

RAPID CHLORIDE PERMEABILITY TESTER (AUTOMATIC DATA)



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TECHNICAL DATASHEET

Advanced Rapid Chloride Permeability Tester (RCPT) System

Standard Compliance: ASTM C1202, AASHTO T277, ASTM C1760



Product Overview

The **Rapid Chloride Permeability Tester (RCPT)** system is engineered to evaluate the electrical conductance and resistance of concrete specimens against chloride ion penetration. By accelerating chloride migration using a 60 V DC electric field over a 6-hour test cycle, the system provides rapid quantitative data to determine the long-term durability of concrete structures exposed to aggressive or marine environments.

Key Features

- **Simultaneous Multi-Channel Testing:** Available in 4, 6, or 12-channel configurations to test multiple concrete samples concurrently.
- **Automated Data Logging:** Automatically logs current, voltage, and temperature profiles at preset intervals (every 30 minutes) and computes total harge passed in Coulombs.
- **Safety Protection:** Integrated short-circuit and over-current protection on every individual channel.
- **Advanced Software Integration:** Real-time graphical plotting (Current vs. Time) with direct report export options to Excel and PDF formats.
- **Rigorous Sample Preparation Kit:** Includes a heavy-duty vacuum desiccator and high-capacity vacuum pump for flawless specimen water-saturation as required by standards.

Complete System Components (Standard Supply)

Item Code / Component	Description	Qty
RCP-M4 / M6	Main Measurement Unit with Integrated Data Logger & Touchscreen	1
RCP-CELL	Acrylic Test Cell Assembly (Resistant to 3% NaCl & 0.3N NaOH)	4 to 12
TEMP-PRB	PT-100 Temperature Probes with high accuracy	Matching channels
DES-300	Vacuum Desiccator Tank (Approx. 300 mm diameter)	1

Item Code / Component	Description	Qty
VP-128	Dual-Stage Vacuum Pump (Capacity: up to 128 L/min)	1
ACC-KIT	Connection cables, silicone gaskets, tubing, and user manual	1 set
RCP-SW	PC Software for test monitoring and data management	1 License

Technical Specifications

Parameter	Specification
Test Channels	4, 6, or 12 Independent Channels
Applied Voltage	60 V DC $\pm$ 0.1 V (Continuously stabilized)
Current Measurement Range	0 to 500 mA (Accuracy: $\pm$ 0.5%)
Temperature Range & Accuracy	0 to 100 °C (Accuracy: $\pm$ 1 °C)
Data Logging Interval	User-programmable (Standard interval: every 30 minutes)
Specimen Dimensions	Standard 100 mm diameter x 50 mm thickness concrete disc
Vacuum Pump Performance	Ultimate vacuum up to -97 kPa

Parameter	Specification
Power Supply	220-240 V, 50/60 Hz, Single Phase
PC Communication	USB port / Serial Interface

Concrete Permeability Classification (ASTM C1202 Reference)

- **> 4,000 Coulombs:** High Permeability
- **2,000 – 4,000 Coulombs:** Moderate Permeability
- **1,000 – 2,000 Coulombs:** Low Permeability
- **100 – 1,000 Coulombs:** Very Low Permeability
- **< 100 Coulombs:** Negligible Permeability