THE MOST COMPLETE RANGE OF TECHNOLOGIES FOR CORROSION CONTROL

GALVANIC SYSTEMS
FUSION SYSTEMS
IMMERSED CURRENT SYSTEMS
ELECTROCHEMICAL TREATMENTS
POST-TENSIONED SERVICES
At Vector Corrosion Technologies, concrete preservation is what we do. With the largest range of cathodic protection technologies and services to control concrete corrosion, Vector offers an innovative solution for any budget and service life objective.

**Technology Development**

Vector continues to lead the way with major research and development activities conducted at our two laboratories.

Vector’s UK-based laboratory performs fundamental research in the area of concrete corrosion and cathodic protection of concrete.

Vector’s North American product development lab is the proving ground for innovations in concrete anodes and post-tension corrosion mitigation technologies.

**Technical Consultation**

Vector works collaboratively with major engineering consultants, government agencies, private owners and contractors to identify the root cause of deterioration and deliver technically advanced, cost effective corrosion solutions. Our certified cathodic protection engineers and technicians are trained in the most advanced concrete restoration and corrosion mitigation techniques.

**International Distribution**

Vector’s cathodic protection technologies are available worldwide from over 20 distributors strategically placed in most major markets. Contact Vector or visit our website for an up-to-date list of international distributors.
**Galvanic Systems**

Galvanic systems provide protection to reinforcing steel through the use of sacrificial anodes.

- Monitoring is unnecessary for system operation
- Low maintenance
- Wide range of anode systems

**Fusion Systems**

Combines the benefits of an electrochemical treatment and galvanic protection in a single anode unit.

- Two-stage, modular protection
- Inbuilt power supply passivates active corrosion
- Passivity is maintained with galvanic cathodic prevention

**Impressed Current Systems**

Impressed current cathodic protection systems provide protection through externally powered anodes.

- High level of protection
- Long life system
- System monitoring and maintenance is necessary

**Electrochemical Treatments**

Electrochemical treatments passivate active corrosion by directly attacking the root cause.

- Reduces chloride levels
- Increases alkalinity
- No permanent system left in place

**Post-tension Services**

Vector offers a range of options to mitigate corrosion in post-tensioned tendons.

- Tendon drying
- Grease and grout injection
- Impregnation of bonded systems
DISCRETE GALVANIC ANODES

New Construction
Galvanic anodes can be used in new concrete construction for global protection or to target problem areas such as construction joints.

Galvashield® N
- Alkali-activated corrosion prevention anode
- Extra-long tie wires to position anode in center of reinforcing grid

Patch Accelerated Corrosion
Galvashield Type 1A embedded anodes are alkali-activated and typically used around the edge of concrete repairs to prevent incipient anode formation (halo effect).

Galvashield® XP Compact
- Type 1A corrosion prevention anode
- User-friendly, single wire connection

Galvashield® XPT
- Type 1A corrosion prevention anode
- User-friendly, single wire connection

Galvashield® XP2
- Type 1A corrosion control anode
- 2 times the current of Galvashield XPT

Galvashield® XP4
- Type 1A corrosion control anode
- 4 times the current of Galvashield XPT

Galvanode® VP
- Type 1H corrosion prevention anode
- Halide salt activated anode

General Protection
Type 2A discrete galvanic anodes are installed into drilled holes for general protection or for targeting specific corrosion hotspots.

Galvashield® CC
- Type 2A corrosion control anode
- A range of standard and custom sizes available

LEVELS OF PROTECTION

Corrosion Prevention – Mitigate new corrosion initiation with current density 0.2 to 2 mA/m² of steel surface area as per ISO Standard 12696

Corrosion Control – Mitigate active corrosion with current density of 1 to 7 mA/m² of steel surface area

Cathodic Protection – Mitigate active corrosion with current density of 2 to 20 mA/m² of steel surface area, achieve 100 mV polarization or passivation of the steel as per NACE or ISO standards

Corrosion Passivation – Mitigate active corrosion by applying sufficient current to passivate steel by chloride reduction and increased alkalinity around the reinforcing steel as per NACE or ISO standards
**DISTRIBUTED GALVANIC ANODES**

**Embedded Anodes**
Common applications for embedded distributed anodes are large area repairs, overlays, or encasements such as concrete jacketing.

**Galvanode® DAS**
- Long alkali-activated anodes
- Custom-designed for the application

**Galvanode® DAS Marine**
- Long alkali-activated anodes for saltwater structures
- Custom-designed for the application

**Surface Applied**
Galvanic anodes can be placed onto the surface of the structure and connected to the embedded reinforcing steel.

**Galvanode® ASZ+**
- Metalized zinc anode
- Humectant activator for higher current and improved bond

**Galvanode® ZincSheet**
- Preformed zinc sheet anode
- Ionically conductive adhesive

**Jacketing**
Galvanic jackets are used for piles and columns on marine and non-marine structures and include anodes and stay-in-place form work.

**Galvashield® Tidal Jacket**
- Zinc mesh anode inside FRP forms with optional bulk anode
- Saltwater tidal zone protection

**Galvashield® Tidal Plus Jacket**
- Zinc anode strips inside wicking fabric, FRP or PVC forms with optional bulk anode
- Saltwater tidal and transitional zone protection

**Galvashield® DAS Jacket**
- Alkali-activated anodes, FRP or PVC forms with optional bulk anode
- Marine and non-marine piles and columns

**EMBEDDED ANODE NOMENCLATURE**

| Type 1 – Concrete repair or joints between new and existing concrete |
| Type 2 – Installed in sound concrete |
| Class A – Zinc activated by alkaline mortar pH 14+ |
| Class H – Zinc activated by halide salts such as chloride or bromide |
FUSION ANODES

Powered galvanic technology that combines Stage 1 impressed current (passivation) and Stage 2 galvanic anodes (maintenance) into a single unit.

**Galvashield® Fusion™ T2**
- Type 2 corrosion passivation and cathodic prevention anode unit
- Custom-designed solution for global or targeted protection

IMPRESSED CURRENT ANODES

Impressed current cathodic protection systems use an external power supply and deliver a high level of protection.

**Ebonex®**
- Cylindrical or star-shaped discrete ceramic anodes
- High current capacity with ventilation

**Lida®**
- Mixed metal oxide coated titanium anodes
- Mesh or ribbon mesh available

**DAC-Anode®**
- Surface-applied system
- Primary anode wire embedded in a conductive coating

GLOBAL VS. TARGETED PROTECTION

**Global** – protect the entire structure or large structural elements
**Targeted** – only protect areas of active corrosion or high corrosion risk
**ELECTROCHEMICAL TREATMENTS**

These systems provide long-term corrosion passivation by delivering a high current density for a short duration.

**Norcure® Chloride Extraction**
- Reduces chloride levels
- Increases alkalinity around reinforcing steel

**Norcure® Re-alkalization**
- Drives alkaline solution into concrete
- For carbonated concrete structures

**POST-TENSION SERVICES**

Vector offers a range of solutions to evaluate and mitigate corrosion in bonded and unbonded post-tensioned structures.

**Post-tech® Non-destructive Evaluation**
- Locate post-tensioned tendons
- Find anomalies such as voids and soft grout

**Post-tech® Corrosion Evaluation**
- Test for moisture level inside ducts
- Determines probability of corrosion

**Post-tech® Cable Drying**
- Removes moisture from inside tendons
- Mitigates active corrosion

**Post-tech® PTI Impregnation**
- Very low viscosity impregnation system for bonded tendons
- Leaves anti-corrosion barrier on wire strands and dampproofs grout
Save Economic Resources

Corrosion of reinforcing steel is a major cause of concrete deterioration and if left unchecked, can lead to significant structural repair or replacement. The good news is that many technologies are available to extend the life of new and existing structures, including cathodic protection and other electrochemical methods.

Making new structures last longer and promoting the rehabilitation and reuse of existing structures can save money compared to the cost of premature failure, demolition and rebuilding.

Save Natural Resources

According to the World Economic Forum, the construction industry is the largest global consumer of resources and raw materials, almost 50% of the total. And, it is estimated that up to 40% of solid waste comes from construction and demolition.

Improving the durability of concrete structures reduces the consumption of natural resources, pollution and construction waste.