



Corrosion Control Solutions utilizing Vapor Corrosion Inhibitors

MESA™ and CORTEC Corporation have teamed to provide our customers with many additional solutions to their corrosion control problems and concerns. CORTEC Corporation is the world's leading manufacturer and distributor of vapor corrosion inhibitor (VpCI®) products and technologies. Together MESA™ and CORTEC are using VpCI® chemistry to solve corrosion problems that are not applicable for cathodic protection. CORTEC has manufactured vapor corrosion inhibitors for over 30-years and offers over 450 products. VpCI® products are used worldwide every day in a wide variety of applications and all products are very environmentally friendly.

Various solutions offered by MESA™ that incorporate VpCI® technology include the following:

- ✓ Double Bottom Aboveground Storage Tanks
- ✓ Real-time Corrosion Rate Monitoring Programs
- ✓ Corrosion Under Insulation for Pipelines and Vessels
- ✓ Corrosion Control During Hydro-testing of Pipelines and Vessels
- ✓ Internal Corrosion Control for Pipelines and Process Piping
- ✓ Corrosion Control of Steel in Concrete
- ✓ Equipment Preservation During Layup and Storage

Double Bottom Aboveground Storage Tanks (AST)

Double bottom tank installations, and tanks with HDPE liner containment, often create unique corrosion control challenges. VpCI® systems have a history of success in providing an outstanding economical solution for these challenges.

- ✓ MESA™ provides turnkey systems, including real-time corrosion rate monitoring, custom designed to mitigate tank floor corrosion on any double bottom; or single bottom tank with liner
- ✓ Systems can be retrofitted into existing tanks without service disruption
- ✓ Applicable for new tank construction - very economical to purchase and easy to install

Real-Time Corrosion Rate Monitoring Programs

Monitoring of corrosion rates in real-time can be utilized in many forms. It is valuable for identification of areas where new corrosion control systems are needed. This also provides unique options for monitoring of active corrosion control systems in order to ensure their effectiveness.

- ✓ MESA™ provides custom designed monitoring of corrosion rates in real-time for any type of accessible environment.
- ✓ Monitoring systems used to identify the need for new corrosion control systems
- ✓ Monitoring systems used in conjunction with existing corrosion control systems
- ✓ Corrosion rate data can be obtained manually; or automated with remote monitoring

Corrosion under Insulation (CUI) for Pipelines and Vessels

CUI is a widespread problem with few solutions until now. Vapor corrosion inhibitors provide an effective answer to mitigation of steel surface corrosion under insulation.

- ✓ MESA™ provides systems that utilize a special VpCI® designed to migrate through saturated or dry insulation and mitigate CUI
- ✓ The system is effective under elevated temperatures and is applicable for a wide range of metals
- ✓ System installation completed without insulation removal and replacement
- ✓ Real-time corrosion rate monitoring included
- ✓ VpCI® easily replenished in the future if necessary

Corrosion Control during Hydro-testing of Pipelines and Vessels

If your pipe or vessel is experiencing corrosion of surfaces exposed to hydro-test water, MESA™ has a solution. Long layups or partial fills are not a problem anymore.

- ✓ MESA™ provides solutions designed to mitigate corrosion caused by the presence of hydro-test water inside of any pipeline or vessel.
- ✓ Systems are available for any type water, including brackish and salt water
- ✓ The VpCI's® also mitigate corrosion in the headspace areas as well as the saturated areas
- ✓ Environmentally friendly products - disposal of water not affected by addition of VpCI® products

Internal Corrosion Control for Pipelines and Process Piping

Engineered systems utilizing Cortec's unique (VpCI®) technologies are available to control internal corrosion in pipelines or plant piping transporting most liquids and gases.

- ✓ MESA™ provides internal pipeline corrosion control solutions that are available for a wide range of liquid and gaseous product streams
- ✓ VpCI® products form an effective corrosion inhibiting barrier for both ferrous and nonferrous metals in the presence of water, halogens and corrosive gases such as dissolved oxygen, sulfur dioxide, carbon dioxide, and hydrogen sulfide
- ✓ The vapor phase component provides top-of-the-line corrosion protection in headspaces and areas not directly contacted by the pipeline products
- ✓ Real-time corrosion rate monitoring systems are also available

Corrosion Control of Steel in Concrete

There are now a variety of solutions for control of corrosion of reinforcing steel that is embedded in concrete. This doesn't need to be an unmanageable problem any longer.

- ✓ MESA™ provides CORTEC's industry leading unique array of Migrating Corrosion Inhibitor (MCI) solutions for mitigation of reinforcing steel embedded in concrete
- ✓ Admixtures for new concrete
- ✓ Multiple solutions for retrofit application to existing concrete

Equipment Preservation during Layup and Storage

From individual pieces of equipment to entire plants, MESA™ is able to preserve all equipment, electrical components, structures, etc. from corrosion during idle time. Engineered solutions are effective in any environment.

- ✓ MESA™ provides CORTEC's industry leading selection of solutions for equipment preservation during shipment, storage, temporary shut-down, or long-term mothballing.
- ✓ Corrosion protection is provided to all surfaces, both internal and external, through the multiple VpCI® delivery systems
- ✓ VpCI® preservation applications include a variety of cleaning products, surface coatings, powders and liquids for fogging of large spaces, additives for lubricants and process liquids, as well as films for total encapsulation
- ✓ Corrosion audits and comprehensive corrosion control plans also available