TECHNICAL DATASHEET

PatchGuard™

An individually connected sacrificial anode which acts to prevent corrosion initiation in reinforced concrete structures.

Uses

PatchGuard is used to prevent incipient anode induced corrosion adjacent to reinforced concrete patch repairs, also known as the ring anode effect.

Advantages

- Compact size, quick and easy to install
- MCHW specification 5712 Type 1b compliant
- Corrosion resistant attachment system
- Extends the life of patch repairs
- Tough and resistant to damage on site
- Suitable for carbonated and chloride contaminated structures
- No restriction on use of bonding primers or high resistivity repair mortars
- No bridging mortar required
- No need to pre-soak anodes
- Pre-mixed embedding mortar in handy cartridges
- Measurable performance
- Up to 20 year service life*

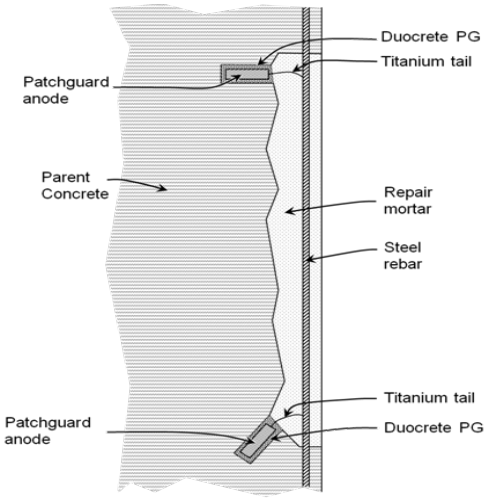
Description

A zinc alloy unit with an integral stainless steel connecting wire, used in conjunction with a specially formulated backfill mortar. PatchGuard is a proven, effective method of adopting BS EN1504 Part 9 Principle 10 (cathodic protection by applying an electrical potential). When installed into concrete structures, and connected to the reinforcing steel, the unit will act as a sacrificial anode and prevent rebar corrosion within its sphere of influence. When installed into drilled holes around the perimeter of patch repairs, PatchGuard units will prevent incipient anode induced corrosion, a common cause of premature patch repair failure described in BRE Digest 444 Pt 3. PatchGuard units are uniquely located within the parent concrete surrounding the patch repair rather than embedded in the repair mortar. This results in enhanced current distribution to the areas of steel at greatest risk of corrosion and also permits the use of bonding primers and high resistivity mortars within the patch repair.

Properties

Product*	Diameter	Length	Zinc Weight	Typical Applications
PatchGuard 175†	18mm (¾")	42mm (1⅝")	65g	Lightly reinforced structures
PatchGuard 350†	18mm (¾")	77mm (3")	120g	↓
PatchGuard 400	18mm (¾")	95mm (3¾")	160g	↓
PatchGuard 500†	18mm (¾")	115mm (4½")	198g	Heavily reinforced structures

†Previously known as PatchGuard, PatchGuard Plus and PatchGuard Ultra



Application

Application shall be in accordance with the Installation Guidelines, summarised as follows:

A location for the discrete anodes as close as practical to the edge of the broken out repair shall be selected and holes drilled into the parent concrete within the patch at locations identified by the Engineer. The spacing between the anodes is typically 400mm (16") to 500mm (20") and will depend on local conditions and steel density (refer to PatchGuard spacing table).

A hole of diameter 25mm (1") and minimum depth 5mm (¼") greater than the anode length shall be drilled to house the PatchGuard anode unit.

Remove dust and debris and pre-soak the hole with water for a minimum of 15 minutes. Once the excess water has been removed from the bottom of the hole, DuoCrete PG mortar shall be applied into the hole with a nozzle to ensure no entrapment of air voids within the mortar matrix. The PatchGuard anode shall be placed into the hole and inserted such that the DuoCrete PG mortar surrounds the whole unit.

The protruding stainless steel wire from the anode shall be directly connected to a section of cleaned reinforcing steel within the patch repair by winding at least twice around the rebar and fixing the tail with the supplied cable ties.

Electrical continuity of the PatchGuard anode stainless steel wire and the reinforcing steel shall be confirmed. The patch repair shall be reinstated within 2 hours. Where this is not practical the anode hole shall be capped with a small amount of repair mortar.

The PatchGuard anode installation can be checked by taking close interval half-cell potential measurements at and between the anodes immediately after installation.

Limitations

Concrete repair material cover to the PatchGuard unit must be a minimum of 20mm (⅞").

Concrete repairs must be undertaken in accordance with relevant standards. Any discontinuous steel should be electrically bonded to ensure continuity.

*Service life will depend on local site conditions including chloride concentration, concrete properties, humidity and temperature.

Packaging

25 Units per tub.

Nylon zip ties.

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 PG Mortar.

MN15 manganese dioxide reference electrode.

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 stainless steel electrical connection which allows fixing of the unit at a range of distances from the reinforcing steel. The anode unit shall be embedded within a drilled hole of maximum 27mm (1 1/16") diameter at the periphery of the patch repair using a factory pre-mixed backfill mortar of pH<12.8 which remains pliable for a minimum of 48 hours.

Technical and Sales Support

w: www.cp-tech.co.uk

t: +44 (0) 115 9724 238

e: general@cp-tech.co.uk

Certificate Number 10159
ISO 9001, ISO 14001

MEMBER OF THE BRITISH PARKING ASSOCIATION

For technical and sales support please contact us at:
Concrete Preservation Technologies
1 Palmer Business Court, Manor House Road, Nottingham, UK, NG10 1LZ
(T) +44 (0) 115 9724 238 (E) general@cp-tech.co.uk
www.cp-tech.co.uk