

## 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. 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.
- No long term maintenance costs
- Option to deliver an electrical charge to the reinforcement anytime during the treatment
- Conforms to the latest EN 12696 (2012) standard for impressed current cathodic protection, when designed appropriately
- Large charge capacity of up to 500 kC with option of sizes.\*
- Lifetime of up to 20 years\*
- Rapid and targeted installation
- Performance can be monitored
- Pre-packaged embedding mortar
- No need to break-out large areas of sound contaminated concrete

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

### PRODUCT INFORMATION

<b>Composition</b>	Zinc compound
<b>Packaging</b>	25 anodes per box, vacuum packed in 5 separate pouches
<b>Appearance / Colour</b>	Cylindrical zinc core covered in an activated coating, separate white spacers and an integral titanium connecting wire.
<b>Shelf life</b>	5 years from the date of production.
<b>Storage conditions</b>	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	~115 mm
Diameter	~18 mm
Zinc weight	~180 g

## TECHNICAL INFORMATION

Current density	>0,2–2 mA/m <sup>2</sup> * in corrosive environment. * Dependent on local conditions, including chloride concentration, concrete properties, humidity and temperature.
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## SYSTEM INFORMATION

System structure	Sika® FerroGard®-420 Patch CC	
	Sika® FerroGard®-500 Crete	
	Other anode sizes are available with different zinc contents and profile:	
	<b>Name</b>	<b>Zinc content</b>
	Sika® FerroGard®-410 Patch CC	~65 g
	Sika® FerroGard®-415 Patch CC	~120 g

## APPLICATION INFORMATION

Hole dimension	Depth: 145 mm Diameter: 30 mm
Ambient air temperature	+5 °C min
Substrate temperature	+5 °C min

## 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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## 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 Patch CC repair material cover for Sika® FerroGard®-420 Patch CC unit must be a minimum depth of 20 mm.
- When installed in an existing concrete repaired area, the resistivity of the repair material must be in the range 50-200% of the parent concrete.
- Concrete repairs must be undertaken in accordance to an acknowledged national standard such as EN 1504.

- 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.
- 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.

## 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 the 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).

## APPLICATION INSTRUCTIONS

### APPLICATION

Reference must be made to the full Method Statement which is summarised below:

Sika® FerroGard®-420 Patch CC anodes are installed following guidelines in EN 12696:2012 and CEN/TS 14038-1:2004.

The anodes are typically positioned at a density of 4–9 /m<sup>2</sup> of surface concrete; spacing between anodes: 350–650 mm - refer to the relevant Method Statement for details.

Install into pre-drilled (30 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 12696:2012 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.

### LOCAL RESTRICTIONS

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

## 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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**Product Data Sheet**

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September 2021, Version 02.02

020303090020000009

SikaFerroGard-420PatchCC-en-AU-(09-2021)-2-2.pdf