

Field Applied Pipeline Coatings: Short- and Long-Term Performance

Today pipeline operators have more options available for controlling steel pipe corrosion than ever before. New coating systems—which extend the useful life of pipe, control costs, and improve safety, while at the same time meeting strict regulatory requirements—are available. However, selecting the best system for a particular pipeline is often a very difficult task. To identify the best coating materials available for the soil type and field conditions in which they are applied, operators need impartial, scientific information about each system's performance.

"I very much appreciated your informative workshop, and exemplary, highly creditable performance testing criteria.

I was impressed by the professionalism in presenting the results and performance explanations. I believe there is tremendous value in the vast data acquired. I believe this information and testing has proven to be highly valuable in providing clear and concise material performance information, and shall be instituted immediately on our projects, and in our specifications."

*Brent W. Griffin,
Coatings Engineer,
Chevron Energy
Technology
Company*



Gas Technology Institute (GTI) recently completed a \$4 million, 9-year research project to establish an unbiased, real-world, product-specific basis for owners and operators to confidently select girth weld coatings which are appropriate for their particular application requirements, and which provide the long-term performance demanded by industry. Research was conducted on a wide range of coating types which are commonly used on pipelines. Testing conditions subjected the coating systems to many variables, including three extreme soil types, small and large diameter pipe, ambient and elevated temperatures, and short- and long-term burial. During three test durations, GTI tested 684 coated joints from 5 different generic coating classes (FBE, heat-shrink sleeves, liquid-applied, composites, and tapes/wraps), comprised of 75 unique coating systems from 18 different manufacturers.

GTI is now offering a workshop to share the findings from this long-term multi-million dollar project through an interactive and engaging presentation. Field performance data has been gathered and categorized, which include specific surface preparation and application requirements for each joint, as well as quantitative test data in areas that include adhesion and peel strength, hardness, impact resistance, penetration resistance, abrasion resistance, cathodic disbondment resistance, blistering, wrinkles, dents, rust formation, holiday detection and film thickness. Attendees will learn how to practically apply this data on the pipelines they own or manage from two industry experts who were involved with this project from start to finish.

This workshop is very structured and detailed, with well-organized presentations full of useful and practical information. It provides clear and concise data on the coating performance of specific commercially available systems, including brand names. This collective data, in combination with the systematic approach explained by the experts presenting this workshop, will enable operators to make informed decisions in selecting the most cost-effective systems to adequately protect their pipeline. Organizations are also using this information to develop or enhance their methodology to use with contractors or internal resources.

For more information, contact Paul Armstrong, GTI Director of Business Development; 781-449-1141; paul.armstrong@gastechnology.org

Workshop Agenda

- Overview and Scope of Project
 - Methodology to Replicate Field Conditions
 - GTI Test Methodology
 - Specification Development
 - Selection of Coating Systems
 - Application and Inspection
 - Post Excavation Trends Observed
 - Test Results
 - Incorporating the Total GTI Methodology – Benefits
 - Q&A Session
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Who Should Attend

- Corrosion Engineers/Specialists
 - Coating Specifiers/Specialists
 - Integrity Management Staff
 - Coating Inspectors
 - Oil and Gas Pipeline Engineers and Operators
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Workshop Duration

8-hour session, best if presented as 2 half-days

Location

On site at your facility or location of your choice

Date

Anytime, based upon instructor availability

Class Size

Optimal learning and exchange of information at 15-20 participants

Cost

\$25,000 plus related travel and meals for instructors

Instructors

Daniel Ersoy, GTI R&D Director, Delivery (Transmission and Distribution) Sector

Daniel Ersoy leads personnel, labs, and all resources working on GTI R&D projects on infrastructure integrity, material science, sensors and automation, data management, and gas quality.

He is the Principal Investigator for current GTI research on pipeline integrity assurance and asset management, corrosion assessment methodologies, gas interchangeability, materials performance, and protective coatings evaluations.

As a pipeline/system integrity expert, Daniel regularly performs metallurgical, corrosion, and pipeline integrity root cause analysis for high priority oil and gas pipeline incidents and failures. He also evaluates the buried-asset Pipeline Integrity Management (PIM) programs of large natural gas transmission and distribution operators and power plant owners.

Daniel has advanced degrees in metallurgy, corrosion, and nuclear engineering and is also a certified NACE Coatings Inspector. Prior to GTI, he was a metallurgist/materials engineer at the University of Illinois and Argonne National Laboratory, as well as a U.S. Naval Officer (Nuclear Operations) in the United States Navy.

Michael O'Brien, MARK 10 Resource Group, Inc.

Mike O'Brien is the President and Founder of MARK 10 Resource Group, Inc., and provides consulting, failure investigation, expert report writing, expert testimony, training, and inspection services for clients in the protective coatings industry.

He is a NACE Level 3 Peer Certified International Coating Inspector (#2484) with Marine and Bridge Specialty endorsements, and is a SSPC PCI Certified Coatings Inspector. He has over 30 years experience in the protective coatings industry. He has taught courses on coating-related areas, including but not limited to coating failures, throughout the United States and in twelve foreign countries.

Mike is a NACE instructor for the NACE CIP Inspection courses and the NACE Marine and Bridge Coating Inspection courses. In addition, he is a SSPC-approved instructor for C1, C2, C7 and PCI courses.

For GTI's pipeline coating systems project, Mike was involved with specification development and performed all the daily inspection tasks during the surface preparation and coating application phases. In addition, Mike performed the pre-burial inspection, the post-excavation inspection and testing and investigated the coating failures. He co-authored the GTI performance reports with Daniel Ersoy.



Gas Technology Institute (GTI) is a leading research, development and training organization that has been addressing the nation's energy and environmental challenges by developing technology-based solutions for consumers, industry, and government for 70 years.

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