



Proceq introduces the fastest Corrosion Analyzing Instrument

How does a Contractor limit Corrective Maintenance on Reinforced Concrete to Areas that really require it?

Repairing Reinforced Concrete

Typically there are 5 steps to this activity:

1. Removal of the existing concrete
2. Appraisal of the reinforcement steel
3. Cleaning the steel/ Pre-treatment of the steel
4. Re-profiling of the concrete
5. Protection of the concrete

Each step is expensive. For example, step 1 is typically carried out with the help of a high pressure water jet system to remove contaminated concrete to a depth below the reinforcement. Corrosion analysis allows the contractor to limit this maintenance task to the areas where it is really required.

Application

In contrast to spot checks of carbonation depth and chloride penetration, the Canin⁺ system with the new Wheel Electrode allows a rapid, comprehensive test of the site and provides a fast assessment of locations where corrosion is likely to take place. Detailed analysis of the data is made easy with the Canin ProVista software. The new Wheel Electrodes (1 and 4-wheel versions) allow very fast measurements of large areas.

Customer Quote

"The Canin⁺ is a professional and helpful tool for the localization and measuring of active corrosion. The procedure is virtually non-destructive and by carrying out a grid measurement, it allows a comprehensive statement to be made on the status of the building."

*concrete concepts Ingenieurgesellschaft mbH, Munich
Proceq customer since 2006*

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Application

Typically useful for

<ul style="list-style-type: none"> • Rapid scanning of large areas using the 1 and 4-Wheel Electrodes 	<ul style="list-style-type: none"> • Sites where the testing time is limited, e.g. bridge closures
<ul style="list-style-type: none"> • Accurate location of areas of active rebar corrosion 	<ul style="list-style-type: none"> • Civil contractors, Building inspectors, Civil engineers, Building refurbishment programmes, Pre-emptive maintenance

Corrosion of Rebars in Concrete

Reinforced concrete will invariably be subjected to a corrosion process that ultimately leads to a total failure of the structure. Accurate field potential measurements aid in detecting corrosion in rebars. Corrosion of steel in concrete is an electrochemical process. A potential field can be measured on the concrete surface by the use of an electrode, known as a half-cell and a high-impedance voltmeter. The Canin⁺ Corrosion Analyzing Instrument highlights corrosion activity before rust becomes visible. Early detection is a key factor in preventing an unanticipated structural failure.

The right Probe for the Application

With its comprehensive selection of probes, the Canin⁺ system is ideally suited both for localized checks and also for the rapid scanning of large sites where access time is limited.

Standard Copper / Copper Sulphate Rod Electrode for localized measurements.

1-Wheel Electrode for fast scanning of large areas.

4-Wheel Electrode for maximum measurement speed on large areas.

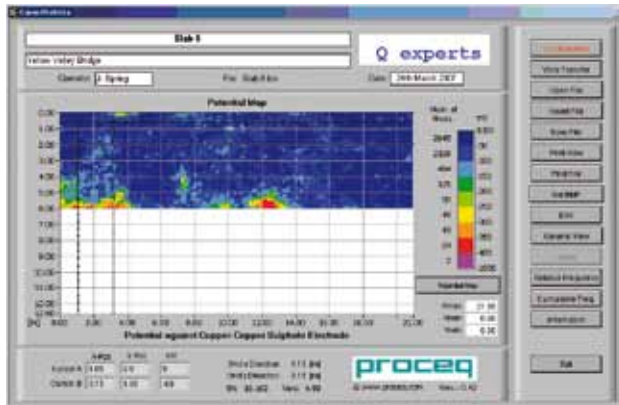


Canin⁺ is ideally suited for assessment of corrosion potentials on large areas of 8,000 m² (83,000 sq.ft.) or multiples thereof, depending on the individual selectable grid size. 235,000 values can be stored in the indicating device. Up to 240 measurement values are displayed at a time in easy-to-read grey-scale allowing an on-site plausibility check of the readings. A menu-driven approach facilitates simple operation using just nine keys. The display with backlight allows the user to work on sites with low visibility, e.g. underground car-parks.

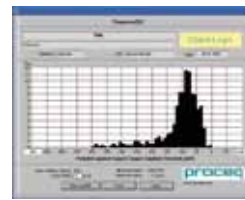
Canin ProVista – The right Software to analyze the Data

The Windows based software Canin ProVista makes it possible to download, present and edit data measured by the Canin⁺ Corrosion Analyzing Instrument in a fast and easy way using any PC. The program generates a potential map, a relative frequency and a cumulative frequency diagram and provides a chipping graph. This statistical presentation is the basis for an efficient interpretation of the half-cell potentials by the corrosion engineer.

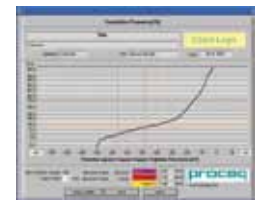
The software allows the engineer to rotate and mirror files. Single potential maps can be combined to form a complete graph representing the total investigated surface area. These features support the fast generation of measurement reports. Data can be easily exported to third party software for further processing.



Potential Map



Frequency Curve




Cumulative Frequency Curve


Technical Information Canin⁺

General	
Temperature range:	0° to 60°C
Display:	128 x 128 pixel graphic LCD with backlight
Impedance:	10 MΩ
Memory:	Non-volatile memory for simultaneous storage of up to 235'000 potential measurements (980 pages @ 240 measurements each organised in up to 71 objects)
Data Output:	RS 232 interface, with USB adapter
Battery Operation:	Six LR 6 batteries, 1.5 V for up to:
	- 60 hours (or 30 hours with activated backlight) during potential measurement
	- 40 hours (or 20 hours with activated backlight) during resistivity measurement
Case Dimensions:	580 x 480 x 210 mm (22.8" x 18.9" x 8.3")
Potential Measurement	
Measurement range:	-999 mV to +340 mV
Resolution:	1mV
Data Transfer:	CANIN ProVista software for downloading data and evaluation on PC

Ordering Information

Part No.	Description	
330 00 201	Canin⁺ Configuration with Rod Electrode Basic equipment Indicating device Canin ⁺ , carrying strap, protection sleeve for indicating device, transfer cable, USB-serial adapter, operating instructions, carrying case Canin ⁺ Rod Electrode accessories Rod electrode with spare parts, electrode cable 1.5 m (4.9 ft.), cable coil 25 m (82 ft.), Canin ProVista PC software on memory stick, bottle with copper sulphate 250 g	
330 00 205	Canin⁺ Configuration with Rod and Wheel Electrodes Basic equipment (see item 330 00 201) with Rod Electrode accessories (see item 330 00 201) Wheel Electrode accessories 1-Wheel Electrode system, tool kit to wheel electrode system, bottle with citric acid 250 g	

Accessories

330 01 004	Canin⁺ 4-Wheel Electrode system, 4-electrode cable, bottle with copper sulphate 250 g, bottle with citric acid 250 g, carrying case for the 4-Wheel system	
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330 01 001	Canin ⁺ 1-Wheel Electrode
330 00 259	Canin ⁺ Rod Electrode
330 00 286	Cable coil, l=25 m (82 ft), with clamp
330 00 322	Telescopic extension for Rod Electrode, with 3 m cable for CANIN ⁺
330 00 320	Felt hoop for Wheel Electrode
330 00 285	Copper sulphate 250 g
330 00 290	Citric acid 250 g

Standard warranty

- Electronic indicating unit: 24 months
- Mechanical & electromechanical parts & accessories: 6 months

Extended warranty

When acquiring a Canin⁺ unit, max. 3 additional warranty years can be purchased (for the electronic indicating unit). The additional warranty must be requested at time of purchase or within 90 days of purchase.

A more detailed list of accessories and spare parts is available on www.canin-concrete-corrosion.com

Standards and Guidelines applied

BS 1881, Part 201 (1986); UNI 10174 (1993)
 ASTM C876-91 (1999)
 DGZfP B3 (2008); SIA 2006 (1993)
 RILEM TC 154-EMC (2003)

Service and Warranty Information

Proceq is committed to providing complete support for the Canin⁺ by means of our global service and support facilities. Furthermore, each Canin⁺ Electronic indicating unit is backed by the standard Proceq 2-year warranty and extended warranty options.

Subject to change without notice.

All information contained in this documentation is presented in good faith and believed to be correct. Proceq SA makes no warranties and excludes all liability as to the completeness and/or accuracy of the information. For the use and application of any product manufactured and/or sold by Proceq SA explicit reference is made to the particular applicable operating instructions.

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