



Rapid Chloride Permeability Test

The **PROOVE'it Lite** is the 60 Volts light version of the well known PROOVE'it system and has been optimized for users who are interested on evaluating the resistance of concrete to the ingress of chloride ions in two ways:

- By determining the total electrical charge that passes through a saturated concrete specimen by applying an electrical potential across the specimen in accordance with AASHTO T 277 or ASTM C1202. This is known as the "Coulomb Test" or the "Rapid Chloride Permeability Test (RCPT)."
- By measuring the current passing through a saturated concrete specimen and determining the bulk conductivity in accordance with ASTM C1760.

For more detailed electrical migration tests as Nordtest Build 492 or AASHTO TP-64 standards which require variable voltage, the PROOVE'it complete 8 channels, 5-60 V, version is needed.

PROOVE'it Lite works with the same specimen cells as the PROOVE'it complete version and is also provided with all the unique capabilities of the PC Software and Report Manager.



Test smart – Build right

www.germann.org

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Applications

In cement based materials such as concrete, the electrical conductivity has a theoretical relationship with important durability parameters of concrete such as the chloride diffusion coefficient and the chloride migration coefficient that are used for durability or service life design. Research shows strong correlations and that literature may be used for estimating those parameters.

The related standard test methods are also widely used for performance-based quality control and quality assurance of concrete.

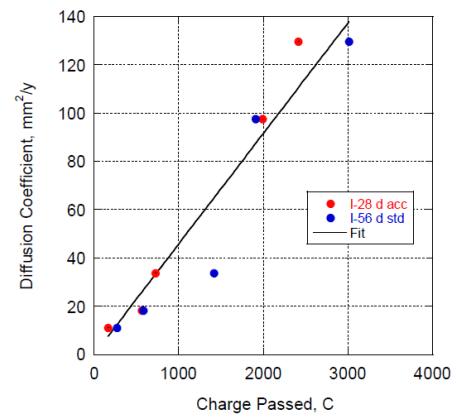
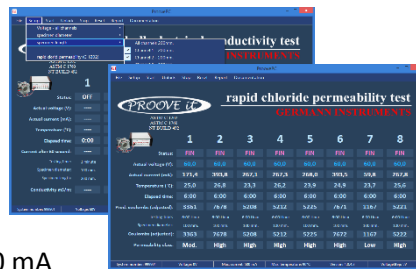
ASTM C1202 concrete classification values

Coulombs	Permeability Class	Typical of
>4000	High	$w/c^* > 0.5$
4000-2000	Moderate	$w/c = 0.4$ to 0.5
2000-1000	Low	$w/c < 0.4$
1000-100	Very Low	Latex-modified concrete
<100	Negligible	Polymer concrete

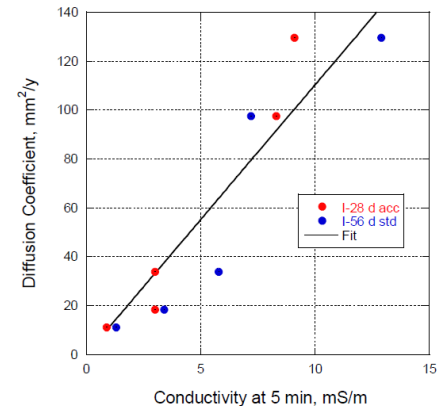
* w/c = water-cement ratio

Features (software included)

- ✓ 4 channels to test simultaneously
- ✓ 60V \pm 0.1V, current accuracy \pm 0.1 mA
- ✓ Short circuit protection system
- ✓ Verification Kit accessory for 30 to 300 mA
- ✓ Automatic temperature record and 90°C limit control
- ✓ Programmable testing logging interval time as required
- ✓ Cycling testing option for effect of curing duration
- ✓ Auto-correct Coulomb value option in case specimen's size differs from the ASTM C1202 95 mm.
- ✓ Report Manager for delivering test documents.
- ✓ Robust auto-seal cells available in different versions



Examples of correlations of RCPT and Bulk Conductivity values with the Apparent Chloride Diffusion Coefficient, (Obla, Kim, and Lobo, 2014)



PROOVE it cells



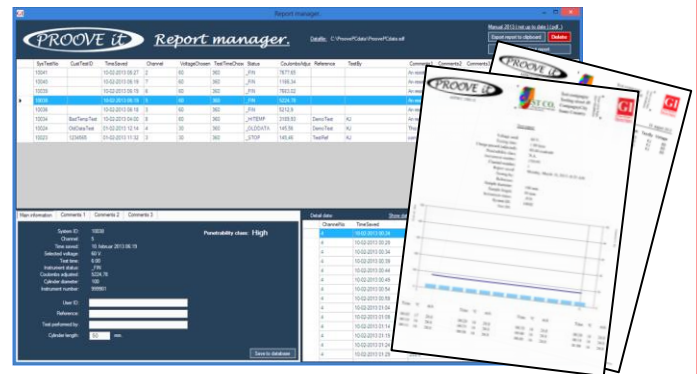
Standard PR-1000 cell for ASTM C 1202



Special PR-1100 cell with cooling ribs. An option to control the heat produced in specimens of highly permeable concrete



PR-1200 cell adapted for high length specimens when performing ASTM C 1760



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