BUILDING TRUST

PRODUCT DATA SHEET

# Sika® Galvashield® DAS

Distributed Anode System Embedded in Concrete Overlays, Encapsulated Inside Reinforced Concrete Jackets, or used in Conjunction with Stay-in-Place Forms to Provide Corrosion Control or Cathodic Protection

## PRODUCT DESCRIPTION

When two dissimilar metals are coupled together in an electrolyte, the metal with the higher potential for corrosion (more electronegative) will corrode in preference to the more noble metal. In concrete applications, the Sika® Galvashield® DAS anode unit corrodes in favour of the reinforcing steel and produces an electrical current that mitigates corrosion activity.

Sika® Galvashield® DAS is a Distributed Anode System that is quickly and easily installed to provide corrosion protection for a variety of applications, such as installation in new concrete, embedded in concrete overlays, encapsulated inside reinforced concrete jackets, or used in conjunction with stay-in-place forms for column protection. The Sika® Galvashield® DAS System comprises of a high-purity zinc core cast inside alkali-activated mortar with an internal pH ≥14 which keeps the zinc active over the life of the anode. The anode size, electrical components and installations procedures are customised to meet specific project requirements.

These long strip anodes are quickly and easily distributed over the surface of a concrete or masonry structure and connected to the reinforcing steel using tie wire connections. They can also be used for targeted protection, such as bridge widening and at new and old concrete interfaces. Once installed, the zinc anode corrodes preferentially to protect the adjacent reinforcing steel.

For applications where anodes will be submerged, or subjected to todal conditions (e.g. marine piles), use Sika® Galvashield® DAS-X anodes.

## USES

- Bridges, piers and wharves.
- Power and industrial plant rehabilitation.
- Concrete jacketing / section enlargement.
- Galvanic jackets for columns.
- Galvanic jackets for walls.
- Joints repairs and widening.
- Service life extension in severe service conditions.
- Conventionally reinforced, prestressed and post-tensioned concrete.
- New construction.
- New / old concrete interfaces.

## CHARACTERISTICS / ADVANTAGES

- **Proven technology** - supported by independent testing.
- **High capacity** - can provide more zinc and more current output than many other galvanic anode systems.
- **Design flexibility** - anode design and spacing can be customised to meet project specific cathodic protection performance requirements and service life objectives.
- **Versatile** - can be used for both conventionally reinforced, prestressed or post-tensioned concrete.
- **User friendly** - installation is quick and easy, requiring no specialised equipment.
- **Low maintenance** - requires no external power source or system monitoring.
- **Measurable** - system performance can be easily monitored if required.
- **Embedded system** - provides more uniform performance, eliminates risk of vandalism.
- **Long lasting** - 10 to 40 year service life, reduces maintenance and the need for future repairs.

## PRODUCT INFORMATION

| | |
|---|---|
| **Packaging** | Custom-packaged based on project requirements. For additional information, contact Sika® Technical Services. |
| **Shelf Life** | 12 months |
| **Storage Conditions** | Store in dry conditions in the original unopened containers for up to 12 months from the date of manufacture. System should be installed within one month of opening the container. Take special precaution not to damage anode components during transportation or while handling. Avoid extremes of temperature and humidity. |

**Dimensions**

**Typical Anode Unit Sizes***

| | Sika® Galvasield® DAS | Sika® Galvashield® DAS-X |
|---|---|---|
| **Zinc Weights** | 0.89 kg/m | 2.45 kg/m |
| **Lengths** | 100 cm Recommended | 100 cm Recommended |
| **Anode Dimensions** | 28 mm x 38 mm | 32 mm x 50 mm |

*Sika® Galvashield® DAS anodes are customised to meet project requirements. Typical properties are listed above.

## TECHNICAL INFORMATION

**Design Considerations**

Sika® Galvashield® DAS Distributed Anode System can be used for corrosion prevention, corrosion control or cathodic protection applications. Anode unit design and spacing are varied to meet project objectives. Anode spacing can vary from 150 mm to 750 mm on center depending on project objectives, the severity of the service environment, and expected service life of the anode components. In environments with average annual temperatures higher than 15°C, or more corrosive conditions (e.g. marine environments), Sika® Galvashield® DAS-X anodes are receommended.
For assistance with system design, please contact Sika® Technical Services.

## SYSTEM INFORMATION

**System Structure**

| Level of Protection | Description | Sika® Galvashield® DAS |
|---|---|---|
| Corrosion Prevention | Preventing new corrosion activity from initiating | Suitable |
| Corrosion Control | Significantly reducing active corrosion | Suitable |
| Cathodic Protection | Stopping active corrosion by applying ongoing electrical current | Suitable |
| Corrosion Passivation | Stopping active corrosion by changing the concrete environment around the steel | Unsuitable |

## VALUE BASE

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.

## USES

- Sika® Galvashield® DAS is not intended to address or repair structural damage.
- Where structural damage exists, consult a suitably qualified Structural Engineer.
- For applications where wetting may occur prior to concrete placement, limit water exposure to 20 minutes or less.
- For submerged applications such as tidal zone protection, use Sika® Galvashield® DAS-X anodes.
- For optimum performance, encasement concrete resistivity should be less than 50,000 Ω·cm.
- Concrete with significant amounts of polymer or silica fume may have higher resistivity.

## ECOLOGY, HEALTH AND SAFETY

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

**Sika® Galvashield® DAS Distributed Anode Systems are used for a wide range of applications. Specific application procedures can be developed on a project-by-project basis. For additional information, please contact Sika® Technical Services.**
Galvanic protection shall be provided using Sika® Galvashield® DAS anode units as supplied by Sika®. The distributed galvanic anode units shall be alkali-activated with a pH greater than 14 and shall not contain intentionally added constituents that are corrosive to reinforcing steel as per ACI 222R such as chlorides, bromides, or other halides. The zinc shall be manufactured with zinc that is compliant with ASTM B418 Type II (Z13000) and ASTM B6 Special High Grade (Z13001) with iron content less than 15 ppm and shall be evenly distributed around a steel core which is continuous along the length of the unit.

## 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.

## 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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