



Galvashield® Tidal Plus Jacket

Galvanic Jacket System with Wicking Anodes

DESCRIPTION

The Galvashield Tidal Plus Jacket is a significant advancement in 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 zinc anodes that allow saltwater wicking to extend 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 ongoing galvanic current to address corrosion both in the tidal zone and in dry sections directly above the tidal zone.

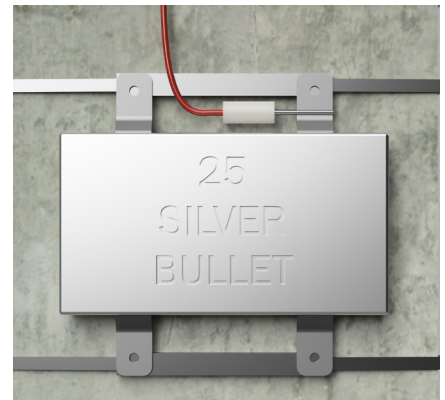
The system is self-powered and regulates its current output according to the corrosion rate of the steel and its operating environment. The Tidal Plus zinc anodes allow saltwater to enter and activate the zinc anodes. If protection is required for submerged pile sections, Silver Bullet® bulk aluminum anodes are typically placed below mean low tide. The Silver Bullet Al Anode has been specifically engineered for use with our Galvashield® Jacket Systems for concrete and steel piles to provide improved performance compared to standard bulk zinc anodes while also being more environmentally friendly to marine life.

To protect atmospherically exposed pile sections, piles in brackish or freshwater, 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 and care available in custom lengths which can be modified in the field to suit project conditions.



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



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, temperature and anode mass.*

FEATURES AND BENEFITS

- **Versatile** - can be used to protect steel or concrete structures in all exposure conditions. Can be installed using stay-in-place or temporary forms.
- **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 training and technical service available from factory-trained cathodic protection 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 of operations.

- **Environmentally friendly** - aluminum bulk anodes are not considered toxic to marine life by the EPA.

SPECIFICATION CLAUSE

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

HOW IT WORKS

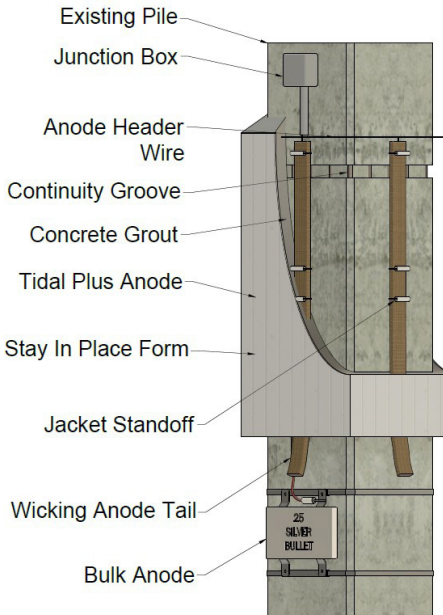
When two dissimilar metals are coupled together in an electrolyte, the metal with the higher potential for corrosion (more electronegative) will corrode in preference to the more noble metal. In concrete applications, the zinc anodes in Galvashield Plus DAS Jackets will corrode in favor of the reinforcing 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 all loose concrete has been removed, the column is prepared by grit or hydro blasting to clean the concrete and removing all corrosion products from the steel. An electrical connection must be made to the reinforcing steel that is to be

protected. 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 to be protected. If specified, the bulk aluminum anode is installed below the low tide line. To monitor the system, all wiring from the zinc anodes and the bulk anode is run up inside the jacket into the junction box.

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 lead wires from the anode in the jacket, bulk zinc anode and reinforcing steel are connected, and the system becomes immediately operational. 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 at Vector-Corrosion.com/contact-us.

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.

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