

PRODUCT DATA SHEET

Sika® FerroGard®-420 Patch CC

DISCRETE ANODE FOR CORROSION CONTROL

DESCRIPTION

Sika® FerroGard®-420 Patch CC is a zinc based discrete sacrificial anode placed in reinforced concrete structures which are corroding as a result of chloride ingress or carbonation.

Sika® FerroGard®-420 Patch CC discrete anodes are placed into sound carbonated or chloride contaminated concrete outside of any concrete repaired areas (occasionally can be placed also in the repaired area as well).

Once installed, the Sika® FerroGard®-420 Patch CC anodes will corrode preferentially to the surrounding reinforcement, offering protection against corrosion damage.

USES

Sika® FerroGard®-420 Patch CC may only be used by experienced professionals.

- Corrosion control of zones within sound contaminated concrete.
- For reinforced concrete structures such as bridges, car parks, coastal structures, industrial structures and residential high rise.
- Coastal reinforced concrete structures both in and above the tidal zone

CHARACTERISTICS / ADVANTAGES

Sika® FerroGard®-420 Patch CC anodes:

- Corrode preferentially to the surrounding reinforcement, offering protection from further corrosion damage
- Do not need long term maintenance costs Conform to the latest EN 12696:2016 standard, when designed appropriately
- Provide rapid and targeted installation
- Performance can be monitored
- Are placed with pre-packaged embedding mortar
- Do not require break-out large areas of sound contaminated concrete
- Lifetime of up to 20 years*

* Dependent on local conditions, including chloride concentration, concrete properties, humidity and temperature.

PRODUCT INFORMATION

Composition	Zinc compound
Packaging	25 anodes per box, vacuum packed in separate pouches
Appearance / Colour	Cylindrical zinc core covered in an activated coating, separate white spacers and an integral titanium connecting wire.
Shelf life	5 years from the date of production.
Storage conditions	Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging. Do not allow contact with oxidizing materials. Pouches must only be opened when product is required. Any part used pouches must be re-sealed.
Length	~ 110 mm
Diameter	~ 18 mm
Zinc Weight	~ 180 g

TECHNICAL INFORMATION

Current Density	> 0,2–2 mA/m ² * in corrosive environment. * Dependent on local conditions, including chloride concentration, concrete properties, humidity and temperature.
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SYSTEMS

System Structure	Sika® FerroGard®-420 Patch CC Sika® FerroGard®-500 Crete Other anode sizes are available with different zinc contents and profile:						
	<table><thead><tr><th>Name</th><th>Zinc content</th></tr></thead><tbody><tr><td>Sika® FerroGard®-410 Patch CC</td><td>~ 65 g</td></tr><tr><td>Sika® FerroGard®-415 Patch CC</td><td>~ 120 g</td></tr></tbody></table>	Name	Zinc content	Sika® FerroGard®-410 Patch CC	~ 65 g	Sika® FerroGard®-415 Patch CC	~ 120 g
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Sika® FerroGard®-415 Patch CC	~ 120 g						

APPLICATION INFORMATION

Hole Dimension	Depth: 145 mm Diameter: 18 mm
Ambient Air Temperature	+5 °C min
Substrate Temperature	+5 °C min

APPLICATION INSTRUCTIONS

APPLICATION

Reference must be made to the Sika Method Statement: "Corrosion Control using Discrete Galvanic Anodes Sika® FerroGard®-400s Patch CC" for further details. This is summarised below:

Sika® FerroGard®-420 Patch CC anodes are installed following guidelines in EN 12696:2016 and CEN/TS 14038-1:2004.

The anodes are typically positioned at a density of 4–9 /m² of surface concrete. Spacing between anodes: 350–650 mm.

Install into pre-drilled (25 mm diameter holes with a depth of ~145 mm) previously filled with Sika® FerroGard®-500 Crete embedding mortar to completely encapsulate the anode.

Electrically connect each anode to a titanium feeder wire which is connected to the reinforcement. This allows an option to deliver an electrical charge to the reinforcement at any point in the future should a change in environmental conditions demand greater protection of the reinforcement. In this situation, Sika® FerroGard®-420 Patch CC system conforms to the latest EN 12696:2016 standard for impressed current cathodic protection.

The Sika® FerroGard®-420 Patch CC anode installation can be monitored using half-cell potential surveys, current outputs and reinforcement corrosion rate measurements.

FURTHER INFORMATION

Sika Method Statement: "Corrosion Control using Discrete Galvanic Anodes Sika® FerroGard®-400s Patch CC"

IMPORTANT CONSIDERATIONS

In order that suitable current flow and lifetime be achieved from the Sika® FerroGard®-420 Patch CC anode, certain practical considerations must be taken into account.

- The concrete repair material cover for Sika® FerroGard®-420 Patch CC unit must be a minimum depth of 20 mm
- Concrete repairs must be undertaken in accordance to an acknowledged national standard such as EN 1504
- Any discontinuous reinforcement must 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

Sika® FerroGard®-420 Patch CC unit and must be pre-treated before anode installation

- The time to achieve passivity will be dependent on site conditions. Depolarisation of treated reinforcement will be slower in moist conditions
- Design of the galvanic protection system must be undertaken by an experienced qualified corrosion design engineer
- Installation must be carried out in accordance with engineers design and specification

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

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LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

REGULATION (EC) NO 1907/2006 - REACH

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in this product data sheet. Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0.1% (w/w).

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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