Galvashield® LJ

FOSROC constructive solutions

Galvanic Cathodic Protection for Reinforced Concrete and Steel Piles in Seawater

Description

Galvashield LJ is designed to provide a cost effective, reliable method of reinstating and Cathodically Protecting severely exposed reinforced concrete / structural steel elements. Galvashield LJ is composed of a prefabricated fibreglass jacket lined with expanded zinc mesh conforming to ASTM B69-01a for A190 alloy. The zinc mesh is connected to the steel reinforcement to provide the required protective current to the steel. Once in place the jackets are filled with a Fosroc Approved grout, thus effect necessary concrete repair fixing the jacket in place.

The system is 'self-powered' and regulates its current output according to its operating environment. Galvashield LJ is able to provide sufficient performance to satisfy the 100mV potential shift requirement for effective 'Cathodic Protection' as specified under NACE (National Association of Corrosion Engineers) Standard RP 0290-90.

Galvashield LJ can be supplied in rectangular, circular, square, flat or custom formats to suit most substrate profiles, providing felxibility throughout.

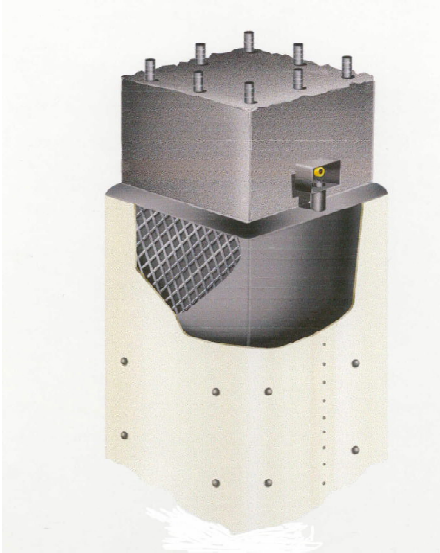
Advantages

- **Cost effective** - The concrete repair and protection carried out at the same time
- **Zero maintenance** - No post installation maintenance required
- **Proven technology** - with measured performance in aggressive environments
- **Self powered and self regulating** - no damaging over-protection
- **Long lasting** - 10 - 35 years service life*
- **Measurable** - Performance can easily be monitored if required.
- **User friendly** - Quick, easy and low cost installation
- **Structure specific design** - Each system is tailored to the environment and service life expectations
- **Versatile** - Can be used to protect conventionally reinforced or prestressed concrete

* Varying mesh gauges and bulk anodes can be used to provide various design lives, depending upon the job requirement. For more information contact Fosroc.

Standards compliance

Galvashield LJ will, when installed and connected in accordance with approved instructions, comfortably exceed the minimum 15-year life criteria laid down by the Federal Highways Authority (USA) specifications.



Level of Protection	Description	Galvashield LJ
Cathodic Prevention	Preventing new corrosion activity from initiating	✓
Corrosion Control	Significantly reduce ongoing corrosion activity	✓
Cathodic Protection	Highest level of protection, intended to stop ongoing corrosion	✓

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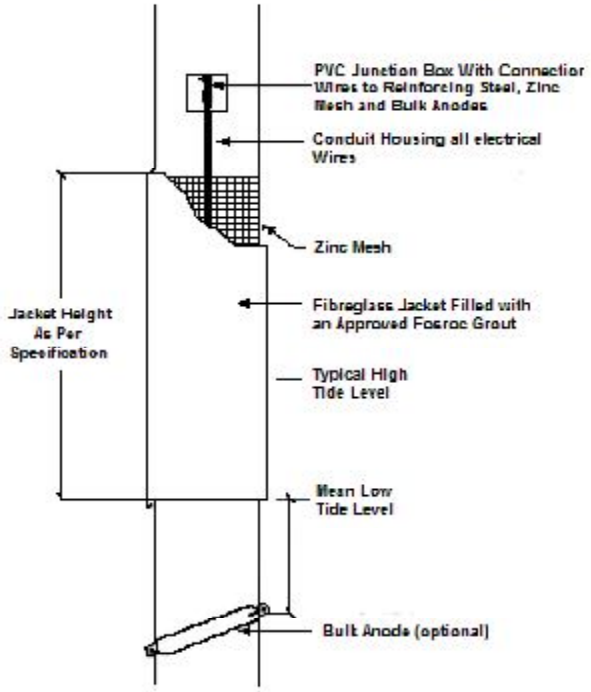
How does it work?

Galvashield LJ works on the principle of Sacrificial Protection. When two dissimilar metals are placed in an electrolyte (in this case within concrete) the most Active metal (zinc) will sacrifice itself to the more Noble (less active) steel. Galvashield LJ's are installed on corroding reinforced concrete or steel piles in the tidal/splash zone. Once installed they will provide Cathodic Prevention /Protection to the reinforcing steel, preventing further corrosion causing structural deterioration



Example of Galvashield LJ in conjunction with a Bulk anode, which is optional depending upon design life

Application instructions

Preparation

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

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, all steel reinforcing must be continuous. Any loss of continuity will require additional electrical connections or restoration of continuity by effective means.

Connections 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 local specification requirements.

A watertight junction box is used to house all functional wire connections and may serve as an access site for measuring current and voltage outputs.

Installation

The Galvashield LJ system is a supplied as a 'Tongue and Groove' interlocking jacket assembly. It is positioned and held in place via temporary bracing.

Temporary formwork is installed around the jacket to retain the Fosroc approved grout, which is poured into the jacket cavity. This formwork is later removed to allow saltwater migration to wet the anode interface within the jacket.

Wire connection are made and the system becomes immediately operational providing non-interrupted current to the corroded structure.

For more detailed instructions refer to the Fosroc's installation guide.

Specification

The galvanic protection jacket shall be Galvashield LJ by Fosroc Limited, a composite fiberglass jacket lined with an expanded zinc mesh. The jacket cavity shall be filled with a Fosroc grout. Additionally, a replaceable bulk anode can be incorporated to provide extended life.

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Supply

Each Galvashield LJ assembly is supplied prefabricated and ready to use, in accordance with the specifications

received from the client.

Health and safety

There are no known health and safety hazards associated with Galvashield LJ. Standard precautions should be taken to avoid injury when installing the system, such as use of gloves and safety glasses.

The Galvashield LJ protection system distributed by Fosroc International uses sacrificial zinc anode

Technology developed by Altrista Corporation in USA and licensed to Fosroc.

Fosroc Chemicals (India) Pvt. Ltd.

Head Office
"Sapthagiri Palace", No.38,
II & III Floor, 12th Cross,
CBI Road, Ganganagar North,
Bangalore 560 032

telephone	fax	e-mail
++91 80-23551500	++91 80-23551510	enquiryindia@fosroc.com

Regional Offices

Bangalore
"Sapthagiri Palace", No. 38
II & III Floor, 12th Cross,
CBI Road, Ganganagar North,
Bangalore 560 032.
Ph:080-23551500
Fax : 080-23551510

Mumbai
1401/1402, 14floor,
A-Wing'The Great Eastern Summit'
Sector-15, CBD, Belapur
Navi Mumbai 400 614
Ph: 022 -43406800-04

Delhi
D-166 Sector 10
Noida,
UP 201 301
Ph:0120-4270620
Fax: 033-2499-0280

Kolkata
304, Jodhpur Park
Kolkata 700 068
Ph:033-65343188

www.fosroc.com