

PRODUCT DATA SHEET

Sika® FerroGard®-860 CP

(formerly MProtect 860CP)

High-Performance anode for reinforced concrete Cathodic Protection (CP)

PRODUCT DESCRIPTION

Sika® FerroGard®-860 CP is a unique 2-component highly durable anode designed specifically for impressed current cathodic protection of steel reinforced concrete structures which have active corrosion.

The system may also be used as a preventative measure against the onset of corrosion in structures which may be at risk.

The material comprises a powder component and a liquid polymer which is applied at 8 mm thickness using the wet spray technique.

The electro catalytic coating on the highly conductive fibres has a very low consumption rate and anode interfacial reactions are uniformly distributed throughout the body of the material resulting in a long and maintenance free life.

USES

- Highway structure
- Car parks
- Buildings
- Bridges
- Marine structures

PRODUCT INFORMATION

Packaging

Sika® FerroGard®-860 CP is supplied pre-packed. Part 1 is in 25 kg plastic-lined paper sacks and Part 2 in 20 litre pails.

Shelf Life

If stored in accordance with manufacturer's instructions in unopened containers Part A and Part B are both 12 months.

Storage Conditions

Sika® FerroGard®-860 CP should be stored under cover and clear of the ground. Storage conditions should be dry. Do not stack more than 6 sacks or 2 pails high. Protect from moisture and frost; preferably store at above 15°C but in any case not below 5°C.

Density

2200 kg/m³

CHARACTERISTICS / ADVANTAGES

- Long life and maintenance-free
- Efficient electrical current distribution and high conductivity
- Excellent adhesion
- Impact and abrasion resistant
- Excellent concrete compatibility
- Cement-based system
- Vapour permeable
- Thin layer, low weight application
- No mesh anode required
- Wet-spray applied
- Low rebound
- Single application

APPROVALS / STANDARDS

Sika® FerroGard®-860 CP has been tested by The Swedish National Testing and Research Institute: Freeze/thaw resistance: SP, Sveriges Provnings-och Forkningsinstitut, No.95B4,1845.

Adhesion and compressive strength: SP Sveriges Provnings-och Forkningsinstitut, No. 94B4.5018A

TECHNICAL INFORMATION

Resistance to Impact	Impact resistance (NF P 18854)	
	28 days ambient cure	No Cracking/debonding
	2 months sea water ponding	No Cracking/debonding
	2 months motor oil ponding	No Cracking/debonding
	56 days freeze/thaw cycles (NaCl)	No Cracking/debonding
Compressive Strength	92 N/mm ² (28 days)	
Flexural Strength	15 N/mm ² (28 days)	
Tensile Strength	7 N/mm ² (28 days)	
Tensile adhesion strength	Bond strength 3,8 N/mm (failure in concrete)	(SS13 72 31)
Thermal Compatibility	0,02 kg/m ³ (Freeze-Thaw, 56 days)	(SS13 72 44)

APPLICATION INFORMATION

Consumption	Coverage is dependent upon various factors, including the method of working and substrate condition.
Yield	When one 25 kg sack of Part A is mixed with 5 litres of Part B liquid polymer, approximately 13.8 litres of Sika® FerroGard®-860 CP will be produced. Approximately 73 sacks of Part A and 18 pails of Part B are required to produce approximately 1m ³ of mixed material.
Layer Thickness	The recommended applied thickness of Sika® FerroGard®-860 CP is 8 mm.

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.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Preparation of the concrete substrate is vital to achieve optimum performance and long service life from the cathodic protection installation. Remove all surface coatings, defective renders, foreign matter, formwork treatments, laitance, algae and other contaminants that may adversely affect the bond. Use abrasive blasting or high pressure water jetting. Do not use vibrating or high impact methods; such methods increase the risk of inducing micro cracks that may affect the adhesion and long-term durability of the anode system. The prepared substrate should have a pull-off strength of at least 1,5 N/mm². Spalled or delaminated areas and cracks should be repaired with approved SikaEmaco concrete repair

products. Hairline cracks may be left untreated. Under no circumstances should any cracks be injected with materials, which will insulate areas from the CP system. Areas of low cover and exposed steel must be treated or the cover built up to that required.

Primary Anode *

A primary anode is an essential requirement for a Sika® FerroGard®-860 CP-system. The required number and configuration for correct current distribution will be project specific and is, therefore, a CP design decision. As a guide for a plane surface, primary anodes should be placed at 2 m centres (maximum) with a 1m clearance from the edges of the anode zone. The primary anode should be fixed to the prepared substrate by plastic anchors. The configuration should allow the connection to the rectifier to be made outside the anodic zone and in duplicate as a minimum. Suitable primary anode materials include surface activated titanium mesh ribbon.

* Contact your Sika office for advice.

MIXING

It is essential that the temperature of both components of Sika® FerroGard®-860 CP is at least 15°C before mixing. Use approximately 4,7 litres (4,1 litres minimum - 5,3 litres maximum) of Sika FerroGard 860 CP Part B for each 25kg sack of Sika® FerroGard®-860 CP Part A.

Using a power mixer (no tumbling motion), add the powder to the liquid. Mix until the powder is wet throughout and maximum dispersion of all ingredients has been obtained. Allow the mix to stand for 5 to 10 minutes.

Re-mix adding a little additional liquid when required, without exceeding the maximum 5,3 litres. Do not overmix.

APPLICATION

The temperature should be above 5°C during application and for at least 24 hours thereafter. Apply Sika® FerroGard®-860 CP when no rainfall is expected or take the necessary protective measures using, for example, plastic sheets.

Under extremely hot or windy conditions it is advised that hot substrates are cooled with potable drinking water and that the application should take place between sunset and sunrise. Use sunlight-reflecting pump lines; provide wind protection and clean equipment frequently.

Sika® FerroGard®-860 CP should be applied to surfaces that have been well dampened but which are free from standing water.

Sika® FerroGard®-860 CP has been designed for spray application only, using wet-spray concrete techniques. Suitable spray equipment, essential for successful application, includes hand-held hopper guns and worm-driven equipment. Contact your local Sika office for advice.

Application is carried out in two stages. Spray the first coat to a thickness of 1 to 2 mm. Immediately after spraying, and while still wet, broom the material into the concrete surface. Spray the second coat immediately onto the first (still wet) coat to the recommended thickness of 8 mm, using pre-placed battens to achieve the 8 mm thickness. Apply to a limited area only to prevent premature drying of the first coat. If, for whatever reason, the first coat has set, apply a new broom coat before building up to the 8 mm thickness.

CURING TREATMENT

Sika® FerroGard®-860 CP is self-curing. Under poor conditions, for example where rapid drying may occur (hot and/or windy conditions), protect by covering the Sika® FerroGard®-860 CP with plastic sheets or by broadcasting dry silica sand onto horizontal surfaces after the surface film has formed.

When mixed the product has a pot life of approximately 30 minutes at 21°C.

After the final spray application, the following curing times should be used as a guide before Sika® FerroGard®-860 CP is subjected to foot traffic:

Temperature, °C	Time (minimum), hours
35	25
20	72
5	120

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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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