

# Galvashield® Tidal Jacket

Galvanic Jacket for Tidal Zone Protection

## DESCRIPTION

The Galvashield Tidal Jacket galvanic protection system, formally available as Galvanode® Jacket with Zinc Mesh, is designed to provide a low cost reliable method of extending the service life of corroding piles in tidal saltwater environments. The Galvashield Tidal Jacket system is comprised of galvanic zinc mesh anodes inside a fiberglass reinforced polymer (FRP) stay-in-place form. After the anodes and jackets 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 Jacket provides on-going galvanic current to address tidal zone corrosion.

The system is self-powered and regulates its current output according to the corrosion rate of the steel and its operating environment. Galvashield Tidal Jackets use high purity zinc mesh anodes. The open bottomed form allows saltwater to saturate and activate the zinc mesh inside the jacket. Bulk zinc anodes are typically used for supplemental protection below mean low tide. To protect atmospherically exposed pile sections above the tidal zone, Vector recommends the use of Galvashield Tidal Plus Jackets or Galvashield DAS Jackets.

The Galvashield Tidal Jacket system is 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 Jackets can be supplied as round or square jackets with custom lengths suited for the project.



*Galvashield Tidal Jacket provides protection to pile section in the tidal zone*

## APPLICATIONS

- Tidal Zone Protection for Marine Piles
- Saltwater exposure
- Prestressed concrete piling
- Steel H 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 eliminate 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 training and technical service available from factory-trained cathodic protection technicians.
- **Measurable** - anode performance can be easily monitored if required.
- **Long Lasting** - 25+ year estimated service life\*.
- **Enhanced aesthetics** – FRP jackets are available in a range of colors to suit project requirements.

- **Minimal downtime** - system can be generally installed without major disruption of operations.

## SPECIFICATION

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

## HOW IT WORKS

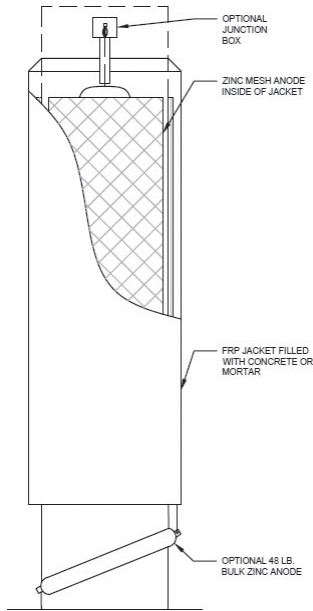
When two dissimilar metals are coupled together in an electrolyte, the metal with the higher potential for corrosion (more electronegative) will corrode in preference to the more noble metal. In concrete applications, the zinc anodes in Galvashield Tidal Jackets will corrode in favor of the reinforcing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





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## INSTALLATION INSTRUCTIONS

Installation of the Galvashield Tidal 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 surface of the column is prepared by grit or hydro blasting to clean the concrete and remove all corrosion products from the steel.

An electrical connection must be made to the reinforcing steel that is to be

protected. Electrical connection 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. If not, electrical continuity must be established.

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 reinforcing steel connection.

The Galvashield Tidal Jacket system includes a 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. The tongue and groove joint is sealed using a 100% solids epoxy adhesive and stainless steel fasteners.

To complete the installation, the Galvashield Tidal 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 connection are connected to the steel 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 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 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.

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