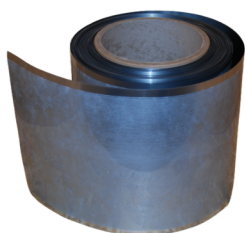


Technical Data Sheet

Zinc Layer Anode (ZLA®)

Zinc sacrificial anode for corrosion control of steel in concrete



Description

Zinc Layer Anode is a zinc foil coated with an ionically conductive adhesive. The adhesive is covered with a liner to help protect it from contamination. Before application, the protective liner is removed from the adhesive and the **Zinc Layer Anode** is adhered to the clean, bare concrete surface. The ionically conductive adhesive enables the anode to be securely adhered to the surface of the concrete structure.

Application

ZLA is a product used in the protection of reinforced concrete constructions against rebar corrosion. **ZLA** is a sacrificial galvanic anode specifically designed for giving electrochemical protection, known as cathodic protection, for the prevention of corrosion of the concrete steel reinforcement.

The current required for cathodic protection is provided by the galvanic link of the steel reinforcement and the zinc layer being part of the **ZLA**. No external power source or what so ever is necessary. The **ZLA** has been therefore designed to function as an additional anode replacing all the anodic locations of the reinforced concrete construction. It is applied upon the concrete surface. The zinc layer is electrically linked with the steel reinforcement.

In this way the electric circuit is completed because electric current flows through the adhesive layer and concrete by means of ionic conductance (both materials are so called electrolytes).

Since zinc has a natural potential which is more electronegative than the steel reinforcement, the zinc becomes the anode after installation and forms a new corrosion cell in which the reinforcement is forced to be the cathode. In this way the corrosion process of the steel within the concrete is transferred to the zinc layer avoiding future spalling and cracking of the concrete.

Features of application

- in combination with concrete patch repair
- bridge deck or beam supports and columns
- balcony facings and concrete facades
- concrete slabs
- large surface area's

Typical features

Typical corrosion defined as galvanic corrosion occurs when two different types of metal are in contact with each other and surrounded totally or partially by an electrolyte.

The metal with the most negative electrochemical potential will corrode or sacrifice itself to protect the other metal with a more positive electrochemical potential.

Each layer of **ZLA** will create an extended electric field around itself within the electrolyte which is called "throwing power" which is the protecting zone of the anode.

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| COMPOSITION | WEIGHT G/M ² | THICKNESS MICRON |
|-------------------------------|-------------------------|------------------|
| ZINC SHEET 250 | 1750 | 250 |
| IONICALLY CONDUCTIVE ADHESIVE | 1200 | 900 (+/- 100) |
| TOP LINER | 200 | PET FILM |
| TOTAL | 3150 +/- 5% | |
| ZINC SHEET 450 | 3150 | 450 |
| IONICALLY CONDUCTIVE ADHESIVE | 1200 | 900 (+/- 100) |
| TOP LINER | 200 | PET FILM |
| TOTAL | 4550 +/- 5% | |
| ADHESIVE ON CONCRETE* | | |
| 10 HOURS AFTER APPLICATION | > 0,120 MPA | > 0,120 MPA |
| 48 HOURS AFTER APPLICATION | > 0,140 MPA | > 0,140 MPA |
| ELECTRICAL CONDUCTIVITY | | |
| | VOLUME RESISTIVITY | < 10 KOHM.CM |
| MINIMUM T FOR APPLICATION | | 4 °C |
| OPERATION TEMPERATURE °C | | -4 +50 °C |

*This test was done on clean and dry concrete.

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Dimensions and storage

| | |
|-------------|---|
| ROLL WIDTH | 25CM |
| ROLL LENGTH | 20M (250 & 450 MICRON ZINC SHEET) |
| SHELF LIFE | CA. SIX MONTHS FROM DATE OF RECEIPT BY CUSTOMER WHEN STORED IN ORIGINAL PACKAGING AT <22°C AND 50% R.H. |



Performance characteristics

Depolarization of Reinforcing Steel according to the international standard EN/ISO12696
“Cathodic protection of steel in concrete”.

*The zinc may show some self-corrosion over time by discolouring or white deposit. Because of the purity of the zinc this is completely normal and does not effect the performance.



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| | | |
|-------------------------|---|---|
| ZINC LAYER ANODE | ISO 12696:2011 § 6.2.6.2: Adhesive zinc-sheet anode | CE 0100 |
| BASIC CHARACTERISTICS | PERFORMANCE | HARMONISED TECHNICAL SPECIFICATION |
| PERFORMANCE CRITERIA | <p>A) INSTANT OFF MORE NEGATIVE THAN 720 mV AG/AGCL 0,5M KCL.</p> <p>B) INSTANT OFF DECAY ≥ 100 mV WITHIN A 24H PERIOD.</p> <p>C) INSTANT OFF DECAY ≥ 150 mV FOR PERIODS GREATER THAN 24HRS.</p> | <p>ISO 12696:2011</p> <ul style="list-style-type: none"> • PROVIDED THAT §4.2 IS RESPECTED • CRITERIA AS PER §8.6 A, B OR C • REFERENCE TO §8.5 NOTE 2 AND §8.6 NOTE 8, NOTE 10. |
| ANODE CURRENT OUTPUT | <p>A) OPEN CIRCUIT POTENTIAL OF ZLA $\geq N1000$ mV AG/AGCL 0,5M KCL.</p> <p>B) ANODE CURRENT > 1 mA/M² OF ZLA</p> | <p>EN 1504-9 PRINCIPLE 10 METHOD 10.1</p> |
| OH- FORMATION AT STEEL | MAX. 0.0373 MMOL OH- /MA | <p>EN 1504-9 PRINCIPLE 7, METHOD 7.3 & 7.5</p> |
| INCREASING RESISTIVITY | LIMITING MOISTURE CONTENT BY SURFACE TREATMENTS, COATINGS OR SHELTERING | <p>EN 1504-9 PRINCIPLE 8 METHOD 8.1</p> |
| CONTROL OF ANODIC AREAS | LIMITING OXYGEN CONTENT (AT THE CATHODE) BY SURFACE COATING | <p>EN 1504-9 PRINCIPLE 9 METHOD 9.1</p> |

All technical data stated in this Technical Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control. The information, and, in particular, the recommendations relating to the application and end-use of CorrPRE's products, are given in good faith based on CorrPRE's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with CorrPRE's recommendations.

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Approved by: R. Giorgini