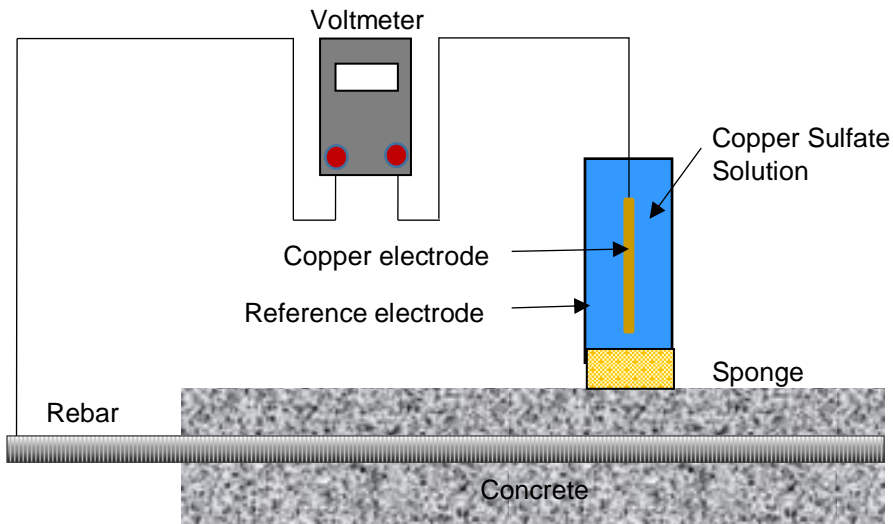


## Schematic of Half-Cell Potential Measurement



The Half-Cell Potential (HCP) test is a non-destructive testing method to determine corrosion activity of reinforcing steel within concrete structures. This test can be carried out on structural members regardless of their size and depth of concrete cover and can be carried out at any time during the life of concrete member. HCP Test is done in accordance with ASTM C876 standard.

It consists of copper-sulphate electrode, electrical junction, voltmeter and electrical lead wires. First of all, the surface on the which the test to be carried out shall be wetted. Then, the circuit shall be made by connecting electrical lead wires to the reference rebar on one end. While on the other end reference electrode with saturated sponge solution shall be place on testing point and the readings are measured on voltmeter for corresponding corrosion potential of concrete. completed with electrical lead wire.

The corrosion of steel in an electro-chemical process whose corrosive behaviour can be characterised by measuring half-cell potential. The greater the potential higher the risk of corrosion taking place. This test uses electrical circuitry with voltmeter to measure the potential difference between the reinforcing steel and a copper-sulfate reference electrode in contact with the concrete surface on one end and wire connection to the reference rebar on the other end.

This method is cheap, simple to perform quick and easy analysis. Whereas, if the concrete surface is dry and have presence of contaminants then obtained results are not reliable. Proper identification and interpretation of potential measurements gives the accurate and reliable results.

## Half-Cell Equipment



## Field Test



## Results

