

PRODUCT DATA SHEET

Sika® FerroGard®-510 Patch

DISCRETE ANODE FOR CORROSION MITIGATION OF INCIPIENT ANODE ADJACENT TO CONCRETE REPAIRED AREAS

DESCRIPTION

Sika® FerroGard®-510 Patch is a zinc based discrete sacrificial anode placed inside a concrete repaired area in reinforced concrete structures which are corroding as a result of chloride ingress and/or carbonation. Sika® FerroGard®-510 Patch anodes are placed along the perimeter of the repair area and fixed to the reinforcement prior to the application of a concrete repair system. The reinforcement outside the repaired area is at greatest corrosion risk owing to the passive condition of the reinforcement within the repaired area. Sika® FerroGard®-510 Patch anodes corrode preferentially to the surrounding reinforcement offering protection against incipient corrosion damage. In addition, standard repair mortars, bonding primers and reinforcement corrosion protection coatings can be used as Sika® FerroGard®-510 Patch is placed in the parent concrete and not within the repair mortar.

USES

Sika® FerroGard®-510 Patch may only be used by experienced professionals.

- Controlling the incipient anode effect by electrically balancing the anodic and cathodic areas of reinforcement
- Targeted treatment applied to concrete repaired areas to prevent incipient corrosion damage
- 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®-510 Patch anodes corrode preferentially to the surrounding reinforcement, protecting it from further corrosion damage
- Protects against incipient anode effect outside of repaired area
- No long term maintenance costs
- Strengthens passive film on reinforcement
- No rapid dissolution of activating components
- Quick installation—no additional concrete break out
- Bonding primers for concrete and reinforcement corrosion protection coatings can be used
- High resistivity repair mortars can be used
- Performance can be monitored
- Cost effective corrosion control solution

PRODUCT INFORMATION

Chemical Base	Zinc compound
Packaging	25 anodes per box, vacuum packed in 5 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 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 should only be opened when product is required. Any part used pouches should be re-sealed.
Length	45 mm
Diameter	25 mm
Zinc Weight	62 g
Current Density	>0.2–2 mA/m ² * in corrosive environment * Dependent on local conditions, including chloride concentration, concrete properties, humidity and temperature.

SYSTEM INFORMATION

System Structure	Sika® FerroGard®-510 Patch Sika® FerroGard®-500 Crete Other anode sizes are available with different zinc contents and profile:						
	<table border="1"> <thead> <tr> <th>Name</th> <th>Zinc content</th> </tr> </thead> <tbody> <tr> <td>Sika® FerroGard®-515 Patch</td> <td>120 g</td> </tr> <tr> <td>Sika® FerroGard®-520 Patch</td> <td>180 g</td> </tr> </tbody> </table>	Name	Zinc content	Sika® FerroGard®-515 Patch	120 g	Sika® FerroGard®-520 Patch	180 g
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APPLICATION INFORMATION

Ambient Air Temperature	+5 °C min
Substrate Temperature	+5 °C min

APPLICATION INSTRUCTIONS

APPLICATION

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

Within the repair area where the concrete has been removed, locate the Sika® FerroGard®-510 Patch anode along the perimeter edges of the repair at spacing's determined by the design engineer based on steel density.

Install into pre-drilled 30 mm diameter holes (depth according to length of anode +30 mm) and using Sika® FerroGard®-500 Crete embedding mortar to completely encapsulate the anode.

Directly connect the integrated titanium wire from the anode to an adjacent cleaned area of reinforcement within the repair area by winding at least twice around the reinforcement and fixing the tail with the supplied plastic cable tie.

Electrical continuity of the Sika® FerroGard®-510 Patch anode conducting wire and the reinforcement shall be confirmed. The concrete repair mortar shall be immediately applied with a suitable Sika® repair mortar.

The Sika® FerroGard®-510 Patch anode installation can be monitored using half-cell potential surveys, current outputs and reinforcement corrosion rate measurements.

LIMITATIONS

In order that suitable current flow and lifetime be achieved from the Sika® FerroGard®-510 Patch anode, certain practical considerations should be taken into account.

- The patch repair material cover for Sika® FerroGard®-510 Patch 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 should be either electrically bonded to or electrically isolated from the system negative.
- 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 should be undertaken by an experienced qualified corrosion design engineer.
- Installation should 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.

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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