

Surface mounted distributed anode corrosion protection system

Introduction

Galvashield® SM-DAS is a surface mounted distributed anode system designed to provide corrosion control or cathodic protection to steel reinforced concrete structures.

Galvashield® SM-DAS anode units are distributed across reinforced concrete and masonry structures to provide global corrosion protection or can be used to target specific sections with high corrosion risk such chloride contaminated concrete around joints and areas with high corrosion potential. 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 customized to meet specific project requirements.

Design Criteria

Galvashield® SM-DAS anode design and spacing are varied to meet project objectives. Anode spacing ranges depending upon project objectives, the severity of the service environment and expected service life of the anode components.

Contact Fosroc for specific advice and design assistance.

Installation Instructions

Surface preparation

Before starting the installation, ensure that the concrete surface is clean and even. Complete any necessary concrete repairs, and remove any dirt, loose barriers, or coatings. The surface must not have any relief changes of more than 3mm. Blow the surface clean of any dust and blast media with dry compressed air, and vacuum clean if required. Prior to the installation of the anode, the concrete must be wet with water to a point where surface saturated dry conditions are achieved.



Anode layout and reinforcing location

Determine the location for the anode installation and use a chalk line to mark the top line of the anodes. Along the length of the anode installation, use a rebar locating device to find reinforcing steel to make a connection within 100mm of each end of the anode. If you are linking multiple units together, consult the site engineer for steel connection requirements and maximum spacing.

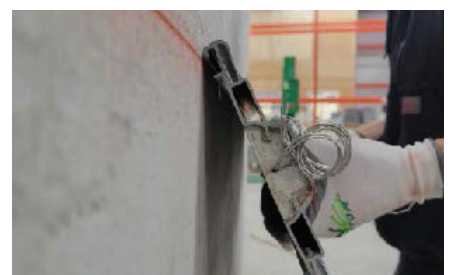


Optional mounting track installation

The Galvashield® Surface Mounted DAS can optionally be installed using our Mounting Track kit. Install the mounting track along the chalk line, placing it near the center of the desired anode location. Mark the points for the drilled holes for the concrete anchors using the holes on the mounting track. Drill a 6mm hole at each mark. Once the holes have been drilled, anchor the mounting track with supplied anchors. Avoid overtightening to prevent deformation of the mounting track.



If the Mounting Track was used, hang the anode onto the mounting track and position it to mark locations for drilling anchor holes. Remove the anode from the mounting track and drill the marked locations with a 6mm drill bit.



Galvashield® SM-DAS Installation

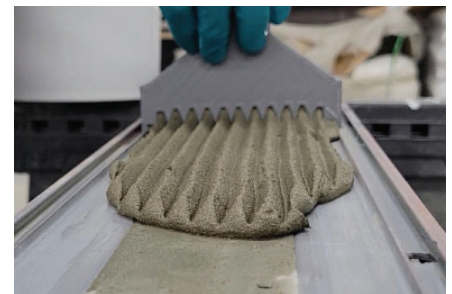
Anode anchor marking without track

Hold the anode in position, then mark locations for drilling anchor holes. Mark the remaining anchor holes located on the wiring track of the anode. Remove the anode and drill the marked locations with a 4mm drill bit.



Mortar anode

Use Galvashield® Embedding Mortar to fill the area between the anode and the surface of the concrete. Mix the mortar as directed. If the concrete surface contains large voids or depressions, fill them with mortar to ensure no air gaps are left behind the anode. Use the custom V-notched trowel tool to spread the mortar completely along the entire length of the anode, leaving a ridged profile of the mortar to ensure proper bonding of the anode to the concrete.



Hang and anchor

Saturate concrete surface with water before applying anode. Ensure no standing water. Carefully line up the anode to the drilled anchor holes. The mounting track can be used to help with alignment. Press the anode firmly onto the concrete, allowing mortar to spread out under the anode and eliminating any voids or gaps. Fasten the anode to the concrete using supplied anchors.



Anode wiring connection

Make connections to steel as per engineer's instructions. Anode wires are connected to the steel connections at both ends of the anode using the wiring connector provided. If the anode connection wire requires insulation stripping, remove insulation to the length specified by the connector. Lift levers fully and place wires into the connector, one wire per connection hole. Fold down the lever and firmly click into the locked position—test the connection by lightly tugging each wire. Encapsulate the entire connection inside of the gel-filled insulation box provided, closing firmly.



Install cover strips

Once the anode is firmly anchored, install wiring track cover strips. Strips can be installed by sliding them in from the end, and the curved lip should be toward the outer edge of the anode. Alternatively, it can be placed on the wiring track and tapped into place with a rubber hammer or mallet.



Galvashield® SM-DAS Installation

Install end caps

End caps are installed over the anode connections by either sliding over the ends or clicking over the top. The cap should cover the steel connection location and the anode-to-steel connection. The cap is then secured in place with two concrete anchors, taking care not to interfere with the anode or steel connections. The cap may be sealed to the concrete surface and the anode surface with caulking or epoxy.



Precautions

Galvashield® SM-DAS anodes may be part of an overall structure rehabilitation program to extend the service of life of corroding columns and piles. Where structural damage exists, consult a structural engineer.

Galvashield® SM-DAS anodes may be used in conjunction with Vector's extensive line of galvanic corrosion protection products to protect other portions of the structure. For more information on corrosion mitigation strategies and options, contact Fosroc.

Storage

Store in dry conditions in the original unopened containers for up to one year from date of manufacture. Systems should be installed within one month of opening container. Take special precaution not to damage anode components during transportation or while handling. Avoid extremes of temperature and humidity.

Health & Safety

Contact with moisture can release alkalis which may be harmful to exposed skin. Anode components should be handled with suitable gloves and other personal protective equipment in accordance with standard procedures for handling cement and other alkaline materials. Additional safety information is included in the Safety Data Sheet.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

