



PatchGuard™ Connect HiFlow

An inter-connected sacrificial anode system with enhanced current output, and unique battery mode option, which acts to control corrosion of reinforcing steel in concrete.

A galvanic corrosion control system featuring HiFlow enhanced current output technology and with the unique option of switching to permanent battery powered impressed current mode. The system comprises sacrificial alloy units with integral titanium connections, used in conjunction with polymeric screw connectors, XLPE coated titanium connector wire and a specially formulated backfill mortar. The interconnected anodes are routed to the steel reinforcement via a specially designed connection box with space to install optional batteries. PatchGuard Connect HiFlow is an effective method of adopting BS EN 1504 Part 9 Principle 10 (cathodic protection by applying an electrical potential).

Uses

PatchGuard Connect HiFlow is used to control corrosion and mitigate cracking and spalling of sound but contaminated concrete where a corrosion risk has been identified.

Advantages

- ✓ Compact size
- ✓ Corrosion resistant connection system
- ✓ Tough and resistant to damage on site
- ✓ Unique battery mode option
- ✓ No need to pre-soak anodes
- ✓ Measurable performance
- ✓ Quick and easy to install
- ✓ No need to break out contaminated concrete
- ✓ HiFlow enhanced current output technology
- ✓ Suitable for carbonated & chloride contamination
- ✓ Pre-mixed embedding mortar in handy cartridge
- ✓ Up to 20 year service life*

Application

Refer to Application Guide for full details. Fix connection box and mark up locations for the PatchGuard units and saw cuts in conjunction with the contract drawings. Spacing between anodes is typically 400mm (16") to 500mm (20") - refer to spacing table. At each anode location drill a 32mm (1¼") diameter hole to a depth min 30mm

(1½") greater than the anode length and prepare saw cuts 4mm (3/16") wide x 15mm (5/8") deep for recessing the wiring. Rivet the black titanium wire to an exposed section of rebar, using a stainless steel rivet, and run back to a negative terminal (black) within the connection box. Pre-connect anodes to the red titanium wire in groups/strings of maximum 40 units, using the plastic screw connectors, and run back to an anode terminal (red) within the connection box. Check the connection between each anode and the feeder wire using a multi-meter. Clean and pre-soak anode holes for a minimum of 60 minutes and remove excess water. Apply DuoCrete HF mortar using a caulking gun and hose extension. Insert PatchGuard units into the mortar which shall flow 30mm (7/8") to 40mm (1½") from the concrete surface depending on anode size. Cap remaining void at the top of each anode hole with an appropriate low shrink mortar within 10 minutes of placing anode. Make good saw cuts and steel connection excavations. Measure current density following installation and at 14 days. If >3mA/m² at 14 days then leave in galvanic mode. If <3mA/m² install batteries and adjust voltage to achieve required current density. Replace the batteries annually.

Properties

PRODUCT	DIAMETER	LENGTH	ZINC WT
PATCHGUARD CONNECT 175 HIFLOW	18mm (¾")	42mm (1 ⅝")	65g
PATCHGUARD CONNECT 175 HIFLOW	18mm (¾")	77mm (3")	120g
PATCHGUARD CONNECT 175 HIFLOW	18mm (¾")	115mm (4½")	180g

Limitations

In order that suitable current flow and lifetime can be achieved from the PatchGuard Connect HiFlow anode, certain practical considerations should be taken into account. The capping mortar over each PatchGuard Connect HiFlow unit must be a minimum depth of 20mm. When installed in a previous patch repair, the resistivity of the repair material should be in the range of 50-200% of the parent concrete. Any discontinuous steel should be either electrically bonded to, or electrically isolated from the system negative. Any cracks or delamination in the concrete which affect ionic current flow will affect performance of the PatchGuard Connect HiFlow unit and should thus be pre-treated. *Service life will depend on local site conditions including chloride concentration, concrete properties, humidity and temperature.

Packaging

25 units per tub plus polymeric screw connectors, steel rivets and insulated titanium wire (red and black).

Storage

Store dry.

Tubs should only be opened when the product is required.

The lid of the tub should be closed at all times when not in use.

Do not remove silica gel.

Do not allow contact with oxidizing materials.

Ancillary Materials

DuoCrete HF Mortar

HiFlow Connection Box

MN15 Reference Electrodes – for optional corrosion rate monitoring

Precautions - Health and Safety

Health and safety protective clothing, gloves and eye protection must be worn at all times.

Specification Clause

The discrete anode shall be a sacrificial alloy anode with an integral titanium electrical connection which allows fixing of the unit to an insulated titanium feeder wire by use of a polymeric screw connector. The anode unit shall be embedded within a drilled hole of maximum 32mm (1¼”) diameter using a factory pre-mixed backfill mortar of pH<12.8 which remains pliable for a minimum of 48 hours. Anodes shall be connected to the steel reinforcement via a connection box with integral battery power option at variable voltage.