

Galvashield® LJ

Galvanic corrosion protection system for severe exposure concrete elements

Uses

Galvashield LJ is designed to reinstate and actively protect reinforced concrete/structural steel elements subject to the most severe exposure conditions. Typical applications include columns and piles subject to wet-dry tidal cycling in marine environments.

Advantages

- No post installation maintenance required
- Self powered and self regulating
- 'All in one' repair and protection system
- Longest life expectancy of any galvanic system
- Satisfies the 100mV criteria for effective cathodic protection
- Proven technology with measured performance
- Provides highly cost effective repair vs comparable systems
- Quick, easy and low cost installation, no costly electrical work or monthly monitoring
- Fully compatible with selected Renderoc repair mortars

Description

Galvashield LJ is a galvanic protection system based upon the installation of prefabricated heavy duty marine quality GRP jackets incorporating a zinc anode system conforming to ASTM A-190. The anode system is connected to the steel reinforcement to provide the required protective current to the steel.

Galvashield LJ can be supplied in rectangular, circular or flat formats to suit substrate profile.

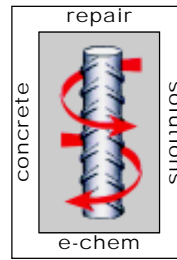
Galvashield LJ assembly is supplied with a minimum of 8 non-conductive "stand-offs" per face which are used to secure the anode in place whilst simultaneously achieving the optimum position of the jacket in relation to the structure it is protecting.

Following the fixing of Galvashield LJ, repairs and jacket fill are accomplished by pouring into place Renderoc LJ a conductively compatible repair material.

A replaceable bulk anode can be incorporated into the system in order to provide considerable lifetime extension where required.

Design Criteria

Galvashield LJ is a 'cathodic' protection system utilising the long proven principle of galvanic protection to provide long term durability to both new and existing structures in conditions of



extreme exposure such as splash and tidal zones in marine environments.

Galvashield LJ satisfies the 100mV potential shift requirement for effective cathodic protection as specified under NACE (National Association of Corrosion engineers) Standard RP 0290-90.

In line with other 'cathodic' protection systems, Galvashield LJ must be designed and the installation supervised by a specialist in the field of corrosion control.

Standards Compliance

Galvashield LJ will, when installed and connected in accordance with approved instructions, exceed the minimum 15 year life criteria laid down by FHWA and DOT specifications. The design of Galvashield LJ follows comprehensive criteria established for the patented 'Lifejacket'™ system developed by the Alltrista Corporation. (In certain circumstances life expectancy may be increased by the addition of bulk anodes).



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Specification

The galvanic protection jacket shall be Galvashield LJ, a composite GRP jacket incorporating a zinc anode system.

Renderoc LJ a conductively compatible repair material will be used to fill the void between the jacket and the concrete/steel substrate. This material shall be supplied by the same supplier as Galvashield LJ to guarantee compatibility of product.

Instructions for use

Preparation

Saw cut the extremities of the repair area to a minimum depth of 10mm thus feather edging is avoided and a square edge is created. Deteriorated concrete shall be broken out from around and behind steel reinforcing in accordance with good concrete practice.

All exposed steel reinforcement must be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Abrasive blasting is recommended for this process.

In order for Galvashield LJ to function correctly, steel reinforcing must be continuous, if not, continuity must be established throughout the structure prior to making connections.

Connection can be made through a single excavation to a sound reinforcing bar in the area requiring protection. This will become the negative connection and must be made in compliance with FHWA and DOT specification requirements.

A standard junction box is used to house all functional wire connections and may serve as a site for shutting the circuit when measuring current and voltage outputs.

The Galvashield LJ system is a two piece 'Tongue and Groove' interlocking jacket assembly. It is positioned and held in place with non conductive fasteners and sealed moisture tight with an approved adhesive.

Temporary formwork is installed to the lower annulus to retain the structural high strength repair which is poured into the jacket cavity, this formwork is later removed to allow saltwater migration to wet the anode interface within the jacket.

When the final wire connection is made the system becomes immediately operational providing a non-interrupted protective current to the corroded structure.

Estimating

Supply

Each Galvashield LJ assembly is supplied prefabricated ready to use, in accordance with prior dimensions received from the project.

Precautions

Health and safety

There are no known health and safety hazards associated with Galvashield LJ.

For health and safety requirements on Renderoc LJ refer to the product data sheet.

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