



# Polarization Coupons

Datasheet DS 036

Rev.00

## IR Drops and measuring errors

Ohmic voltage drops (“IR drops”) caused by the circulation of cathodic currents are known to cause **substantial measurements error** when measuring the state of protection of cathodically protected structures.

In particular, IR drops tends to **make it appear that the structure is better protected than it really is**.

To allow the measure of the “true” polarization of a structure without the influence of IR drops, it is necessary to disconnect, at the same time, all the C.P. current sources.

This may be really difficult and unpractical, especially in presence of galvanic anodes and multiple T/R units.

It has been demonstrated that the “OFF” potential of a cathodically protected structure tends to be identical to the true potential measured on its larger coating holiday.

The exposed surface of a **polarization coupon will simulate the polarization behavior of a coating holiday**, allowing the estimation of the “true” polarization potential.



## Polarization Coupons

For all these situations, polarization coupons are the best choice for a sound and performing C.P. design.

Polarization coupons are constructed using a small steel plate, with exposed surfaces generally varying between 1 and 50 cm<sup>2</sup>, which can be directly installed in the Reference Electrode or **encased in a small “stand-alone” enclosure**.



## Use of polarization coupons

The test cable from the coupon shall be connected inside a Junction box with a negative return cable directly connected to the structure.

Measure of the coupon’s polarization will be performed connecting the test leads of a **high-impedance multimeter** (>10 MΩ) between the coupon’s test cable and a reference electrode, shortly interrupting the connection between the coupon and the structure.

Polarization coupons can be built with different dimensions and steel grade to match every specific applications.

Feel free to contact our technical Dept. for any question or suggestion you may need about the best use of Polarization Coupons for your C.P. application.

