least delayed. Take the advice of the corrosion engineers. Take the steps when you purchase your equipment and demand corrosion prevention technologies from the OEM. Demand a more corrosion resistant design. Ask about corrosion prevention coatings. Selecting and applying coal tar is the best option to protect your investment and reduce your long-term cost of ownership.

For more information about the Fairbanks Scales products that have the coal tar undercoat option, please visit [www.fairbanks.com](http://www.fairbanks.com).

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