

PRODUCT DATA SHEET

Sika® Galvashield® XP

Embedded galvanic anodes with 2G Technology™

PRODUCT DESCRIPTION

Sika® Galvashield® XP series utilize an innovative zinc anode core design surrounded by an enhanced formulated cement-based mortar to provide corrosion mitigation to reinforced concrete structures. The anodes are alkali-activated (Type 1A) with an internal pH of 14 or greater to keep the zinc active over the life of the anode while being non-corrosive to reinforcing steel. The anodes utilize 2G Technology™ to provide higher current output. Once installed, the zinc anode corrodes preferentially to the adjacent reinforcing steel, thereby providing galvanic corrosion prevention or corrosion control.

WHERE TO USE

- To mitigate incipient anode formation (halo effect) in patch repair
- Bridge widening and other structure modifications
- Slab replacements, expansion joint repairs and other interfaces between new and existing concrete
- Repair of prestressed and post-tensioned concrete
- Chloride contaminated or carbonated concrete
- Repair of structures with epoxy-coated rebar

CHARACTERISTICS / ADVANTAGES

- Proven technology: Sika® Galvashield® anodes have an extensive 25+ year track record in the field and have received British Board of Agrément (BBA) approval
- Type 1A anode: Alkali-activated to maintain activity of zinc while being non-corrosive to reinforcing steel
- 2G Technology™: Provides enhanced current output and protection
- Cast zinc core: Provides high anode utilization in addition to a secure long-term connection between the zinc and the lead wires
- Integral steel lead wires: Allows for quick and convenient anode installation. Provides dependable steel-to-steel contact with no intermediate materials such as galvanizing (which can corrode over time) that may compromise the long-term electrical connection
- BarFit™ design: Grooved edges on Galvashield® XP2 and XP4 anodes facilitate the positioning and optimize the contact between the anode and the rebar
- Economical: Provides localized protection where it is needed the most, at the interface of the repair and the remaining contaminated concrete
- Versatile: Can be used for both conventionally reinforced and prestressed or post-tensioned concrete
- Low maintenance: Requires no external power source or system monitoring
- Long lasting: 10 to 20 year service life* reduces the need for future repairs

*As with all galvanic protection systems, service life and performance is dependent upon a number of factors including reinforcing steel density, concrete conductivity, chloride concentration, humidity and anode spacing

PRODUCT INFORMATION

Packaging	Sika® Galvashield® XPC	50 units per box	6.8 kg (15 lb)
	Sika® Galvashield® XPT	50 units per box	9.1 kg (20 lb)
	Sika® Galvashield® XP2	40 units per box	10.2 kg (22.5 lb)
	Sika® Galvashield® XP4	30 units per box	12 kg (26.5 lb)
Shelf Life	12 months		
Storage Conditions	Store in dry conditions in the original unopened box. Avoid extremes of temperature and humidity		

SYSTEMS

System Structure	Product Name	Anode Class	Anode Dimension (Nominal)	Zinc Mass (g)
	Galvashield XPC	Type 1A	25 x 31 x 64 mm	40
	Galvashield XP2	Type 1A	32 x 34 x 100 mm	100
	Galvashield XP4	Type 1A	33 x 35 x 130 mm	160
	Galvashield XPT	Type 1A	24 x 28 x 100 mm	60

ANODE CLASS

Digit: 1 - Installed in Concrete Repairs

Letter: A - Alkali-activated using High pH

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

- For extremely high corrosion risk applications (> 1.5 % chloride content), contact Sika® Canada Inc. for technical assistance
- Maximum spacing dimensions are based on typical conditions. Spacing should be reduced as appropriate for severe environments or to extend the expected service life of the anodes

LIMITATIONS

Sika® Galvashield® XP may only be used by experienced professionals. The user is solely responsible for the proper use of the product. Any site visit carried out by Sika personnel, upon the user's request, is intended solely to provide written technical recommendations based on Sika documentation. They are in no way intended to supervise, approve or control the quality of the work performed on site.

- Sika® Galvashield® XP-type anodes are intended to provide localized corrosion prevention or corrosion control and do not address or repair structural or concrete damage. Where structural damage exists, consult a structural engineer

ENVIRONMENT, HEALTH & SAFETY

This product is a manufactured article that does not require Safety Data Sheets to be marketed, transported or applied at the jobsite, according to the Hazardous Product Act - Section 2. Based on our current knowledge, this product is not classified as dangerous and does not contain any hazardous materials. Always wear personal protective equipment (including safety goggles and gloves) to manipulate and install Sika® products.

APPLICATION INSTRUCTIONS

NOTES ON INSTALLATION

For optimum performance, use a repair material with resistivity less than 15 000 ohm-cm. If a higher resistivity repair material is to be used or if the resistivity of the material is unknown, pack Sika® Repair-SHB patching mortar mixed with water between the anode and the substrate to provide ionic conductivity to the substrate. Prior to placing the repair material, pre-wet the concrete substrate and the anodes to achieve a saturated surface dry condition, then complete the repair. Do not soak the anodes for more than 20 minutes.

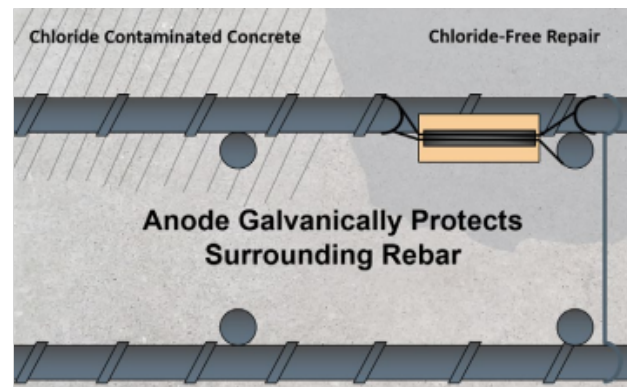
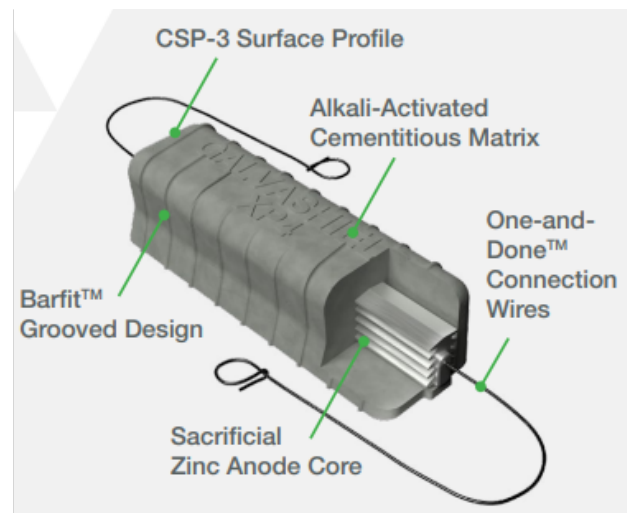
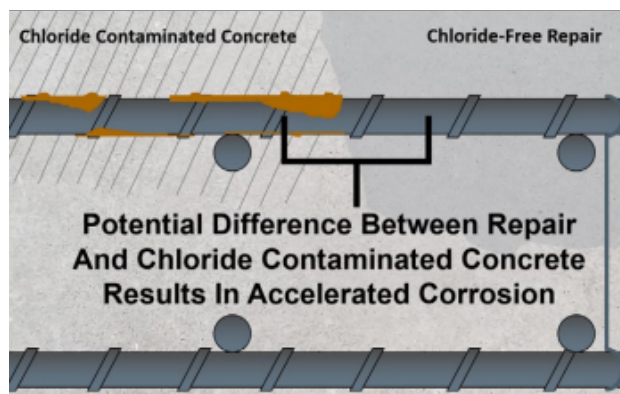
APPLICATION

Concrete shall be removed from around and behind all corroding rebar in accordance with good concrete repair practices such as ICRI Guideline R310.1R. Exposed reinforcing steel should be cleaned to remove all residual rust and concrete residue.

The anodes and repair material should be installed immediately following preparation and cleaning of the steel reinforcement. The location and spacing of the anodes shall be as specified by the designer (refer to design criteria). The units can be placed around the perimeter of the repair or on a grid pattern to protect a second mat of steel if required.

Securely fasten the anodes units from the side or beneath the exposed rebar as close as practical to the surrounding concrete (preferably within 100 mm (4 in) while ensuring that enough space remains to fully encapsulate the unit in the repair. The minimum cover of the repair material over the anodes should be 20 mm (3/4 in).

Anode-to-steel continuity and steel-to-steel continuity within the patch should be verified with an appropriate meter; discontinuous steel should be tied to continuous bars using steel tie wire and re-tested. A value between 0 and 1 ohm should be achieved.



Anode Spacing for Low to Moderate Corrosion Risk (Chloride Content* < 0.8 % or Carbonated Concrete)

Protection Level			
Galvashield®	XPC or XPT	XP2	XP4
Anode			
Steel	mm (in)	mm (in)	mm (in)
Density			
Ratio			
< 0.3	675 (27)	700 (28)	700 (28)
0.31–0.6	450 (18)	700 (28)	700 (28)
0.61–0.9	350 (14)	575 (23)	700 (28)
0.91–1.2	300 (12)	475 (19)	625 (25)
1.21–1.5	275 (11)	425 (17)	550 (22)
1.51–1.8	250 (10)	375 (15)	500 (20)
1.81–2.1	225 (9)	350 (14)	475 (19)

Anode Spacing for High Corrosion Risk (Chloride Content* 0.8 % to 1.5 %)

Protection Level

Galvashield® Anode	XPC or XPT	XP2	XP4
Steel Density Ratio	mm (in)	mm (in)	mm (in)
< 0.3	450 (18)	700 (28)	700 (28)
0.31–0.6	300 (12)	475 (19)	625 (25)
0.61–0.9	250 (10)	375 (15)	500 (20)
0.91–1.2	200 (8)	325 (13)	425 (17)
1.21–1.5	175 (7)	275 (11)	375 (15)
1.51–1.8	150 (6)	250 (10)	350 (14)
1.81–2.1	125 (5)	225 (9)	325 (13)

* Chloride content is based on percent by weight of cement.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca Galvashield®, One-and-Done™, BarFit™, Fusion®, Vector® and the Vector® logo are registered trademarks of Vector® Corrosion Technologies.

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Product Data Sheet

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