

Request for Quote

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ONE CAPITOL HILL
PROVIDENCE RI 02908

CREATION DATE : 16-SEP-16
BID NUMBER: 7550955
TITLE: RAPID PERMEABILITY TEST FOR CONCRETE - DOT

BID CLOSING DATE AND TIME: 11-OCT-2016 11:00:00

BUYER: Hill, Lisa
PHONE #: 401-574-8118

**B
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DOT ACCOUNTS PAYABLE
TWO CAPITOL HILL, RM 230
SMITH ST
PROVIDENCE, RI 02903
US

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DOT MATERIALS
TWO CAPITOL HILL, RM 018
PROVIDENCE, RI 02903
US

Requisition Number: 1478899

Line	Description	Quantity	Unit	Unit Price	Total
1	<p>QUESTIONS MAY BE ADDRESSED TO LISA HILL AT LISA.HILL@PURCHASING.RI.GOV NO LATER THAN OCTOBER 4, 2016 AT 4:00 P.M.</p> <p>PERMA2 TEST PACKAGE 115/230V</p>	1.00	Each		

Delivery: _____

Terms of Payment: _____

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer

**STATE OF RHODE ISLAND
DIVISION OF PURCHASES
BID NO. 7550955 – RAPID PERMEABILITY TEST FOR CONCRETE**

Rapid Permeability Test for Concrete

- Compliant with AASTHO T277
- A minimum testing capacity of four (4) - 4" diameter specimens simultaneously, complete with test cells including all components, plus a spare set of consumable parts for each cell (minimum of conductive mesh and specimen gasket set, included in bid price)
- Cells capable of forming a watertight seal without the use of materials that require curing prior to each test
- Self-contained fully automated control system with no manual monitoring required and de-energizing of cells at completion of the test
- Display showing current status of test and retaining data at completion of test
- 375 mA per cell capacity, with total system capacity of 1500 mA
- Minimum Interval logging time of five (5) minutes
- Measurement accuracy of 1 mA, minimum
- Data system for transfer of test results to Windows-based PC (included in bid price)
- Verification method for proper system operation (included in bid price)

Note: No specimen vacuum preparation system is required.

Price must include shipping (FOB Destination).

Standard Method of Test for

Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

AASHTO Designation: T 277-15

ASTM Designation: C1202-12

AASHTO

1. SCOPE

- 1.1. This test method covers the determination of the electrical conductance of concrete to provide a rapid indication of its resistance to the penetration of chloride ions. This test method is applicable to types of concrete where correlations have been established between this test procedure and long-term chloride ponding procedures such as those described in T 259. Examples of such correlations are discussed in References 1 through 5.¹
- 1.2. The values stated in SI units are to be regarded as the standard.
- 1.3. The text of this standard references notes and endnotes which provide explanatory materials. These notes and endnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.
- 1.4. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
 - R 39, Making and Curing Concrete Test Specimens in the Laboratory
 - T 23, Making and Curing Concrete Test Specimens in the Field
 - T 24M/T 24, Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
 - T 259, Resistance of Concrete to Chloride Ion Penetration
- 2.2. *ASTM Standard:*
 - C670, Standard Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

3. SUMMARY OF TEST METHOD

- 3.1. This test method consists of monitoring the amount of electrical current passing through 50-mm (2-in.) thick slices of 100-mm (4-in.) nominal diameter cores or cylinders during a 6-h period. A potential difference of 60 V dc is maintained across the ends of the specimen, one of which is immersed in a sodium chloride solution and the other in a sodium hydroxide solution. The total charge passed, in coulombs, has been found to be related to the resistance of the specimen to chloride ion penetration.

- 10.3. *Specimen Mounting (Rubber Gasket Alternative)*—Place a 100-mm (4-in.) outside diameter by 75-mm (3-in.) inside diameter by 6-mm (0.25-in.) circular vulcanized rubber gasket in each half of the test cell. Insert the sample and clamp the two halves of the test cell together to seal.

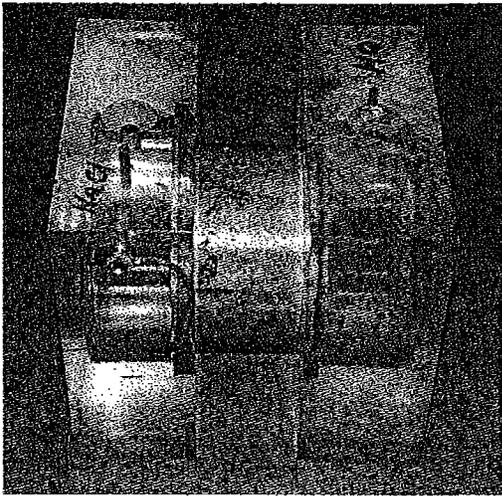


Figure 4—Specimen Ready for Test

- 10.4. Fill the side of the cell containing the top surface of the specimen with 3.0 percent NaCl solution. (That side of the cell will be connected to the negative terminal of the power supply in Section 10.5.) Fill the other side of the cell (which will be connected to the positive terminal of the power supply) with 0.3 Normal NaOH solution.
- 10.5. Attach lead wires to the cell banana posts. Make the electrical connections to the voltage application and data readout apparatus as appropriate: for example, for systems listed in Sections 7.7.1 through 7.7.5, connect as shown in Figure 5. Turn the power supply on, set to 60.0 ± 0.1 V, and record the initial current reading. Temperatures of the specimen, the applied voltage cell, and the solutions shall be 20 to 25°C (68 to 77°F) at the time the test is initiated, that is, when the power supply is turned on.

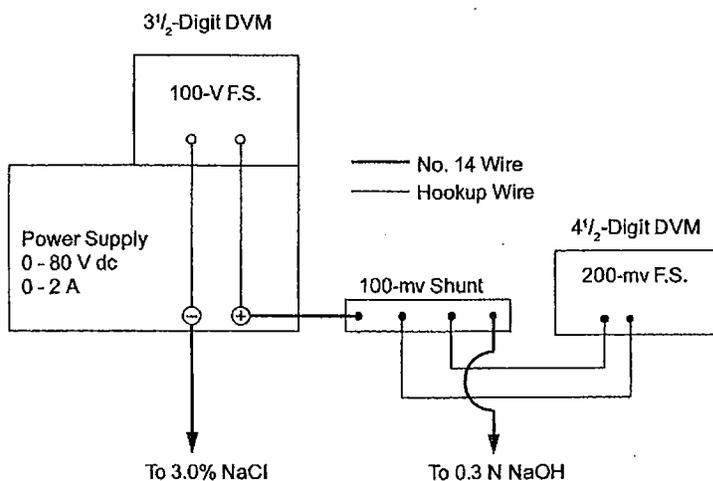


Figure 5—Electrical Block Diagram (example)

PART 600

CONCRETE

SECTION 601

PORTLAND CEMENT CONCRETE

601.01 DESCRIPTION. This work consists of furnishing, placing, curing, and finishing Portland cement concrete for bridges, pavements, structures, and incidental construction in accordance with these Specifications, the Special Provisions and Contract Documents. Any modifications of these general requirements will be given in the specific requirement for each item unless otherwise indicated in the Contract Documents.

Concrete shall consist of a homogeneous mixture of Portland cement, coarse aggregate, fine aggregate, air entrainment, water, admixtures and pozzolan (when used), mixed in proportions herein specified.

601.01.1 Classification. Portland cement concrete shall be proportioned with the required cement content for each class and shall be thoroughly mixed to the consistency herein after specified.

Each class of concrete shall be used in that part of the work in which it is called for on the Plans, Proposals, Special Provisions, or where otherwise directed.

The classes of concrete required for the particular work, unless otherwise indicated or superseded by Special Provisions, are shown in Table 1. All concrete mixes are subject to the approval of the Engineer. The minimum compressive strength of each class of concrete shall be as listed in Table 2 or as specified on the Plans.

Various sizes of approved coarse aggregate for the classes of concrete may be combined during the batching operation in the amount of each fraction of aggregate size required to obtain the specified gradation. When testing aggregates to determine compliance with a specified gradation, fractions will be tested separately and combined mathematically or combined mechanically in predetermined proportions, and tested.

Table 2

Class¹	B	A	XX	HP	MC²	Z
Minimum Cementitious Content, lb/yd ³	400	400	500	500	500	500
Maximum Cementitious Content, lb/yd ³	700	700	700	700 ⁵	600	700
Maximum w/cm	0.55	0.45	0.42	0.40	0.40	0.42
Acceptance Criteria						
Consistency Range ³ , AASHTO T119 Slump, in.	2-4	2-4	2-4	2-4	2-4	<1
AASHTO T23 Minimum Compressive Strength, psi						
28 days	3000	3000	4000	5000	3500	5000
56 days	---	---	---	---	5000	---
Air Content Range, AASHTO T152, %	5-9	5-9	5-9	5-9	5-9	6-9
Prequalification Criteria						
Chloride permeability, AASHTO T277, coulomb						
28-day standard cure				≤2000	≤3000	
28-day accelerated cure				≤1000	≤1500	
Maximum 28-day drying shrinkage, ASTM C157, %				-0.040	-0.045	
Maximum Adiabatic temperature rise, degree F ⁴					75	

Table 2 Footnotes:

1. A single concrete mixture may be used for multiple classifications if performance and prequalification criteria are satisfied.
2. Class MC concrete may have a total supplementary cementitious content of 75 percent by weight of total cementitious material when using either ground-granulated blast-furnace slag meeting the requirements of AASHTO M 302, or combinations of slag and other supplementary cementitious materials. Maximum cement replacement by fly ash or other pozzolan meeting requirements of AASHTO M 295 is 30 percent by weight. Maximum cement replacement by silica fume meeting the requirements of AASHTO M 307 is 7 percent by weight.
3. Slump range measured at the point of discharge. The Contractor shall submit for approval by the Engineer, the target slump range for each element. Slump shall not exceed 4 inches for surfaces sloped greater than 4 percent. If additional workability is desired the Engineer may allow an increase of the maximum specified slump to 6 inches if an AASHTO M 194 Type A - Water Reducing Admixture is used, or an increase of up to 9 inches if an AASHTO M 194 Type F or G - High Range Water Reducing admixture is used.

AASHTO M 194 Type F or G - High Range Water Reducing Admixture is required when concrete is to be placed by pumping equipment. Admixtures must be used in accordance with manufacturers' recommended

Contract Terms and Conditions

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Terms and Conditions

BID STANDARD TERMS AND CONDITIONS

TERMS AND CONDITIONS FOR THIS BID

RIVIP INFO - BID SUBMISSION REQUIREMENTS

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**MAILING ADDRESS FOR BID PROPOSALS ISSUED BY THE STATE OF RHODE ISLAND,
DIVISION OF PURCHASES**

All Bid Proposals must be submitted by mail or hand delivered to:

- State of Rhode Island
- Department of Administration
- Division of Purchases, Second floor
- One Capitol Hill
- Providence, RI 02908-5855

DIVESTITURE OF INVESTMENTS IN IRAN REQUIREMENT:

No vendor engaged in investment activities in Iran as described in R.I. Gen. Laws §37-2.5-2(b) may submit a bid proposal to, or renew a contract with, the Division of Purchases. Each vendor submitting a bid proposal or entering into a renewal of a contract is required to certify that the vendor does not appear on the list maintained by the General Treasurer pursuant to R.I. Gen. Laws §37-2.5-3.