

BADGERCORD® Zinc Ribbon Anodes for AC Mitigation

Land has always been at a premium in the United States, but a special emphasis has been placed on it over the last decade or so. Gaining easements through private property is becoming more and more difficult with landowners becoming less willing to grant such easements. Couple this with the fact that there is an increased need and greater number of pipelines and power transmission lines crossing the country and it's clear that pioneering a new easement across the country is not always ideal.

Enter shared corridors. An already established easement via a direct path is a fantastic way to avoid lengthy easement agreements and unclear outcomes. The space is already dedicated and operating to transport energy. These shared right of ways, however have created a whole new array of challenges when it comes to safety and corrosion protection of the new pipeline.

The smaller but less predictable problem is interference between competing impressed current cathodic protection systems from pipelines placed near each other, and especially when they cross each other. Software is currently employed to find ways to minimize negative interactions between multiple impressed current systems, but their accuracy is still debatable. In any event BADGERCORD zinc ribbon is an effective solution to mitigate these risks.

The much larger safety as well as corrosion risk occurs where high voltage transmission lines run parallel to pipelines. The longer the distance they parallel, the greater the potential damage. In these situations, A.C. voltages are transmitted through the pipeline by conductive or inductive interference. Magnetic induction will act along the pipeline that is parallel to the transmission line and cause large pipe potentials. The above ground portions of the pipelines such as valves and test stations pose a safety hazard to personnel and the public as a shock hazard when touched and the soil is at a significantly different potential. BADGERCORD Zinc Ribbon, when buried parallel to a pipeline and connected to it effectively mitigates pipeline potentials from all types of interference.

An additional area of concern that is often overlooked in the United States but has become an issue globally, is high speed rail powered by direct current. The trains are fed DC power via overhead wire and graphite pantographs (also manufactured by American Carbon Co specialty graphite division). They return their current to the power station via the rails. Even in the best insulated rail, significant amounts of DC current can leak into the soil and can be picked up by nearby metal structures such as protected pipelines. This so called DC traction interference is something to be aware of as high speed rail continues to be employed.

Whether you are experiencing anode interference, cathode interference, combined interference, induced interference or DC traction interference, BADGERCORD zinc ribbon is an excellent solution. Over the past 15 years American Carbon Company has seen nearly 2,000 miles of BADGERCORD zinc ribbon placed into service.

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