RESEARCH ON THE EFFECTIVENESS OF EONCOAT®
EonCoat panels with intentional damage after 1,870 hours of B117 exposure.

“To test the mechanical integrity of EonCoat, panels were intentionally damaged.”

“Through years of extensive lab and field tests, EonCoat is proving to be an effective anti-corrosion technology.”

“In all cases, there is not rust in the areas where the panels were intentionally damaged, aside from the 90° bend in the panel. Again, the panels show no sign of rust.”

“Cross-cut adhesion of EonCoat — June 2018 after 4 months of being insulated and in service.

The pipe service, insulated with blankets, is running at temperatures ranging from 120 to 138 °C. Like the intentionally damaged panels above, again, the EonCoat shows no rust.”

EonCoat IN THE OIL & GAS INDUSTRY

Taken from “Chevron’s Use of EonCoat® to Prevent Corrosion on Carbon Steel” presented at EUROCORR 2018
RESULTS
EonCoat’s patented dual-layer formula was featured at EUROCORR 2018 as an effective anti-corrosion coating.

The paper reported:

“These results, a simplified surface preparation and being able to coat over a rusted surface, will lower the overall cost of application when compared with a standard three coat system. EonCoat projects this coating system to last 30+ years in atmospheric service. With a lower total cost of application and a simpler surface preparation prior to coating, EonCoat provides an attractive solution that facility operators are seeking.”

BACKGROUND
Oil & gas companies must protect their carbon steel assets from the threat of corrosion under insulation (CUI). CUI can severely damage assets, leading to high repair and replacement costs. The cost and effectiveness of protective coatings on the market vary, making it difficult to choose a coating to invest in for long term use.

“Current coating products in the marketplace for CUI provide a very wide temperature range. CUI occurs due to damage to the coating system. If the coating is damaged and insulated, then CUI becomes a very costly inspection and maintenance problem.”

OBJECTIVES
This thorough investigation, including atmospheric corrosion testing and mechanical integrity testing, was undertaken to gain a full understanding of EonCoat® as a protective coating system.

The goal of this paper was to:

“discuss how Chevron U.S.A. has been successful in using EonCoat® to prevent atmospheric corrosion and using a high temperature version of the coating to prevent corrosion under insulation (CUI).”

ABOUT EUROCORR
EUROCORR, the Congress of the European Federation of Corrosion, is one of the biggest corrosion conferences in Europe. Approximately 600 people from all over the world attended the conference in September 2018 in Poland. The focus for 2018 was on Applied Science with Constant Awareness. During this conference, the paper “Chevron’s Use of EonCoat® to Prevent Corrosion on Carbon Steel” was presented to the energy and industrial sectors of Europe.
EONCOAT TESTED IN COASTAL ENVIRONMENT

Taken from “Validation of Environmentally-preferable Coatings for Launch Facilities” by NASA Technology Evaluation for Environmental Risk Mitigation

All panels underwent white blast cleaning. Then, they were coated with the prescribed coating system.

“The panels were mounted on the test racks and transported to the KSC Beachside Corrosion Laboratory. The distance of the test stands from the mean high tide line is approximately 150 feet from the Atlantic Ocean.”

“The racks were installed on galvanized pipe test stands which oriented the samples at a 30° angle facing the ocean.”

- Inspected 5 times: At 0 months, 6, 12, 18, and 60 months.
- Degree of rusting: EonCoat got an average of 10.0 (“No rusting or less than 0.01% of surface rusted”)
- EonCoat was recommended to go on to stage 2 testing. It was one of only 3 products that were recommended for further testing (of the 9 tested).
BACKGROUND
As people become more aware of safety concerns associated with protective coatings, environmental regulations increase for industries that use these coatings. In response, manufacturers including EonCoat have developed coatings with lower volatile organic compound (VOC) content and that do not contain isocyanates and heavy metals.

OBJECTIVES
The goal of this project was to determine the feasibility of environmentally friendly corrosion resistant coatings for carbon steel applications, and to determine whether the chosen coatings could meet the unique requirements of NASA launch facilities and ground support equipment. As a coating with no VOCs or hazardous air pollutants (HAPs), EonCoat® was one of the coatings chosen for testing.

RESULTS
A group of project stakeholders from NASA Centers and the United States (U.S.) Air Force identified key performance requirements to qualify alternative coating systems. The tests were divided into two phases. This report, “Validation of Environmentally-preferable Coatings for Launch Facilities,” covers Phase 1 testing.

EonCoat® was one of only 3 products, out of the 9 tested, that was recommended to move on to Phase 2 testing.
Specimens underwent a weeklong corrosion cycle, repeated twice, for a total of 3 weeks of exposure to corrosion conditions.

Each corrosion cycle included:

- 2 days: placing in saltwater solution with flange resting on tie-plate
- 1 day: removing and separating pieces to air dry
- 3 days: placing in a humidity cabinet (120 degrees F / 98-100% RH) with flange nested in tie plate
- 1 day: removing and separating components to air dry

Based on visual examination, the EonCoat® system has provided the best corrosion protection.
Corrosion caused by water or saltwater can deteriorate the strength of steel railway, and may ultimately lead to failure and safety issues. Fatigue also deteriorates the strength of rail over time. Because corrosion resistant coatings are often expensive to implement, it's important to understand whether they successfully extend the life of rail to reduce long-term costs.

The purpose of this study was to separate the effects of fatigue and corrosion on rail life and to determine if corrosion protection is of practical value. To do this, rail segments were tested for fatigue life with and without corrosion protection, with and without induced damage, and with or without exposure to corrosive environments.

This study found that the effects of corrosion and fatigue can be separated, and that corrosion protection can improve rail life in the presence of both fatigue and corrosive environments — making it a valuable investment for businesses that rely on carbon steel assets.
Want to learn more about EonCoat?

Contact our expert team.

SOURCES:
1. https://eoncoat.com/certifications/