BUILDING TRUST

PRODUCT DATA SHEET

Sika® Galvashield® SM-DAS

Innovative Surface Mounted Distributed Anode Corrosion Protection System

PRODUCT DESCRIPTION

When two dissimilar metals are coupled together in an electrolyte (i.e. concrete), the metal with the higher electronegative potential for corrosion (e.g. zinc) will corrode in preference to the more noble metal (e.g. reinforcing steel). Sika® Galvashield® SM-DAS anodes are attached to sound concrete with Sika® Galvashield® Embedding Mortar, an ionically conductive mortar then mechanically anchored to provide corrosion prevention or corrosion control to the embedded reinforcing steel.
Sika® Galvashield® SM-DAS is an innovative surface mounted distributed anode system designed to provide corrosion control or cathodic protection to steel reinforced concrete structures. Sika® Galvashield® SM-DAS anode units are distributed across reinforced concrete and masonry structures to provide corrosion protection to the overall structure, or can be used to target specific sections with high corrosion risk such as chloride contaminated concrete around joints and areas with high corrosion potential.
Sika® Galvashield® SM-DAS anodes contain alkali-activated mortar cast around a high purity zinc core. Once installed, the zinc anode corrodes preferentially to the surrounding steel reinforcement, thereby providing galvanic corrosion control to the embedded reinforcing steel. The quantity of zinc provided, the anode length, electrical components and installation procedures are customised to meet specific project requirements.

USES

Sika® Galvashield® SM-DAS is particularly suited to the following applications:
- Columns and beams.
- Multi-storey car parks.
- Concrete tanks.
- Prestressed concrete.
- Bridges, piers and wharfs.
- Bridge deck soffits.
- Power and industrial plant rehabilitation.
- Service life extension in severe service conditions.
- Shallow or thin concrete members.
- Double T beams.

CHARACTERISTICS / ADVANTAGES

- **Proven technology** - utilises Sika® Galvashield® technology which is supported by independent test program and over 20 years of real world performance data.
- **Fast installation** - the surface mounted anode tray has been designed for maximum installation efficiency.
- **Labour-saving** - easily installed by one or two competent persons.
- **Long-lasting** - the designed 10 to 40 year anode life* reduces the need for future repairs (*as with all galvanic protection systems, service life is dependent upon a number of factors including reinforcing steel density, concrete conductivity, chloride ion concentration, temperature, humidity and anode spacing).
- **High capacity** - can provide more zinc and more current output than other galvanic anode systems.
- **Design flexibility** - anode design and spacing can be customised to meet project performance requirements and service life objectives.
- **Convenient replacement** - surface mounted anodes can be easily removed and replaced when needed.
- **Economical** - save time and money by targeting only the remaining areas of high corrosive risk.
- **Versatile** - effective in chloride contaminated and carbonated concrete. Can be used for both conventionally reinforced and prestressed or post-tensioned concrete.
- **Low maintenance** - requires no external power source or system monitoring.
- **Measurable** - anode performance can be easily monitored.
- **Mechanically bonded** - anchors ensure bond to structure is maintained throughout the service life of the anode.
- **Fire and heat resistance** - rated 5VA under UL 94, the

anode housing uses uPVC material which is combustible but also naturally flame retardant and will not cause, support or encourage the development of fire.

- **Cathodic protection** - can be designed to meet ISO12696 and NACE / AMPP cathodic protection performance criteria.
- **UV resistant** - anode housing is made with uPVC which is the same material used in vinyl house siding. uPVC has excellent durability in outdoor environments, including high UV degradation resistance.

PRODUCT INFORMATION

Packaging

Component	Details
Sika® Galvashield® SM-DAS Anodes	5 anodes per box
End Caps	Covers end of anode and the wired connection
Track Cover Strips	Covers anchoring track
Insulated Anchors	Stainless steel anchors with insulated sleeves
Sika® Galvashield® Embedding Mortar	20 kg bags - one bag will embed ~15 to 17 anodes
Custom V-Notched Trowel	For effectively applying Sika® Galvashield® Embedding Mortar
Wire Connectors	User friendly and secure wire connectors
Gel Insulator Boxes	Insulates wire connection from moisture
Din Rail Mounting Kit	Optional anode horizontal installation assistance kit
U-Bracket Mounting Kit	Optional anode vertical or overhead installation assistance kit
Rivet Connection Kit	For making connection to embedded steel

NOTE: Inter-anode Junction Covers are additionally available and are used for chained installations.

Shelf Life

2 years when stored correctly.

Storage Conditions

Store in dry conditions in the original unopened boxes. Avoid extremes of temperature and humidity. Units should be installed within two years.

Dimensions

Typical Anode Unit Sizes*

	Sika® Galvashield® SM-DAS	Sika® Galvashield® SM-DAS-X
Zinc Weights	0.89 kg/m	2.45 kg/m
Lengths	100 cm Recommended	100 cm Recommended
Anode Dimensions	150 mm x 26 mm	160 mm x 30 mm

*Sika® Galvashield® SM-DAS Anodes are customised to meet specific project requirements. Typical properties are listed above.

Design Considerations

Sika® Galvashield® SM-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 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® SM-DAS-X Anodes are recommended. For assistance with system design, please contact Sika® Technical Services.

System Structure

Level of Protection	Description	Sika® Galvashield® SM-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® SM-DAS anodes may form part of an overall structure rehabilitation program to extend the service of life of corroding structures. Where structural damage exists, consult a suitably qualified Structural Engineer. Sika® Galvashield® SM-DAS anodes may be used in conjunction with Sika's extensive range of Total Corrosion Management products to fully protect the structure. For more information on corrosion mitigation strategies and options, contact Sika® Technical Services.

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).

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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