Galvashield® Tidal Plus Jacket

Galvanic Jacket for Marine Pile Protection

Galvashield Tidal Plus Jacket provides protection to pile sections in the tidal zone and above the splash zone.

DESCRIPTION

The Galvashield Tidal Plus Jacket is a significant advancement on traditional galvanic jacket protection technology. It is a low cost reliable method of extending the service life of corroding piles in marine environments. The Galvashield Tidal Plus Jacket system is comprised of fabric wrapped zinc anodes that cause saltwater wicking and extends the zone of direct zinc anode wetting to elevations significantly above high tide. The zinc anodes are placed inside a modular polyvinyl chloride (PVC) jacket, preformed fiber reinforced polymer (FRP) or other stay-in-place jacketing system. After the anodes and jacket are placed around the structure, the annular space is filled with portland cement concrete or mortar. Unlike traditional FRP or concrete jackets, epoxy grouted jackets and wraps, Galvashield Tidal Plus Jacket provides on-going galvanic current to address corrosion both in the tidal zone and in dry sections above the tidal zone.

The system is self-powered and regulates its current output according to the corrosion rate of the steel and its operating environment. The fabric wrapped zinc anodes allow saltwater to enter and activate the zinc anodes. If protection is required for submerged pile sections, bulk zinc anodes are typically placed below mean low tide. To protect atmospherically exposed pile sections, piles in brackish or fresh water, or for dry land columns, Vector recommends Galvashield DAS Jackets (formerly available as Galvanode® Jackets with DAS Marine anodes).

The Galvashield Tidal Plus Jacket system with modular formwork is very simple to install and most work can be completed while the structure remains in service. The system requires no maintenance and restores concrete loss due to steel corrosion and concrete spalling in one operation. Galvashield Tidal Plus Jackets can be round or square with custom lengths suited for the project.

APPLICATIONS

- Tidal Zone Protection for Marine Piles
- Transitional / Splash Zone Protection
- Reinforced concrete columns
- Saltwater exposure
- Prestressed concrete piling
- Steel H and pipe piles

** As with all galvanic protection systems, service life is dependent upon a number of factors including reinforcing steel density, concrete conductivity, chloride concentration, humidity and anode mass.*

Level of Protection	Description	Galvashield®
Corrosion Prevention	Mitigates initiation of new corrosion activity	•
Corrosion Control	Reduces on-going corrosion activity	•
Cathodic Protection	Reduces or eliminates on-going corrosion activity	•

FEATURES AND BENEFITS

- **Versatile** - can be used to protect steel or concrete structures in saltwater tidal zones applications.
- **Low maintenance** - requires no external power source or system monitoring.
- **User friendly** - repair spalled concrete and provide lasting protection in one step. No costly electrical work required.
- **Site support** - on-site cathodic protection training and technical service available from factory-trained corrosion technicians.
- **Measurable** - anode performance can be easily monitored if required.
- **Long Lasting** - 10 to 35+ year service life* as required.
- **Enhanced aesthetics** – modular PVC jackets create a clean attractive appearance.
- **Minimal downtime** - system can be generally installed without major disruption to operations.

SPECIFICATION CLAUSE

Contact Vector Corrosion Technologies for assistance in developing job-specific specifications.

HOW IT WORKS

When two dissimilar metals are coupled together in an electrolyte, the metal with the higher potential for corrosion (more electronegative) will corrode in preference to the more noble metal. In concrete applications, the zinc anodes in Galvashield Plus DAS Jackets will corrode in favor of the reinforcing steel, thus providing corrosion protection.

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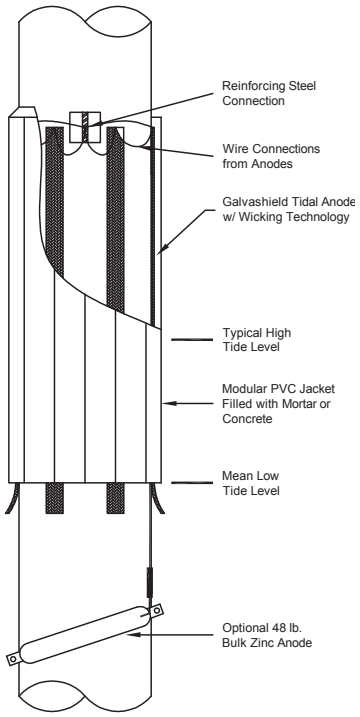

INSTALLATION INSTRUCTIONS

Installation of the Galvashield Tidal Plus Jacket system can be accomplished with relative ease. The first step is to remove any deteriorated concrete with pneumatic hammers and any marine growth (if applicable) using methods approved by the engineer. Once the deteriorated concrete has been removed, the surface of the column is prepared by grit or hydro blasting to clean the concrete surface and remove all corrosion products from the steel.

An electrical connection must be made to the reinforcing steel that is to be protected. Two electrical connections are recommended. Electrical connections can be made to exposed reinforcing steel. If no exposed steel is present, a concrete excavation will be required to make the reinforcing steel connection. In order for the system to work properly, the steel reinforcement must be electrically continuous. Electrical continuity must be established if the reinforcing steel is not electrically coninuous.

If specified, the bulk anode is installed below the low tide line. All wiring from the zinc anodes and the bulk anode are run up inside the jacket into the electrical connection locations.

The Galvashield Tidal Plus Jacket system is used with a modular PVC or fiberglass jacket assembly with tongue and groove joint(s). The jacket is set on a temporary bottom form and is positioned around the pile and the zinc anodes.

To complete the installation, the Galvashield Tidal Plus Jacket is braced and filled with approved cement-based grout or concrete to completely fill the annular space. Once the grout is cured. The continuous flow of current from the zinc anodes provides galvanic corrosion protection to the reinforcing steel.

PRECAUTIONS

Galvashield Tidal Plus Jackets may be part of an overall structure rehabilitation program to extend the service of life of corroding columns and piles. Where structural damage exists, consult a structural engineer.

Galvashield Tidal Plus Jackets may be used in conjunction with Vector's extensive line of galvanic corrosion protection products to protect other portions of the structure. For more information, on corrosion mitigation strategies and options, contact Vector Corrosion Technologies.

HEALTH AND SAFETY

Portland cement concrete and mortar should be handled with suitable gloves and other personal protective equipment in accordance with standard procedures for handling cementitious materials.

ABOUT VECTOR

Vector Corrosion Technologies takes pride in offering technically advanced, cost effective corrosion protection solutions to extend the service life and improve the durability of concrete and masonry structures around the world. Vector has earned numerous project awards and patents for product innovation and is committed to a safe, healthy and sustainable environment. For additional information or technical support, please contact any Vector office or our extensive network of international distributors.

Canada
Winnipeg, MB
Phone: (204) 489-9611
info@vector-corrosion.com

United States
Lexington, KY
Phone: (813) 830-7566
info@vector-corrosion.com

Europe
Cradley Heath, UK
Phone: (44) 1384 671 400
infoEU@vector-corrosion.com

Middle East
Dubai, UAE
Phone: +971 50 659 7322
infoME@vector-corrosion.com

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