

State of Illinois  
Illinois Department of Transportation  
Division of Highways  
Bureau of Materials and Physical Research  
Springfield

POLICY MEMORANDUM

Revised: March 15, 2013

30-12.1

This Policy Memorandum supersedes number 30-12.0 dated October 15, 2012.

TO: REGIONAL ENGINEERS AND HIGHWAY BUREAU CHIEFS  
AND RESISTIVITY TESTING LABORATORIES

SUBJECT: MINIMUM LABORATORY REQUIREMENTS FOR RESISTIVITY TESTING

**1.0**      **DEFINITIONS**

**AASHTO R 18** - The American Association of State Highway and Transportation Officials (AASHTO) Standard for "Establishing and Implementing a Quality System for Construction Materials Laboratories." The principles of AASHTO R 18 are used by the Bureau of Materials and Physical Research (BMPR) to administer the minimum laboratory requirements for **Resistivity Testing Laboratories**.

**RESISTIVITY TESTING LABORATORY** - Any laboratory that performs Illinois Modified AASHTO T 288 test. This includes **Contractor**, **Producer**, or **Consultant** laboratories.

**BMPR LABORATORY** - The Department's central laboratory maintained and operated by the Bureau of Materials and Physical Research (BMPR).

**CONSULTANT** - A Private firm which performs construction materials testing for the **Department**, **Producer**, or **Contractor**.

**CONTRACTOR** - The individual, firm, partnership, joint venture, or corporation contracting with the **Department** for performance of prescribed work.

**DEPARTMENT** – Illinois Department of Transportation (IDOT), including its Districts and Central Bureau offices.

**PRODUCER** - An individual or business entity providing materials for performance of prescribed work.

**TECHNICAL MANAGER** - The individual with responsibility for the overall operations, condition, and maintenance of the **Resistivity Testing Laboratory**.

**2.0**      **SCOPE**

This policy governs the minimum qualifications for **Resistivity Testing Laboratories** operated by **Contractors**, **Producers** and **Consultants**.

### 3.0 **PURPOSE**

To ensure that **Resistivity Testing Laboratories** are equipped and maintained at a uniform and high level of quality.

To establish a uniform procedure for evaluating and approving **Resistivity Testing Laboratories**.

### 4.0 **REFERENCE DOCUMENTS**

IDOT Standard Specifications for Road and Bridge Construction.

Applicable Special Provisions.

AASHTO, ASTM, and IDOT Test Procedures.

### 5.0 **RESISTIVITY TESTING LABORATORY REQUIREMENTS**

All resistivity testing for **Department** contracts shall be performed by **Resistivity Testing Laboratories** approved by the **Department** and listed on the **Approved List of Laboratories to Perform Resistivity Test** as maintained by the **Department**.

### 6.0 **QUALITY SYSTEM CRITERIA**

#### 6.1 **Inspection**

Each **Resistivity Testing Laboratory** approved by the **Department** to perform Illinois Modified AASHTO T 288 test shall have been inspected by the **BMPR Laboratory**.

#### 6.2 **Technical Manager**

Each **Resistivity Testing Laboratory** shall have a **Technical Manager** (however titled) who has overall responsibility for the technical operations of the **Resistivity Testing Laboratory**. The **Technical Manager** shall be responsible for equipment maintenance and calibration, maintaining records, and ensuring that current test procedures are utilized.

#### 6.3 **Equipment Calibration and Verification**

The **Resistivity Testing Laboratory** or designee shall calibrate or verify all testing equipment associated with tests performed by the **Resistivity Testing Laboratory**. The frequency shall be per the test method.

#### 6.4 **Proficiency Testing**

**Resistivity Testing Laboratory** qualifications will include successful comparison of Illinois Modified AASHTO T 288 testing by the **Resistivity Testing Laboratory** and **BMPR Laboratory**. Results will be considered in the overall evaluation of the **Resistivity Testing Laboratory** to conduct Illinois Modified AASHTO T 288.

Each **Resistivity Testing Laboratory** approved by the **Department** to perform Illinois Modified AASHTO T 288 may be required to periodically participate in round-robin proficiency testing conducted by the **Department**.

Round-robin proficiency testing will be administered by the **BMPR Laboratory**. Round-robin proficiency tests shall begin within 2 weeks of receipt of materials, and results shall be submitted to the **BMPR Laboratory** within 2 weeks of completion.

## 6.5 **Records**

Test Records – Each **Resistivity Testing Laboratory** shall maintain test records which contain sufficient information to permit verification of any test report.

Records Retention – Each **Resistivity Testing Laboratory** shall maintain documentation of the internal quality controls. At a minimum, the records shall include:

1. Documentation of assignment of personnel responsible for internal quality controls.
2. Documentation of equipment calibration.
3. Logs of sample pick-up shall be maintained for a minimum period of three years.
4. All documentation shall be maintained and available to **Department** inspection for a period of three years.

Equipment Calibration and Verification Records – Calibration records shall include the minimum information listed below. **AASHTO R 18** provides additional guidance for calibration of most testing equipment.

1. Description
2. Model & Serial Number
3. Name of person calibrating
4. Calibration equipment used  
(e.g., standard weights, proving rings, thermometers)
5. Date calibrated & next due date
6. Reference procedure used
7. Results of calibration /verification

Technical Training and Evaluation Records – Each **Resistivity Testing Laboratory** shall maintain records of technician training and evaluation.

## 6.6 **Publications**

Each **Resistivity Testing Laboratory** shall maintain a current copy of the test procedure performed.

## 7.0 **LABORATORY INSPECTIONS**

Inspection by the **BMPR Laboratory** of the **Contractor, Producer, or Consultant** laboratory is a prerequisite for approval as a **Resistivity Testing Laboratory**.

An inspector from the **BMPR Laboratory** will conduct the scheduled visit. The **Contractor, Producer, or Consultant** shall be responsible for payment of transportation, per diem (meals), lodging, and incidental travel costs incurred by the **BMPR Laboratory** inspector when:

1. The **Contractor, Producer, or Consultant** laboratory facilities are located further than 50 miles outside the border of Illinois, and
2. The trip from the **BMPR Laboratory** to the **Contractor, Producer, or Consultant** laboratory facility, the inspection and the return trip to the **BMPR Laboratory** cannot be completed within one day's normal work hours of 8:00 AM to 4:30 PM.

Reimbursement for travel costs shall be provided no later than 30 calendar days after receipt of costs submitted by the **Department**.

The **BMPR Laboratory** will provide written notification to the **Resistivity Testing Laboratory**, indicating the approval. Approval will be based on the results of the **BMPR Laboratory** inspection and the results of the Illinois Modified AASHTO T 288 test by the **Resistivity Testing Laboratory**.

## 8.0 APPROVED LABORATORY LIST

The **Department** will maintain a list of approved **Resistivity Testing Laboratories** on the Internet. The list will be entitled "Approved List of Laboratories to Perform Resistivity Test" and will include the following information:

1. Laboratory Name
2. Address
3. Contact Person and Phone No.
4. Approved Test
5. Website

The **Department** may remove a **Resistivity Testing Laboratory** from the list if deficiencies in the facility, equipment, or test procedure are indicated through inspections, proficiency testing, or other circumstances, unless the **Resistivity Testing Laboratory** takes immediate action and corrects the deficiency.



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