

Project Procedures Guide

Sampling Frequencies for Materials
Testing and Inspection

February 1, 2002



Illinois Department of Transportation

Bureau of Materials and Physical Research
126 East Ash Street / Springfield, Illinois / 62704-4766



Illinois Department of Transportation

Departmental Policies

Policy MAT-9
February 1, 2002

PROJECT PROCEDURES GUIDE

1. POLICY.

The Department shall publish and maintain a Manual for use by materials and construction personnel in determining sampling frequencies and inspection procedures for highway construction.

2. PURPOSE.

The purpose of this Policy is to provide for the publication of a Manual to serve as a guide and reference source for determining sampling frequencies and inspection procedures for highway construction.

3. GUIDELINES FOR IMPLEMENTATION.

- A. The Manual outlines the procedures for sampling and inspecting materials used in highway construction.
- B. This Manual applies to all projects constructed on the State system and all Local Agency improvement projects with federal, state, or MFT funds. Specific exceptions to this Manual for Local Agency work are indicated in the current Local Roads and Streets Manual(s) or by circular letter.
- C. The responsibilities of the Resident and Contractor are outlined to ensure that the materials and construction procedures used meet specification requirements and produce work strictly in accordance with the intent of the contract, plans, and specifications.
- D. Sampling schedules are provided which list the minimum frequencies at which samples and measurements shall be taken by project, plant, and District personnel.

4. RESPONSIBILITIES.

- A. The Bureau of Materials and Physical Research is responsible for issuing this Policy.

- B. The Bureau of Local Roads and Streets is responsible for incorporating the applicable requirements into its statewide policy manual(s).
- C. The Division of Highways' Districts are responsible for ensuring compliance with this Policy.
- D. The Engineer of Tests of the Bureau of Materials and Physical Research, Materials Testing Section, should be contacted when questions arise regarding the application of these procedures.

5. ACCESSIBILITY.

Copies of the Project Procedures Guide may be obtained from the Bureau of Highways Administration in the Harry R. Hanley Building, 2300 South Dirksen Parkway, Springfield, Illinois, 62764. This policy and the corresponding Manual may be examined in the Hanley Building Library.

Questions regarding the Project Procedures Guide may be directed to the Bureau of Materials and Physical Research, 126 East Ash Street, Springfield, IL 62704-4766.

CLOSING NOTICE.

Manual: Project Procedures Guide, February 1, 2002

Supersedes: Project Procedures Guide, Departmental Policy MAT-9, May 1, 1997.

Approval:



Director of Highways

February 1, 2002

Date

PREFACE

This Project Procedures Guide is intended for use as a resource in determining reasonable sampling frequencies and inspection procedures for materials used in highway construction. The sampling and testing schedules established herein should not be rigidly adhered to without regard to job conditions. Good judgment on the part of the project inspectors is always essential for proper control of the work. This guide seeks to establish materials sampling and testing uniformity throughout the State and indicates the minimum amount of sampling and testing that should be performed under normal job conditions. Factors such as consistency, methods, equipment, and weather may enter into a decision to vary from the frequencies mentioned herein.

Reliance should never be placed entirely on the numerical results of sampling and testing when determining the acceptability of the materials and construction work. Observation of the actual construction operations and processes is necessary to ensure that the materials incorporated and the construction procedures utilized are acceptable and in accordance with the contract, plans, and specifications.

Cooperation between everyone involved in the construction effort will help ensure our ultimate goal: the timely completion of a high quality highway system to serve the people of Illinois.

Eric E. Harm, P.E.
Engineer of Materials
and Physical Research

TABLE OF CONTENTS

	PAGE
<u>SECTION 100. - DEFINITIONS</u>	
100.01 Definitions	1
<u>SECTION 200. – MATERIALS ACCEPTANCE OVERVIEW</u>	
200.01 Materials Acceptance Overview	4
200.05 Method of Acceptance	4
200.10 Evidence of Materials Inspection	6
<u>SECTION 300. - RESPONSIBILITIES OF RESIDENT</u>	
300.01 Duties	8
300.05 Evidence of Materials Inspection	8
<u>SECTION 400. - RESPONSIBILITIES OF CONTRACTOR</u>	
400.01 General	9
400.05 Contractor's Responsibilities	9
<u>SECTION 500. - REPORTING RESULTS OF SAMPLING AND TESTING</u>	
500.01 Reporting	10
500.05 Resident's File	11
500.10 Temporary Items	11
<u>SECTION 600. - SMALL QUANTITIES</u>	
600.01 Procedures	12
600.05 Restrictions	12
600.10 Project Certification	12
<u>SECTION 700. - APPLICATION TO LOCAL AGENCY PROJECTS</u>	
700.01 Scope	13
700.05 Sampling	13
700.10 Distribution of Reports	13
<u>SECTION 800. - CERTIFICATION OF MATERIALS</u>	
800.01 Project Materials Certification	14
800.05 Role of Bureau of Materials and Physical Research	14
800.10 Project Certification Review	14
800.15 Certification Letter Example	15

TABLE OF CONTENTS
CONTINUED

	PAGE
<u>SECTION 900. - TRAINED TECHNICIANS</u>	
900.01 Purpose	17
900.05 Reporting	17
900.10 Independent Assurance Testing	17
900.15 Testing Areas	18
Table 1: Aggregate Gradation Training Requirements	19
Table 2: Hot Mix Asphalt Training Requirements	20
Table 3: Cast-in-Place Concrete Training Requirements	21
Table 4: Precast and Precast, Prestressed Concrete Training Requirements	22
Table 5: Soils Density Training Requirements	23
<u>SECTION 1000. – QUALIFIED LABORATORIES</u>	
1000.01 Purpose	24
1000.05 Requirements	24
1000.10 Reporting	24
<u>ATTACHMENTS</u>	
1. IDOT Materials Stamps, Tags, and LA-15	25
2. Sources of Information for Inspectors	28
3. Field Acceptance	29
4. Guidelines for Use of MISTIC "TYPE TEST" for Major Material Categories	46
<u>SAMPLING SCHEDULES</u>	
Introduction	47
1. Embankments, Subgrades, and Granular Courses	48
2. Non-Bituminous Stabilized Subbase, Stabilized Base Course, and Stabilized Shoulders	50
3. Non-QC/QA Concrete	52
4. Non-QC/QA Bituminous Concrete	55
<u>APPENDIX</u>	
Departmental Policy MAT-15, <i>Quality Assurance Procedures for Construction</i>	57

SECTION 100. - DEFINITIONS

100.01 DEFINITIONS

1. **BMPR Laboratory** - The **Department's** central laboratory, maintained and operated by the Bureau of Materials and Physical Research (BMPR) in Springfield.
2. **Department** – The Department of Transportation of the State of Illinois with principal offices of business at Springfield, when the State is the awarding authority.

The County Board, when a County is the awarding authority.

The Council, the City Council, or the President and Board of Trustees, when a city, village, or town is the awarding authority.

The County or Municipality and the Illinois Department of Transportation when the Illinois Department of Transportation is the awarding agency and the County or Municipality is supervising construction. (Article 101.14, *Standard Specifications for Road and Bridge Construction, 2002*)

3. **District Laboratory** – A **Department**-operated laboratory used for design, **Quality Control, Quality Assurance**, independent assurance, or acceptance testing. **District Laboratories** are required to be qualified in accordance with the current departmental policy, "Quality Assurance Procedures for Construction" (in the appendix), and the current BMPR lab inspection policy.
4. **District Inspector** – District inspection personnel not assigned to the project.
5. **Engineer** – The Director of Highways of the Department of Transportation of the State of Illinois; or authorized representative limited by the particular duties entrusted to that person, when the State is the awarding authority.

The County Superintendent of Highways, when Cook County is the awarding authority, and the County Engineer, when any other county is the awarding authority. The County Superintendent of Highways, when the project is in Cook County, the County Engineer when the project is in any other county and the Illinois Department of Transportation when the Illinois Department of Transportation is the awarding authority and the County is supervising construction.

The City Engineer or Engineer employed by the municipality, when a city, village, or town is the awarding agency. The City Engineer or Engineer employed by the municipality, and the Illinois Department of Transportation when the Illinois Department of Transportation is the awarding agency and a city, village, or town is supervising construction. (Article 101.16, *Standard Specifications for Road and Bridge Construction, 2002*)

6. **Evidence of Materials Inspection** – The minimum proof that **Method of Acceptance** sampling and testing has been performed. **Evidence of Materials Inspection** categories are discussed in Section 200.10, EVIDENCE OF MATERIALS INSPECTION.
7. **Exception** - Any material that is incorporated into the contract work that is not in close conformity with the approved plans and specifications based on **Method of Acceptance** sampling and testing. Also, any significant item that received less than the State's usual testing or inspection is considered an **Exception**.
8. **Inspector** – The authorized representative of the Engineer assigned to make detailed inspection of any or all portions of the work or material. (Article 101.19, *Standard Specifications for Road and Bridge Construction, 2002*)
9. **Method of Acceptance** – Means of determining whether material supplied is in compliance with specifications. **Method of Acceptance** sampling and testing categories are discussed in Section 200.05, METHOD OF ACCEPTANCE.
10. **MISTIC** – Materials Integrated System for Test Information and Communication. **Department**-wide database containing materials inspection and test information.
11. **Plant Inspector** – Inspection personnel assigned to a production facility.
12. **Private Laboratory** – Any construction materials testing or design facility not operated by the **Department**. This includes contractor, producer, consultant, or Local Agency testing facilities performing **Quality Control, Quality Assurance**, acceptance, independent assurance, or any other required or contracted testing on a **Department** project. **Private Laboratories** are required to be qualified in accordance with the current departmental policy, "Quality Assurance Procedures for Construction" (in the appendix), and the current BMPR lab inspection policy.
13. **Project Inspector** – Inspection personnel assigned to the project.
14. **Qualified Laboratory** – "Laboratories that are capable as defined by appropriate programs established by each SHA (State Highway Agency). As a minimum, the qualification program shall include provisions for checking test equipment, and the laboratory shall keep records of calibration checks." (FHWA 23 CFR 637.203) Minimum requirements are discussed in Section 1000, QUALIFIED LABORATORIES.
15. **Quality Assurance (QA)** – Materials sampling and testing performed by the **Inspector** that validates the quality of the product and verifies the producer's **Quality Control** process.
16. **Quality Control (QC)** – Materials sampling and testing performed as process control to ensure specification compliance. Performed a) by the contractor, producer, or consultant under **QC/QA programs**, and b) by the **Inspector** under non-**QC/QA** programs.

17. **Quality Control/Quality Assurance (QC/QA) Programs** - Materials sampling and acceptance testing programs which allow contractor **Quality Control** sampling and testing in conjunction with the **Department's Quality Assurance** and independent assurance sampling and testing.
18. **Resident Engineer/Resident Technician (Resident)** – The authorized representative of the Engineer in immediate charge of the engineering details of a construction project. (Article 101.34, *Standard Specifications for Road and Bridge Construction*, 2002)
19. **Temporary Items** – Materials, items, or equipment that perform a function during construction, but are not a permanent part of a “completed” project. They may be removed when no longer necessary (e.g., traffic control, fences), or they may have a single-use short life (e.g., straw bales).
20. **Trained Technicians – Department**, Local Agency, contractor, or consultant personnel with demonstrated and documented capability to perform the applicable inspection and testing. Minimum training requirements for aggregate, Hot Mix Asphalt (HMA), Portland cement concrete (PCC), and soils are described in Section 900, TRAINED TECHNICIANS.
21. **Visual Examination** – Acceptance or rejection of material based on an assessment of its markings, physical dimensions, obvious defects or damage, and close conformity with contract specifications, but no RE memo or input into **MISTIC** is required.

NOTE: These definitions are boldfaced throughout the text.

SECTION 200. – MATERIALS ACCEPTANCE OVERVIEW

200.01 MATERIALS ACCEPTANCE OVERVIEW

The following is a brief overview of the six key steps involved in the materials acceptance process. Additional detail is provided in subsequent sections of this manual.

1. INSPECTION OF MATERIALS – Physical testing or visual inspection of the materials for compliance with the specifications.
2. EVIDENCE OF MATERIALS INSPECTION – The minimum proof that **Method of Acceptance** sampling and testing has been performed.
3. DOCUMENTATION OF INSPECTION – Documentation that the materials received on the job site were accompanied by adequate **Evidence of Materials Inspection** as described in Step 2 above. This documentation should be included as part of the project files.
4. INPUT INTO MISTIC - Input of assigned material quantities into **MISTIC** by District materials personnel.
5. PROJECT MATERIALS CERTIFICATION REVIEW – The District Materials Office compares the quantities on the final payment estimate with the inspection reports on file with the **Department**.
6. PROJECT ACCEPTANCE – Upon completion of the materials certification review, the District Construction or District Local Roads Office proceeds with all actions necessary to accept the project.

200.05 METHOD OF ACCEPTANCE

Method of Acceptance refers to the means of determining whether material supplied is in compliance with specifications. **Method of Acceptance** sampling and testing categories are listed below. The abbreviation in parentheses denotes the **MISTIC** designations for each **Method of Acceptance**.

- MANUFACTURER'S CERTIFICATION (CERT) - When **Department** testing is not practical or small quantities are involved, a manufacturer's or producer's certification may be used to accept material. The certification must represent the materials or items being accepted. The certification must also indicate compliance with the applicable specification(s). This method of accepting materials is used for items such as epoxy, grass seed, and steel frames and grates. Whenever possible, the dimensions and appearance of the item should be visually examined to verify specification compliance.

- APPROVED MATERIALS LISTS (LIST) - Some manufactured products are placed on an approved materials list (available at the **Department's** web site, www.dot.state.il.us, under "Doing Business/Materials & Physical Research – Approved List for Materials"). This method of accepting material is used for items such as concrete admixtures, bridge seat sealers, and asphalt release agents. These materials are not under **QC/QA** or certification programs, but may be used without additional plant or jobsite testing.
- QUALITY CONTROL/QUALITY ASSURANCE (QCQA) - The material is produced under an IDOT **QC/QA program**, where **QC** is by the producer and **QA** by the **Department**. Material acceptance criteria are included in a specification, special provision, or BMPR Policy Memorandum. This method of accepting material is used for items such as aggregates, bituminous concrete, Portland cement concrete, and precast concrete products. These producers/materials may be included on an approved materials list.
- CERTIFIED SOURCE (QUAL) - A source that conducts an internal sampling and testing program in conjunction with **Department** source and random destination sampling and testing. Once a producer is certified to manufacture or produce specific products, such materials may be accepted for incorporation into the contract without additional jobsite testing. The **Resident/Inspector** is required to perform a **Visual Examination** at the jobsite. This method of accepting material is used for items such as PG asphalt binder, emulsified asphalt, Portland cement, and reinforcement bars/fabric.
Refer to the applicable BMPR Policy Memorandum for specific requirements.
- TESTING PROGRAM (TEST) - Materials are sampled at the source or jobsite by **Department** personnel or contractual representatives of the **Department** and tested at the jobsite, or in a **District Laboratory**, the **BMPR Laboratory**, or a **Private Laboratory**, to verify specification compliance. This method of accepting material is used for items such as paint, curing compound, bearing pads, and plastic pipe.
Jobsite sampling and testing is always a prerogative of the **Department**.
Investigative samples may be taken to verify certain characteristics at the time of inspection.
The minimum required investigative samples are listed in Sampling Schedules 1 through 4.
- VISUAL ACCEPTANCE (VIS) - Acceptance or rejection of material based on an assessment of its markings, physical dimensions, obvious defects or damage, and close conformity with contract specifications. No lab or field tests are required. Visual acceptance is used when sampling is impractical, destructive tests are not practical, or no test method is available for use. Visual acceptance applies to most small quantities. This method of accepting material is used for items such as traffic signal components and survey markers.

200.10 EVIDENCE OF MATERIALS INSPECTION

Construction materials do not just “appear” on the jobsite. In most cases, the material has been pre-inspected or may have been produced under a **Department**-approved **Quality Control** program. **Evidence of Materials Inspection** is the minimum proof that **Method of Acceptance** sampling and testing has been performed. **Evidence of Materials Inspection** categories are listed below.

- BBS 59 - Report of acceptance of fabrication of structural steel. The Bureau of Bridges and Structures usually performs this type of inspection and testing.
- BILL OF LADING - A shipping ticket that accompanies a product to the job site and which identifies the product, source, and lot.
- CERT - Manufacturer’s written certification that indicates material complies with the specifications or contract.
- CERT STAMP - Material is stamped “Certified” by the manufacturer (as instructed by BMPR Policy Memorandum), which indicates compliance with the specifications.
- DAILY PLANT REPORTS - For PCC and HMA, reports generated that provide mixture test results and other production data. For non-**QC/QA** projects, Daily Plant Reports are the responsibility of the **Inspector**. For **QC/QA** projects, refer to the appropriate special provisions to determine responsibility for Daily Plant Reports.
- IL OK - Material is stamped by an IDOT **Inspector** with an “IL OK” stamp indicating prior inspection and acceptance. An inspection tag may be used as **Evidence of Materials Inspection** and approval.
- LA 15 - This **Department** form is a supplier’s certification indicating material is from approved stock. The form is sometimes used as a Bill of Lading to indicate prior approval. The form should include supplier, proper contract/job designation, material description, manufacturer, specific approved material (test ID number, lots, or batches), and quantity. Additional information on LA 15’s is provided in Attachment 1.
- LIST - The material appears on a current list of **Department**-approved products or approved sources found at the **Department’s** web site, www.dot.state.il.us, under “Doing Business/Materials & Physical Research”. Contact the inspecting district’s Materials Office for information on aggregates.
- MARK - A commercial label, tag, or other marking which indicates product specification compliance and/or an approved source/manufacturer.
- TEST - Approved test result available via the **MISTIC** system or from locally performed lab or field tests (e.g., soil density).

- TICK - A ticket from an approved source indicating **Department** material or aggregate gradation, job designation, purchaser, and weight (if applicable).
- VIS - A RE memo denoting visual inspection is required in the project file, and input into **MISTIC** is required.
- VIS EXAM - Same as VIS, but no RE memo or input into **MISTIC** is required.

SECTION 300. – RESPONSIBILITIES OF RESIDENT

300.01 DUTIES

The **Resident** is responsible for ensuring all materials are inspected and approved. It is understood that the **Resident** may not perform all these duties personally. The **Resident** should ensure that the inspection, sampling, and testing are done in accordance with the instructions in this Guide and in the pertinent specifications and policies listed in Attachment 2. The **Resident** will communicate with the District Materials Office when work is in progress to ensure that all testing is accomplished.

300.05 EVIDENCE OF MATERIALS INSPECTION

The **Resident** should be certain that only materials which have been properly inspected and approved are used in the work, as documented in Article 106.03, *Standard Specifications for Road and Bridge Construction*, 2002.

1. If material arrives on the job without **Evidence of Materials Inspection**, the **Resident** should contact the District Office immediately for information. If a **Resident** decides to accept material not in conformance with the pertinent contract requirements based on acceptance samples and tests, the conditions under which the material was incorporated into the project must be documented as an **Exception**. **Exception** documentation must be forwarded to the District Materials Engineer and a copy retained in the **Resident's** file.
2. The **Resident** should not include any item of material on a progress payment estimate for which there is no **Evidence of Materials Inspection** or approval.
3. Force Account Work and Agreed Price Pay Items – Inspection documentation requirements for materials incorporated into force account and agreed price pay items are the same as for standard contract pay items, except as follows:

If no specification is implied, there is no requirement to prepare a materials inspection report. Visual inspections of non-critical items are adequate for small quantities as defined in Section 600, SMALL QUANTITIES.
4. The **Resident/Inspector** has the right and the responsibility to question, sample, and/or reject any material arriving on the project.

SECTION 400. – RESPONSIBILITIES OF CONTRACTOR

400.01 GENERAL

It is the Contractor's responsibility to provide materials that meet specification requirements and to produce work strictly in accordance with the plans and specifications. (Articles 104.01, 106.01, 106.02, *Standard Specification for Road and Bridge Construction, 2002*) In an effort as large and complex as the highway program, it requires the closest cooperation and communication between the Contractor, the **Resident**, and the supplier to assure proper inspection coverage.

400.05 CONTRACTOR'S RESPONSIBILITIES

- As far in advance as possible, furnish the District Office and the **Resident** information of the sources of materials that will be used on the project. (Articles 106.01, 106.05, *Standard Specification for Road and Bridge Construction, 2002*)
- Order materials as early as possible, notifying the District Office or the Bureau of Materials and Physical Research so that proper arrangements may be made for inspection. (Articles 105.12, 106.01, 106.03, 106.04, 106.05, *Standard Specification for Road and Bridge Construction, 2002*)
- Notify the supplier that State inspection is required and warn the supplier not to ship without inspection. (Articles 105.12, 106.01, 106.04, *Standard Specification for Road and Bridge Construction, 2002*)
- For products with source inspection, the Contractor should plan the work so that the **Engineer** has sufficient advance notice to perform the sampling and testing requirements. (Articles 106.01, 106.03, 106.04, 106.05, *Standard Specification for Road and Bridge Construction, 2002*)
- Additional responsibilities may be required of the Contractor depending upon the governing contract documents outlined in Attachment 2.

SECTION 500. – REPORTING RESULTS OF SAMPLING AND TESTING

500.01 REPORTING

Materials inspection and test information is stored in and communicated through the **MISTIC** system. The following definitions and explanations are given to standardize and clarify the use of terminology related to **MISTIC** data input and types of inspection. The letters enclosed in parentheses are used to enter test identification information in **MISTIC**.

- a) ACCEPTANCE (ACC). Inspection and approval of material for use on a specific project and/or unassigned stock for future use on specific projects. Acceptance is normally based on a quantity of material (i.e., batch or lot). The quantity represented by the acceptance samples will be entered into **MISTIC**.
- b) INDEPENDENT ASSURANCE (IND). **Department** comparison test that provides a separate check on the reliability of **Method of Acceptance** sampling and testing. Under non-**QC/QA** work, these are the check tests; under the **Department's QC/QA programs**, these are the **Department's Quality Assurance** tests. IND testing requirements are addressed in Section 900, TRAINED TECHNICIANS.
- c) INVESTIGATIVE (INV). A test performed to verify acceptability of source-inspected material. INV tests are verification/check tests. INV tests include the **Department's** check on consultant-performed **Quality Assurance** tests, tests that determine the serviceability/performance of in-place materials, and tests that investigate the reason materials have failed to perform as expected.
- d) PRELIMINARY (PRE). Samples taken by the producer or **Inspector** and tested in advance of the use of a material.
- e) PROCESS CONTROL (PRO). For **QC/QA** projects, these are the producer's/contractor's tests for the purpose of controlling production of material. For non-**QC/QA** projects, these are the **Department's** tests for controlling production.
- f) RESAMPLE (RES). An additional or follow-up sample from the same lot or location representing as closely as possible the same material previously sampled and/or tested (1) when the original sample is lost, contaminated, or damaged, or (2) when the test procedure or equipment is suspect, or (3) to investigate a failing test. A resample is identified as the same class (e.g., PRO, ACC) as the previous sample with a cross-reference to the original sample in the test remarks.
- g) MANUFACTURER'S CERTIFICATION (CRT). **Method of Acceptance** based on a written statement by the manufacturer or producer of the material that the material meets the required specifications. A **Visual Examination** of the materials and its accompanying paperwork is

required. **MISTIC** generates a test identification with this type of inspection.

- h) VISUAL ACCEPTANCE (VIS). Acceptance or rejection of material based on an assessment of its markings, physical dimensions, obvious defects or damage, and close conformity with contract specifications. No lab or field tests are required. Visual acceptance is used when sampling is impractical, destructive tests are not practical, or no test method is available for use. Visual acceptance applies to most small quantities. A RE memo denoting visual acceptance is required in the project file, and input into **MISTIC** is required. **MISTIC** generates a test identification with this type of inspection.

500.05 RESIDENT'S FILE

Inspection information is required in hard copy reports for contract documentation and should be included in the **Resident's** file for operational and/or documentation purposes. Attachment 4 and Sampling Schedules 1-4 outline the required reports.

The District Materials Office should be contacted if a **Resident** needs a special report or other materials inspection/test data available in **MISTIC**.

The **Resident** must maintain copies of failing **District Laboratory** or **BMPR Laboratory** test reports and subsequent follow-up test reports. The **Resident/Inspector** is required to document the action taken regarding the failing tests.

The **Resident/Inspector** should prepare materials test reports as outlined in Attachment 4 and Sampling Schedules 1 - 4 and visual inspections on a weekly basis. The originals must be sent to the District Materials Office for timely entry into the **MISTIC** system.

500.10 TEMPORARY ITEMS

With the exception of reflective **Temporary Items** such as pavement markings, **Temporary Items** no longer require documentation to be sent and entered into **MISTIC**. This reduced reporting requirement should not be construed as a condition for reduced inspection. At a minimum, **Temporary Items** require **Visual Examination** and notation in the **Resident's** quantity book. If it is not apparent from a **Visual Examination** that the proper material has been provided, the **Resident** should arrange for the appropriate testing.

All reflective **Temporary Items** will be sampled, inspected, tested, and documented the same as permanent reflective materials.

The acceptability of a **Temporary Item** is not a one-time event. The **Resident** should monitor the condition and performance of each **Temporary Item** while it is in use.

SECTION 600. – SMALL QUANTITIES

600.01 PROCEDURES

Field sampling, testing, or source inspection of small quantities may be waived by the **Resident** on the basis of one of the two following methods:

1. Approval on the basis of visual inspection provided the producer or manufacturer has recently furnished similar material found to be satisfactory under the State's normal sampling and testing procedures.
2. Approval on the basis of certification by the producer or manufacturer stating that the material meets the specification requirements. Supplier certifications are not acceptable.

Under either of the above methods, the **Resident** approving the material must provide a memo (R.E. visual) detailing the acceptance method used. The producer and the quantity of material covered by the approval shall be indicated.

Attachment 3 suggests approximate quantities of material per contract that may be approved. The District Materials Engineer must approve quantities in excess of those listed in Attachment 3.

600.05 RESTRICTIONS

These procedures are not permitted to be used for structurally critical items or features that could directly affect the safety of the traveling public. For examples of items for which small quantities are not allowed, see Attachment 3.

Under no conditions are materials to be used from an unknown producer.

600.10 PROJECT CERTIFICATION

These guidelines may be used for project certification provided the restrictions in Section 600.05, RESTRICTIONS, are met.

SECTION 700. – APPLICATION TO LOCAL AGENCY PROJECTS

700.01 SCOPE

The requirements of this Project Procedures Guide apply to Local Agency highway improvement projects as they do to all projects constructed on the State system. Specific exceptions to this Project Procedures Guide are discussed in the current Local Roads and Streets manual(s) or by circular letter.

700.05 SAMPLING

Acceptance samples will be the joint responsibility of the Local Agency and the **Department** through the County Engineer, City Engineer, or the duly appointed representative of the Local Agency. In general, the Local Agency shall perform the **Method of Acceptance** sampling and testing required for the project. By agreement, the **Department** may provide these services at plants and locations where an **Inspector** is present.

700.10 DISTRIBUTION OF REPORTS

Whenever possible, materials inspection and test information from Local Agency projects and all projects constructed on the State system is stored and communicated through the **MISTIC** system and is available upon request. The Local Agency is required to submit the original test/inspection reports and copies of the manufacturers' certifications on a weekly basis (or as agreed to by the District Materials Office) to the District Materials Office for input into **MISTIC**. Normally, the Local Agency or their appointed **Resident** will also have the same or comparable hard copy forms (if applicable) as described in Section 500.05, RESIDENT'S FILE. The Local Agency or the **Resident** will also receive a copy of the Approved Material Inspection Report (MIR-C08) and/or the Local Agency Material Inspection Report (MIR-C01). When samples are taken by the Local Agency and submitted to the **Department's** laboratories for testing, the Local Agency will be notified of failing test results and resultant subsequent resamples and a hard copy report will be sent to the Local Agency or **Resident**. In the event the Local Agency needs a special report or other material inspection/test information available in **MISTIC**, the District Materials Office should be contacted.

SECTION 800. - CERTIFICATION OF MATERIALS

800.01 PROJECT MATERIALS CERTIFICATION

When a Federal-aid (State or Local highway system) or State-funded project is finalized, the District Engineer is required to certify to the Engineer of Materials and Physical Research that all materials incorporated into the contract work were in close conformity with the approved plans and specifications. The project certification will be submitted with any **Exceptions** documented. Steps 1 – 6 of Section 200.01, MATERIALS ACCEPTANCE OVERVIEW, are required for these projects.

When a Local Agency Motor Fuel Tax (MFT) Construction project is finalized, the District Bureaus of Materials or Local Roads and Streets are required to certify that all materials incorporated into the contract work were in close conformity with the approved plans and specifications. The project certification will be submitted with any **Exceptions** documented. Steps 1 – 6 of Section 200.01, MATERIALS ACCEPTANCE OVERVIEW, are required for these projects.

No materials certification is required for Local Agency MFT Maintenance or special maintenance projects. Steps 1 – 3 of Section 200.01, MATERIALS ACCEPTANCE OVERVIEW, are required for these projects.

800.05 ROLE OF BUREAU OF MATERIALS AND PHYSICAL RESEARCH

In order to provide the District Engineer with assistance, and to emphasize the Bureau of Materials and Physical Research's responsibility to ensure that the materials function is being properly performed, the Engineer of Materials and Physical Research will: (1) provide guidelines for project material certification reviews that are consistent with the **Department's** current policies, (2) examine a random selection of projects and test program areas to ensure compliance with established policies, and (3) assist the Districts in addressing problem areas and in training State and Local Agency personnel to perform the project materials certification function.

800.10 PROJECT CERTIFICATION REVIEW

When a Federal-aid (State or Local highway system) or State-funded project is finalized, a review of the project records will be conducted and the District Engineer will submit a project materials certification memo to the Engineer of Materials and Physical Research.

Project records must be reviewed to verify compliance with the applicable specifications to support the project materials certification.

Materials that were incorporated into the project having tests indicating non-compliance with the applicable specifications will be listed as an **Exception**, and appropriate explanations will be provided.

In the case of HMA and PCC mixtures, **Exceptions** will not be determined solely on the basis of acceptance tests. **Exceptions** will be identified under the following conditions:

- (1) Project test records or project files indicate one of the conditions for initial approval was not met (see Attachment 3), or
- (2) Project test records suggest that a significant portion of the mixture was not in substantial conformance with the specifications. This will require a review of all test data utilizing the HMA and PCC Reports. If a significant number or percentage of tests do not meet the specification requirements, the material should be listed as an **Exception** and an explanation provided for its use on the project.

Copies of both mixture reports will become a permanent part of the project hard copy file, as well as copies of all supporting documents covering **Exceptions**.

For State and locally administered highway improvement projects, the District Construction Engineer or District Local Roads Engineer, respectively, will also receive a copy of the project certification documents including all **Exception** documentation so that (1) the project can be closed out in a timely manner and/or (2) appropriate action can be initiated on **Exceptions** discovered during the examination of the project materials test/inspection records.

The District Engineer will provide the Office of Finance and Administration's Project Control Section with a copy of all Federal-aid project materials "Letters of Certification", including attachments that identify **Exceptions**.

The Office of Finance and Administration's Project Control Section shall submit a copy of the District Engineer's "Letter of Certification", including attachments which identify **Exceptions**, to the Illinois Federal Highway Administration office on all projects administered under the Federal-aid Interstate program. The District Engineer's "Letter of Certification" will be considered the "Letter of Certification" by the State Engineer.

800.15 CERTIFICATION LETTER EXAMPLE

The following memo is the recommended format for the "Letter of Certification" to be sent to the Engineer of Materials and Physical Research. If there are no **Exceptions**, the remark "NO EXCEPTIONS" will be typed on the bottom of the project materials certification.



Illinois Department of Transportation

Memorandum

To: Engineer of Materials and Physical Research
From: District Engineer
Subject: Materials Certification by District Engineer
Date:

Contract:
Route:
Section:
County:
Project:
Job Number:
Location:

This is to certify:

The results of the tests on acceptance samples indicate the materials incorporated in the construction work, and the construction operations controlled by sampling and testing were in close conformity with the approved plans and specifications.

Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).

Sincerely,

District Engineer

By:

Materials Engineer

cc: David Campbell

Attn: Clarence Crowder

NO EXCEPTIONS

CERTIFICATION LETTER EXAMPLE

SECTION 900. – TRAINED TECHNICIANS

900.01 PURPOSE

Federal regulation 23 CFR 637 requires that contractor, consultant, Local Agency, and **Department** personnel performing materials acceptance sampling and testing on Federal-aid projects on the National Highway System be qualified. It is the **Department's** policy to follow these federal regulations for all State projects and for all Local Agency highway improvement projects. Exceptions to the training requirements for Local Agency highway improvement projects are discussed in the current Local Roads and Streets manual(s) or by circular letter. The **Department** offers **QC/QA** courses and specific task training programs to meet the educational requirements for qualified personnel.

900.05 REPORTING

The Bureau of Materials and Physical Research is responsible for maintaining records of contractor, consultant, Local Agency, and **Department** personnel who have successfully completed the **QC/QA** courses. Online queries and reports are available to the Districts to assist them in tracking qualified personnel. The **Department** also maintains records of **Department** personnel who have successfully completed the specific task training programs.

Personnel who successfully complete the required **QC/QA** course(s) or the specific task training program(s) and have been entered into departmental databases are considered qualified.

Any changes to the status of the **Trained Technician** (name, address, employer, etc.) should be reported to the Bureau of Materials and Physical Research.

900.10 INDEPENDENT ASSURANCE TESTING

The purpose of independent assurance testing is to provide a basis for evaluating the adequacy of procedures and equipment used for the materials acceptance sampling and testing program. The requirements for qualified persons, outlined in this section, and for **Qualified Laboratories**, outlined in Section 1000, QUALIFIED LABORATORIES, help ensure that **Trained Technicians** are properly trained in the correct manner of sampling and testing and that testing equipment is properly calibrated and maintained.

It is necessary to periodically demonstrate that a qualified person remains capable of proficiently performing sampling and testing on project-produced material in all areas for which they are considered qualified. **Department Trained Technicians** who routinely perform testing under **QC/QA Programs** in essence undergo independent assurance testing with every split sample they share with the contractor. **Department Trained Technicians** who do not perform work on **QC/QA** projects will need to be periodically monitored by the District Materials Engineer or his/her staff to ensure they remain capable of proficiently performing sampling and testing on project-produced material in all areas for which they are

considered qualified. Phase III (Construction) consultants who perform work for the **Department** on non-**QC/QA** projects will need to be monitored by the District Materials Engineer or his/her staff on a monthly basis to ensure proficiency in sampling and testing on project-produced material in all areas for which the Phase III (Construction) consultants are considered qualified.

The Engineer of Materials and Physical Research will remove a **Trained Technician** from the departmental database if a review by the District Materials Engineer determines it is appropriate to remove him or her from active status in any testing area.

The District Materials Engineer shall notify the Engineer of Materials and Physical Research, in writing, regarding **Trained Technicians** to be removed from the departmental databases.

900.15 TESTING AREAS

The material testing program areas are as follows:

Aggregate Gradation
Hot Mix Asphalt (HMA)
Cast-in-Place Concrete
Precast and Precast, Prestressed Concrete
Soils Density

Current training requirements are summarized in Tables 1 through 5. More detail about training required for specific tasks may be found in the governing specifications, special provisions, BMPR Policy Memoranda, or the Manual of Test Procedures for Materials.

Table 1: AGGREGATE GRADATION TRAINING REQUIREMENTS

PERSONNEL	TASK	REQUIRED TRAINING COURSE *
Producer	AGCS Program Management	Aggregate Technician (CET 021) or A.G.C.S. Technician (CET 032)
Department	Quality Assurance Oversight	Aggregate Technician (CET 021) or A.G.C.S. Technician (CET 032)
All	Aggregate Sampling	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020) or A.G.C.S. Technician (CET 032)
All	Splitting and Gradation Testing	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020) or Gradation Technician (Department ½-day class)

General Notes:

- This program documents that a person is qualified to take samples and perform aggregate gradation tests and apply the concepts of the **Department's** Aggregate Gradation Control System where applicable.
- CET XXX refers to the Lake Land College course designation. Lake Land College administers the **Department's QC/QA** training classes.

* Refer to the governing specification, special provision, or contract document for details concerning requirements and limitations of **Trained Technicians** under **QC/QA programs**.

Table 2: HOT MIX ASPHALT TRAINING REQUIREMENTS

PERSONNEL	TASK	REQUIRED TRAINING COURSE *
Producer	Quality Control Management	Hot Mix Asphalt Level II (CET 023)
Department	Quality Assurance Oversight	Hot Mix Asphalt Level II (CET 023)
Local Agency	Quality Assurance Oversight	Hot Mix Asphalt Level II (CET 023) or QA Manager class (offered by the Department to local agencies only)
All	Aggregate Sampling and Gradation Testing	Hot Mix Asphalt Level I (CET 022 or CET 029) or Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020)
All	Aggregate Gradation Testing	Gradation Technician (Department ½-day class)
All	HMA Sampling and Testing	Hot Mix Asphalt Level I (CET 029)
All	HMA Mix Design	Hot Mix Asphalt Level III (CET 031) (Technicians who completed Hot Mix Asphalt Level III (CET 025) prior to Fall 2000 <u>must</u> take Superpave Mix Design Upgrade (CET 033) prior to doing Superpave mix designs)
All	HMA Field Density	½-day class taught by Lake Land College or Bureau of Materials and Physical Research. Department and Local Agency employees must also have Specific Task Training Program S-34, "Radiation Safety and Density by the Nuclear Method". The Radiation Protection Officer or District Radiation Safety Officer will monitor the operator until the individual can demonstrate the competent use of the nuclear gauge.

General Notes:

- This program documents that a person is qualified to perform HMA tests.
- CET XXX refers to the Lake Land College course designation. Lake Land College administers the **Department's QC/QA** training classes.
- * Refer to the governing specification, special provision, or contract document for details concerning requirements and limitations of **Trained Technicians** under **QC/QA programs**.

Table 3: CAST-IN-PLACE CONCRETE TRAINING REQUIREMENTS

PERSONNEL	TASK	REQUIRED TRAINING COURSE *
Producer/Contractor	Quality Control (proportioning at plant) ¹	PCC Level II (CET 024)
Contractor	Quality Control Management ¹	PCC Level II (CET 024) is recommended
Department/Local Agency	Quality Assurance Oversight ¹	PCC Level II (CET 024)
All	Aggregate Sampling and Gradation Testing ^{1, 2}	Aggregate Technician (CET 021) or Mixture Aggregate Technician (CET 020)
All	Aggregate Gradation Testing ^{1, 2}	Gradation Technician (Department ½-day class)
All	Mix Sampling and Testing ¹	PCC Level I (CET 030) or Concrete Tester (Department ½-day class)
Department/Local Agency	Mix Sampling and Testing ²	PCC Level I (CET 030) or Concrete Tester (Department ½-day class) or Specific Task Training Program S-31, "Portland Cement Concrete Proportioning and Testing" (no longer offered)

1 Applies to **QC/QA** projects.

2 Applies to non-**QC/QA** projects.

General Notes:

- This program documents that a person is qualified to perform concrete tests.
- CET XXX refers to the Lake Land College course designation. Lake Land College administers the **Department's QC/QA** training classes.

* Refer to the governing specification, special provision, or contract document for details concerning requirements and limitations of **Trained Technicians** under **QC/QA programs**.

Table 4: PRECAST AND PRECAST, PRESTRESSED CONCRETE TRAINING REQUIREMENTS

PERSONNEL	TASK	REQUIRED TRAINING COURSE*
PRECAST CONCRETE		
Producer	Quality Control Management	ACI Grade I ¹ or PCC Level I (CET 030)
Department/Local Agency	Quality Assurance Oversight	ACI Grade I ¹ or PCC Level I (CET 030)
All	Mix Sampling and Testing	ACI Grade I ¹ or PCC Level I (CET 030)
PRECAST, PRESTRESSED CONCRETE		
Producer	Quality Control Management	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021); AND ACI Grade I ¹ or PCC Level I (CET 030); AND Precast/Prestressed Concrete Institute Level I and Level II
Department/Local Agency	Quality Assurance Oversight	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021); AND ACI Grade I ¹ or PCC Level I (CET 030); AND Precast/Prestressed Concrete Institute Level I and Level II
All	Aggregate Sampling and Gradation Testing	Mixture Aggregate Technician (CET 020) or Aggregate Technician (CET 021)
All	Mix Sampling and Testing	ACI Grade I ¹ or PCC Level I (CET 030)
All	Cylinder Testing	Precast/Prestressed Concrete Institute Level I
All	Strand Tensioning	Precast/Prestressed Concrete Institute Level I and Level II

1 ACI Grade I = American Concrete Institute (ACI) Certification Program for Concrete Field Testing Technician – Grade I.

General Notes:

- This program documents that a person is qualified to perform concrete tests.
- CET XXX refers to the Lake Land College course designation. Lake Land College administers the **Department's QC/QA** training classes.
- * Refer to the governing specification, special provision, or contract document for details concerning requirements and limitations of **Trained Technicians** under **QC/QA programs**.

Table 5: SOILS DENSITY TRAINING REQUIREMENTS

PERSONNEL	TASK	REQUIRED TRAINING COURSE *
All	Volumetric Density	Specific Task Training Program S-33, "Standard Earth Density".
All	Nuclear Density	<p>ALL: Specific Task Training Program S-33, "Standard Earth Density".</p> <p>DEPARTMENT/LOCAL AGENCY: Department and Local Agency employees must have Specific Task Training Program S-34, "Radiation Safety and Density by the Nuclear Method". The Radiation Protection Officer or District Radiation Safety Officer will monitor the operator until the individual can demonstrate the competent use of the nuclear gauge.</p> <p>CONTRACTOR/CONSULTANT: As approved by the Illinois Department of Nuclear Safety.</p>

General Notes:

- This program documents that a person is qualified to perform density tests by either a) the sand-cone method or, b) the nuclear method on granular and earth embankment, lime-modified soil, lime-stabilized soil, granular subbase, cement aggregate mixture, pozzolanic-stabilized mixture, aggregate base course, and soil-cement.

SECTION 1000. – QUALIFIED LABORATORIES

1000.01 PURPOSE

Federal regulation 23 CFR 637 requires that **Department** laboratories and **Private Laboratories** which perform materials acceptance sampling and testing on project-produced materials must be **Qualified Laboratories**. It is the **Department's** policy to follow these federal regulations for all State projects and all Local Agency highway improvement projects. Exceptions to the qualified laboratory requirements for Local Agency highway improvement projects are discussed in the current Local Roads and Streets manual(s) or by circular letter.

1000.05 REQUIREMENTS

The Bureau of Materials and Physical Research inspects **District Laboratories** and branch laboratories on a routine basis for soils, aggregate, HMA, and PCC. The Bureau of Materials and Physical Research and the Districts inspect all **Private Laboratories** that perform **Quality Control** testing in aggregate, HMA, and PCC. **Private Laboratories** that perform **Quality Assurance** and independent assurance sampling and testing under the **Department's** materials control program must be accredited under the AASHTO Accreditation Program. These requirements are outlined in the current departmental policy, "Quality Assurance Procedures for Construction" (in the appendix), the current BMPR lab inspection policies, and the consultant prequalification instructions.

1000.10 REPORTING

The Bureau of Materials and Physical Research is responsible for maintaining a database that monitors the approval status of **Department** and **Private Laboratories**. Online queries and reports are available to the Districts to assist them in tracking **Qualified Laboratories**.

Consultants qualified for **QA** testing will be listed on the **Department's** web site at www.dot.state.il.us under "Doing Business/Design & Environment - Consultant Services/Consultant Prequalification".

IDOT MATERIALS STAMPS, TAGS, AND LA-15

To provide **Evidence of Materials Inspection** for inspected material delivered to construction projects, the **Department** has developed stamps, tags, and forms to assist in identifying sampled, tested, and/or inspected materials.

A **Department** materials **Inspector** uses one or more of these stamps or tags to provide **Evidence of Materials Inspection** for the **Resident**. Each materials **Inspector** is provided with a unique IL OK number. When an item is stamped or tagged IL OK, the materials **Inspector** will later report the inspection in **MISTIC**.

The Suppliers Certification of Shipment of Approved Material (Form LA-15) for approved suppliers is intended for use with materials which are tested and approved at the source by specific lots, batches, or quantities and stored for later delivery to a jobsite (e.g. paint, thermoplastic, glass beads, pavement marking tape, cable, etc.)

The **Department** gives the supplier blank LA-15 forms and keeps track of the Ticket Numbers on the forms given to the supplier. Then, with each shipment of approved materials, the supplier sends a completed LA-15 form, certifying that the specific material is approved. The completed LA-15 form includes the source and destination of the material and Test Identification, Lot, or Batch numbers.

The **Resident** receives the LA-15 with the material shipment at the jobsite. The **Resident** may use the original LA-15 as **Evidence of Materials Inspection**. The **Resident** may be asked to assist in taking random jobsite samples.

The **Department** office that provided the LA-15 booklets to the supplier will be noted on each completed LA-15 form. The responsible District Materials Office will also receive a copy of the LA-15 and will enter the assignment(s) in **MISTIC**. Subsequent **MISTIC** inspection reports (MIR-C08 or MIR-C01) should list the materials contained on the **Resident's** copy of the LA-15. These **MISTIC** reports are the formal inspection required to document the acceptance of the material.

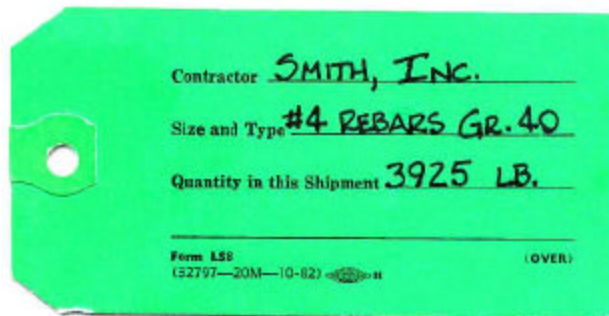
The following are examples of stamps, tags, and a completed LA-15 form.



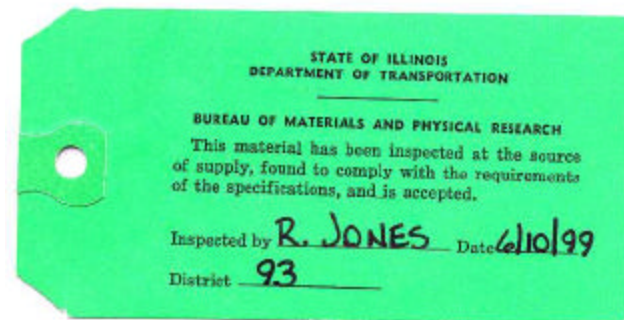
This stamp indicates the product was approved at the source



This stamp shows the product has been sampled. It does NOT indicate the product is approved



This tag is attached to products to indicate product was approved at source.





Supplier's Certification of Shipment of Approved Materials

Ticket No.

Shipment From	
Supplier	R. A. Smith
Location	Springfield, IL

Shipment To			
Contractor	John Doe	Invoice	1212
Contract No.	22222	Job No.	C922222
Section		Municipality	
County	Sangamon	State P.O. No.	

(If Applicable)

Material Name/Code	Producer/Location	Previous Supplier/Loc.	Lot/ Batch	Test ID	Quantity	Unit
White Paint	Dunn Paint		195	951111	37	gals.
Yellow Paint	Dunn Paint		295	952222	20	gals.
Glass Beads	Dunn Paint	Sherwin Co.	22395	953333	5	lbs.

Supplier certifies that the above material(s) has been loaded from stock material which has been tested, approved and released for shipment by the Illinois Department of Transportation.

John Smith

Signature of Supplier Representative

05-17-01

Date

The Illinois Department of Transportation (IDOT) regularly performs tests on the production and/or stock materials at the producer and/or supplier as a check on its quality control. The results of the tests and/or inspections may be obtained from the Illinois Department of Transportation.

White - Resident's copy

Canary - Materials
Pink - Supplier

District No.:

96

Central Office:

LA-15 (Rev. 2/95) IL 494-0804

SOURCES OF INFORMATION FOR INSPECTORS

CONTRACT DOCUMENTS

(In governing order)

Special Provisions
Approved Plans
Recurring Special Provisions
Supplemental Specifications
Standard Specifications

MANUALS

Construction Manual ¹
Manual for Materials Inspection ²
Manual of Test Procedures for Materials ¹
Manual for Inspectors of Precast Prestressed Concrete Beams ²
Subgrade Stability Manual ²

1 – Available for purchase at the **Department's** web site, www.dot.state.il.us, under "Doing Business/IDOT Manuals - Highways Manuals Order Form", or from the Bureau of Highways Administration, Manual Sales Office, (217) 785-8971.

2 – Available free of charge from the Bureau of Highways Administration, Manual Sales Office, (217) 785-8971.

POLICY MEMORANDUMS – BUREAU OF MATERIALS AND PHYSICAL RESEARCH

The most current list of BMPR Policy Memorandums may be found online at the **Department's** web site, www.dot.state.il.us, under "Doing Business/Materials & Physical Research".

ADDITIONAL DOCUMENTS

Special Provision for Quality Control/Quality Assurance of Bituminous Concrete Mixtures
Special Provision for Superpave Bituminous Concrete Mixtures
Special Provision for Superpave Bituminous Concrete Mixtures (Low ESAL)
Special Provision for Non-Class I Superpave Bituminous Concrete Mixtures
Special Provision for Bituminous Concrete Class I, Type 3CL (Low ESAL)
Special Provision for Quality Control/Quality Assurance of Concrete Mixtures
Special Provision for Quality Control of Concrete Mixtures at the Plant – Single A
Special Provision for Quality Control of Concrete Mixtures at the Plant – Double A

NOTE - This list of sources of information should be considered a dynamic list. Sources of information may be added to or deleted from this list at any time.

FIELD ACCEPTANCE

Construction materials do not just “appear” on the jobsite. In most cases, the material has been pre-inspected or may have been produced under a **Department**-approved **Quality Control** program. **Evidence of Materials Inspection** is the minimum proof that **Method of Acceptance** sampling and testing has been performed. This attachment identifies the type of evidence that is required. Additional information on **Evidence of Materials Inspection** may be found in the Manual for Materials Inspection. It is not always possible to update all documents concurrently. In case of a conflict, the most current edition should take precedence. If the **Evidence of Materials Inspection** is not clear, contact the Bureau of Materials and Physical Research for assistance.

This attachment does not describe the detailed **Method of Acceptance** sampling and testing requirements. Detailed information regarding materials inspection programs such as certified products, **QC/QA programs**, and warehouse inspections may be found in the Manual for Materials Inspection.

Column 1 - Product

The table is arranged in alphabetical order by type of material or construction. An attempt was made to include major items. If an item is not listed, contact the District Materials Engineer or the Bureau of Materials and Physical Research.

Column 2- Material Series

The number in this column represents the first three digits of the **MISTIC** Material Code for the product. If the product spans several sequential Material Series, only the first is listed. This number may be used as a cross-reference to find more information about a product from the Manual for Materials Inspection.

Column 3 - Evidence of Materials Inspection

This column lists the minimum information that the **Project Inspector** needs to accept the material. Definitions of the most common methods are listed below. It is important to understand that other methods may also be appropriate. For example,

- A product TEST may be appropriate at any time as determined by the **Resident/Inspector**.
- In addition to the notation in this column, a **Visual Examination** always applies. A piece of paper or **Inspector's** stamp does not guarantee that all product defects were caught in the **QC** and **QA** process or that it was not damaged in transit.
- A passing test result that has been reported in the **MISTIC** system is always acceptable **Evidence of Materials Inspection**.

<u>EVIDENCE</u>	<u>COMMENT</u>
BBS 59	Report of acceptance of fabrication of structural steel. The Bureau of Bridges and Structures usually performs this type of inspection and testing.
BILL OF LADING	A shipping ticket that accompanies a product to the job site and which identifies the product, source, and lot.
CERT	Manufacturer's written certification that indicates material complies with the specifications or contract.
CERT STAMP	Material is stamped "Certified" by the manufacturer (as instructed by BMPR Policy Memorandum), which indicates compliance with the specifications.
DAILY PLANT REPORTS	For PCC and HMA, reports generated that provide mixture test results and other production data. For non- QC/QA projects, Daily Plant Reports are the responsibility of the Inspector . For QC/QA projects, refer to the appropriate special provisions to determine responsibility for Daily Plant Reports.
IL OK	Material is stamped by an IDOT Inspector with an "IL OK" stamp indicating prior inspection and acceptance. An inspection tag may be used as Evidence of Materials Inspection and approval.
LA 15	This Department form is a supplier's certification indicating material is from approved stock. The form is sometimes used as a Bill of Lading to indicate prior approval. The form should include supplier, proper contract/job designation, material description, manufacturer, specific approved material (test ID number, lots, or batches), and quantity. Additional information on LA 15's is provided in Attachment 1.
LIST	The material appears on a current list of Department -approved products or approved sources found at the Department's web site, www.dot.state.il.us , under "Doing Business/Materials & Physical Research". Contact the inspecting district's Materials Office for information on aggregates.
MARK	A commercial label, tag, or other marking which indicates product specification compliance and/or an approved source/manufacturer.
TEST	Approved test result available via the MISTIC system or from locally performed lab or field tests (e.g., soil density).
TICK	A ticket from an approved source indicating Department material or aggregate gradation, job designation, purchaser, and weight (if applicable).
VIS	A RE memo denoting visual inspection is required in the project file, and input into MISTIC is required.
VIS EXAM	Same as VIS, but no RE memo or input into MISTIC is required.

MIXTURES and AGGEGATE

In addition to field tests, approval for aggregate and mixtures is based on other final acceptance criteria. The following items identify the initial method of approving such materials.

AGGREGATE:

1. Approved Aggregate Producer (BMPR List)
2. Approved quality
3. Approved gradation (ticket)
4. Verify gradation and quality (INV) if appropriate.

BITUMINOUS CONCRETE:

1. Approved plant and lab (BMPR)
2. Approved/verified mixture design
3. Approved materials – Aggregate (above), Asphalt Cement (BMPR list), Additives (BMPR list)
4. Compliance with mixture and compaction specifications (**QC/QA** specifications or Sampling Schedule 4, as applicable).

PORTLAND CEMENT CONCRETE:

1. Approved plant and lab (BMPR and District)
2. Approved/verified mixture design
3. Approved materials – Aggregates (above), Cement and Finely Divided Materials (BMPR lists), Admixtures (BMPR list)
4. Compliance with **QC/QA** or non-**QC/QA** specifications and Sampling Schedule 3, as applicable.

CONCRETE AGGREGATE MIXTURE (CAM, CAM II) AND POZZOLANICAGGREGATE MIXTURE:

1. Approved plant and lab (BMPR and District)
2. Approved/verified mixture design
3. Approved materials – Aggregates (above), Cement and Finely Divided Materials (BMPR lists), Admixtures (BMPR list)
4. Compliance with **QC/QA** or non-**QC/QA** specifications and Sampling Schedule 2, as applicable.

LIME MODIFIED SOIL, LIME STABILIZED BASE AND SUBBASE, AND SOIL-CEMENT:

1. Approved/verified mixture design
2. Approved materials – Aggregates (above), Cement and Finely Divided Materials (BMPR list)
3. Compliance with specifications and Sampling Schedule 1 or 2, as applicable.

Column 4 - Jobsite Sample

This column identifies sampling responsibilities of **Project Inspectors**. For mixture components, sampling is generally handled at the plant by **Plant Inspectors**. Additional sampling requirements for other non-jobsite samples are detailed in the Manual for Materials Inspection. Non-jobsite samples, other than mixture component samples, are generally sampled by **District Inspectors** or BMPR personnel.

An "NR" in this field indicates that a jobsite sample is not required. However, if there is not evidence that the material has been sampled and tested, field personnel should obtain a sample and submit for testing. Other entries in this column direct field personnel to sampling policy documents.

Column 5 - Responsible Lab – The **BMPR Laboratory** responsible for receiving samples and establishing the testing policy for a product. If the entry is "DI," any testing is performed by **District Inspectors**.

AC – Analytical Chemistry
AG – Aggregate
BC – Bituminous Chemistry

BM – Bituminous Mixture
CM – Cement
CN – Concrete

MT – Metals
SL – Soils
DI - District

Column 6 - Sample Size

When a sample is required, the sample size is indicated in this column. The following table summarizes the size of aggregate samples for gradation testing.

FINE AGGREGATE

FA1 – FA 21 25 LB (11 KG)

COARSE AGGREGATE

CA1 - CA5 110 LB (50 KG)
CA6 - CA11 55 LB (25 KG)
CA12 - CA15 35 LB (16 KG)
CA16 25 LB (11 KG)
CA17 - CA19 35 LB (16 KG)

LIMIT AGGREGATE SAMPLES TO 40 POUNDS PER BAG FOR SAFETY PURPOSES

Column 7 - Container

Following are recommended container types:

1. SCREW TOP METAL CONTAINER OR PAINT CAN.
2. PLASTIC BAG IN DOUBLE CANVAS SACKS.
3. CANVAS SACKS. DO NOT USE BURLAP OR "SUGAR SACKS" FOR FINE AGGREGATE.
4. POLYETHYLENE CONTAINER.
5. FRICTION TOP METAL CONTAINER.
6. TELESCOPING (CARDBOARD) CARTON.
7. FIBER CARTON 4" X 5" X 5", OR LARGE ENOUGH TO FIT CORE.
8. WELL PACKED.
9. FRICTION TOP METAL CONTAINER OR SECURELY FASTENED PLASTIC BAG IN CARDBOARD CARTON.
10. PLASTIC BAG INSIDE CANVAS SACK.
11. PLASTIC BAG.
12. ORIGINAL MANUFACTURER'S PACKAGE (UNOPENED).

Column 8 - Small Quantity per Contract

Small quantity is the recommended amount of a material per contract that can be accepted or certified without standard testing and documentation. Under no conditions are materials to be used from an unknown source. Alternative materials inspection requirements for small quantities are discussed in Section 600, SMALL QUANTITIES.

Quantities in excess of these amounts must be approved by the District Materials Engineer. For PCC and HMA, the small quantity criteria are for non-**QC/QA** work. **QC/QA** specifications provide specific small quantity criteria for PCC and HMA.

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
ADHESIVES							
▶ Two part bonding epoxy	427	CERT or MARK	NR	MT	-	-	N/A
▶ Chemical Adhesive (Dowel & Tie Bar)	427	LIST	NR	MT	-	-	N/A
▶ Glass Capsules for Anchor Bolts	427	LIST	NR	MT	-	-	N/A
AGGREGATE							
▶ for Mixtures & Granular Use	001	LIST + TICK	See Sampling Schedules	DI	See Cover Notes	3	500 T
▶ Riprap, Concrete	001	LIST + TICK	NR	-	-	-	ALL
▶ Riprap, Stone	001	LIST + TICK	NR	-	-	-	20 T
BRIDGE BEARING PADS							
▶ Elastomeric (Whole pad)	703	CERT or LA 15 or (*TEST)	*Sample when notified by BMPR	MT	1 Pad	-	N/A
▶ Fabric	703	LA 15 or TEST	NR	MT	-	-	N/A
▶ Pot, Floating Bearings	703	CERT	NR	-	-	-	N/A
BITUMINOUS MATERIALS							
▶ PG Asphalt Binder	101	(LIST or TEST) + Bill of Lading	See BMPR Policy Memo	BC	1 QT	5	N/A
▶ Road Oil & Cutback Asphalt	103	(LIST or TEST) + Bill of Lading	See BMPR Policy Memo	BC	1 QT	1	N/A
▶ Emulsified Asphalt	107	(LIST or TEST) + Bill of Lading	See BMPR Policy Memo	BC	1 GAL uncut emuls.	4	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
BITUMINOUS MIXTURES							
▶ Bituminous Concrete Mixture- (Other Than QC/QA)	175	Daily Plant Reports + TICK + TEST	See Sampling Schedules	DI	See Test Manual	3	500 T
▶ Bituminous Concrete Mixture (QC/QA)	175	Daily Plant Reports + TICK + TEST	Special Provision	DI	See Test Manual	3	Special Provision
CEMENTITIOUS MATERIALS							
▶ Cement (Portland)	376	(LIST or TEST) + Bill of Lading	Yes, per BMPR Policy Memo	CM	6 LB	10	N/A
▶ Finely Divided Minerals - Fly Ash, Ground Granulated Blast-Furnace Slag, Microsilica, High-Reactivity Metakaolin	378	LIST or TEST	Yes, per BMPR policy memo	CM	6 LB	10	N/A
CHEMICALS / ADMIXTURES							
▶ HMA - Anti-Strip Additive for Bituminous Mixtures	434	LIST	NR	BM	1 PT	4	0
▶ HMA - Asphalt Truck Release Agent	434	LIST	NR	BM	1 QT	1	N/A
▶ Calcium Chloride (Dry, Liquid)							
- Deicer	804	TEST	NR	AC	1 QT	4	1T or 500 GAL
- Dust Palliative	805	TEST	NR	AC	1 QT	4	1T or 500 GAL
- PCC - Calcium Chloride Accelerator	424	CERT	NR	CN	1 QT	1 or 4	N/A
▶ CLSM - Air Entraining Admixture	421	LIST	NR	CN	1 QT	1 or 4	N/A
▶ PCC - Corrosion Inhibitor	437	LIST	NR	CN	1 QT	1 or 4	N/A
▶ PCC - Latex Emulsion	437	CERT	NR	CN	1 QT	1 or 4	N/A
▶ PCC - Air-Entraining Admixture	421	LIST	NR	CN	1 QT	1 or 4	N/A
▶ PCC - Type A - G Admixtures	437	LIST	NR	CN	1 QT	1 or 4	N/A
▶ Epoxy Coatings Powder for Re-Bar	426	LIST	NR	MT	-	-	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
CHEMICALS / ADMIXTURES (Continued)							
▶ PCC - Membrane Curing Compound	430	LA 15 or IL OK or TEST	NR	CN	1 QT/Lot	1	N/A
▶ Bridge Seat Sealer	427	LIST	NR	CN	1 GAL	1 or 4	N/A
▶ Protective Coat (Linseed Oil/Petroleum Spirits)	426	LA 15 or IL OK or TEST	NR	AC	1 QT	1	55 GAL
▶ Rock Salt, Sodium Chloride	804	TEST	NR	AC	1 QT	5 or 11	N/A
▶ Water, for concrete, mortar, or curing	425	Potable Source or TEST	If not potable	AC	1 QT	4	N/A
▶ Weed Killer	803	MARK or CERT	NR	-	-	-	N/A
CONCRETE							
▶ Polymer Concrete	216	LIST	NR	CN	50 LB	12	N/A
▶ Portland Cement Concrete - Other than QC/QA	216	Daily Plant Reports + TICK (TICK not req'd for volumetric mixer) + TEST	See Sampling Schedules	DI	See Test Manual	-	100 CY
▶ Portland Cement Concrete - QC/QA	216	Daily Plant Reports + TICK (TICK not req'd for volumetric mixer) + TEST	Special Provision	DI	See Test Manual	-	Special Provision
▶ CAM II - Cement Aggregate Mixture	218	Daily Plant Reports + TICK (TICK not req'd for volumetric mixer) + TEST	See Sampling Schedules	DI	See Test Manual	-	600 SY
▶ CLSM - Controlled Low-Strength Material	216	Daily Plant Reports + TICK (TICK not req'd for volumetric mixer) + TEST	See Sampling Schedules	DI	See Test Manual	-	50 CY
▶ Non-Shrink Grout	216	LIST	NR	CN	-	-	N/A
▶ Shotcrete, High Performance	216	LIST	NR	CN	-	-	N/A
▶ Thin Polymer Overlay System for Bridge Decks	216	LIST	NR	CN	-	-	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
CONCRETE, (Continued)							
▶ PCC - Curing Blanket - Burlap, Burlap/Poly, Waterproof Paper, White Poly, Cotton Mat	702	VIS EXAM	NR	CN	3 LF	8	N/A
CONCRETE, PRECAST							
▶ Bridge Beams Precast	253	LIST + MARK	NR	CM	-	-	N/A
▶ Bridge Beams Prestressed	276	IL OK	NR	CM	-	-	N/A
▶ Bridge - Three Sided Structure	484	LIST + MARK	NR	CM	-	-	N/A
▶ Blocks, Building	251	LIST	NR	CM/CN	6	8	N/A
▶ Blocks, Catch Basin/Manhole/Inlet/ Valve Vault	251	LIST	NR	CM/CN	6	8	10
▶ Blocks, Retaining Wall	251	LIST	NR	CM/CN	6	8	N/A
▶ Blocks, Erosion Control - Interlocking, Non-interlocking, Articulated Mat	251	LIST	NR	CM/CN	6	8	N/A
▶ Drainage Structures	252	LIST + MARK	NR	CM	-	-	N/A
▶ Noise Abatement Wall Panel	255	LIST	NR	CM	-	-	N/A
▶ MSE Retaining Wall Panel	255	LIST	NR	CM	-	-	N/A
▶ Traffic Barrier	255	LIST	NR	CM	-	-	N/A
▶ R.O.W., Drainage, Section, and Permanent Survey Markers	260	LIST	NR	CM	-	-	N/A
▶ Headwall	257	LIST	NR	CM	-	-	N/A
▶ Bumper Blocks	255	LIST	NR	CM	-	-	N/A
▶ Junction Boxes and Handholes	261	LIST	NR	CM	-	-	N/A
CONCRETE REPAIR							
▶ Mortar, Polymer Modified Portland Cement	216	LIST	NR	CN	50 LB	12	N/A
▶ Rapid Hardening Cementitious Material	221, 379	LIST	NR	CN	50 LB	12	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
ELECTRICAL							
▶ Cable, conduit, unit duct	300	LA 15 or MARK compared to approved submittals	NR	MT	-	-	N/A
▶ Detector Loop	316	LA 15 or MARK compared to approved submittals	NR	-	-	-	N/A
▶ Fiber Optic Cable	315	LA 15 or MARK compared to approved submittals	NR	-	-	-	N/A
▶ Ground Rod	316	LA 15 or MARK compared to approved submittals	NR	MT	-	-	N/A
▶ Wire, span or tether	306	LA 15 or TEST	NR	MT	3 LF	8	500 LF
FENCING							
▶ Fabric, Post, Wire	575	MARK or TEST	NR	MT	3 LF	8	300 LF
▶ Glare Guard, Slats	586	CERT	NR	-	-	-	N/A
GUARD RAIL							
▶ Cable for Road Guard	550	LA 15 or IL OK or TEST	NR	MT	3 LF	8	100 LF
▶ Fasteners	550	CERT or MARK or TEST	NR	-	-	-	N/A
▶ Steel Plate, Posts	550	(CERT + MARK) or LA 15	NR	-	-	-	N/A
▶ Traffic Barrier Terminal End Section	556	[LIST (D&E) + CERT] or LA 15	NR	-	-	-	N/A
▶ Wood Posts, Plank	555	(CERT + MARK) or LA 15	NR	MT	-	-	N/A
JOINT FILLERS & SEALERS							
▶ Precast Concrete Pipe Joint Mastic	617	MARK or VIS	NR	BC	1 QT	5	N/A
▶ Hot Poured "3405" Sealant	619	LA 15 or IL OK or TEST	NR	BC	1 Mfg. Sealed Box	12	200 LB

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
JOINT FILLERS & SEALERS (Continued)							
▶ Cold Poured "1850" Sealant	619	LA 15 or IL OK or TEST	NR	BC	1 GAL	5	200 LB
▶ Polysulfide "920" Sealant	619	CERT or MARK	NR	-	-	-	N/A
▶ Asphalt Fillers (PAF)	620	LA 15 or IL OK or TEST	NR	BC	1 QT	5	200 LB
▶ Preformed- Bituminous, cork, foam, fiber	616	LA 15 or TEST	NR	BC/MT	2 SF	8	300 LF
▶ Preformed Elastomeric Compression	619	LA 15 or TEST	NR	MT	4 LF	8	100 LF
▶ Preformed Neoprene, EPDM	621	LA 15 or TEST	NR	MT	2 LF	8	100 LF
▶ PCC - Silicone	619	MARK or VIS	NR	-	-	-	N/A
▶ Water Seal, PVC	618	LA 15 or TEST	NR	MT	1.5 LF	8	100 LF
LANDSCAPING							
▶ Agricultural Lime (Dept of Ag. Program)	002	LIST + TICK	NR	DI	6 LB	2	N/A
▶ Excelsior Blanket	562	CERT	NR	MT	3 LF	8	200 SY
▶ Fiber Mat	562	MARK or CERT	NR	MT	3 LF x width	8	200 SY
▶ Fertilizer	561	CERT	NR	-	-	-	20 LB
▶ Mulch	562	VIS	NR	-	-	-	N/A
▶ Peat Moss	563	CERT	NR	-	-	-	N/A
▶ Seed, Sod	560	CERT	NR	-	-	-	N/A
▶ Trees, Shrubs, Plants	560	CERT	NR	-	-	-	N/A
LIGHTING & SIGNALS							
▶ Controllers & Cabinets	330	VIS compared to approved submittals	NR	-	-	-	N/A
▶ Lamps, Luminaires & Ballast	330	VIS compared to approved submittals	NR	-	-	-	N/A
▶ Traffic Signal Components	330	VIS compared to approved submittals	NR	-	-	-	N/A
▶ Break-away Supports	335	VIS compared to approved submittals	NR	-	-	-	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
LIGHTING & SIGNALS, (Continued)							
▶ Poles (Steel, Aluminum, Wood)	331	CERT or STAMP	NR	-	-	-	N/A
▶ Mast Arm Assemblies	330	CERT	NR	-	-	-	N/A
▶ Composite Junction Boxes	261	VIS compared to approved submittals	NR	MT	-	-	N/A
LUMBER / TIMBER							
▶ Treated Lumber	350	CERT + MARK	NR	MT	-	-	N/A
METAL PRODUCTS, MISCELLANEOUS							
▶ Aluminum Drains	785	CERT or LA 15	NR	MT	-	-	N/A
▶ Aluminum Railing	542	CERT or LA 15	NR	MT	-	-	N/A
▶ Copper Water Pipe	779	MARK	NR	MT	1 LF	8	N/A
▶ Name Plate	782	LA 15 or VIS	NR	MT	-	-	N/A
▶ Rodent Shield	785	VIS	NR	MT	-	-	N/A
▶ Survey Markers	783	LA 15 or VIS	NR	MT	-	-	N/A
MISCELLANEOUS							
▶ Manhole Step, Plastic	495	MARK	NR	MT	-	-	N/A
▶ Geotextile Drainage Fabric	498	MARK or TEST	Yes, if wt. cannot be verified	MT	3 LF x width	8	400 SY
▶ Brick (Clay or Shale), Building	704	TEST	NR	CN	10	8	100
▶ Brick (Concrete), Building	251	LIST	NR	CM/CN	6	8	N/A
▶ Concrete Paver	251	LIST	NR	CM/CN	10	8	N/A
▶ Brick (Clay or Shale), Paving	704	TEST	NR	CN	10	8	100
PAINT							
▶ Bridge Paint	414	TEST (approved lot)	NR	AC	1 PT	1	20 GAL
▶ Pavement Marking Paint	404	LA 15 or TEST	NR	AC	1 PT	1	20 GAL

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
PAVEMENT MARKING							
▶ Glass Beads	604	LA 15 or TEST	NR	AC	3 QT	5	100 LB
▶ Raised Marker	708	LIST (Operations)	NR	AC	3 EA	8	N/A
▶ Temporary Pavement Tape	705	LA 15 or IL OK or TEST	NR	AC	3 SF	8	N/A
▶ Thermo Letters	706	CERT	NR	AC	-	-	N/A
▶ Thermoplastic - Component Material	706	LA 15 or TEST	NR	AC	1 Gal from 3 dif. Bags	8,5	100 LB
▶ Thermoplastic Tape	705	LA 15 or TEST	NR	AC	3 SF	8	150 LF
PILING							
▶ Metal Shell or Steel H	365	CERT or LA 15 or IL OK	NR	MT	-	-	N/A
▶ Precast Concrete	366	LIST	NR	CM	-	-	N/A
▶ Prestressed Concrete	366	IL OK	NR	CM	-	-	N/A
▶ Timber	370	CERT or MARK	NR	MT	-	-	N/A
PIPE, CULVERT & DRAIN							
▶ Cast or Ductile Iron Pipe	511	CERT or LA 15	NR	MT	-	-	100 LF
▶ Clay Pipe & Drain Tile	500	LA 15 or IL OK or TEST	NR	MT	2 per size	8	100 LF
▶ Metal Corrugated & Components	452	CERT or IL OK or LA 15	NR	MT	-	-	100 LF
▶ Pipe - Plastic, PVC, HDPE - water/sewer	490	IL OK or LA 15 or TEST	NR	MT	4 LF	8	100 LF
▶ Pipe Liner, PE	496	MARK	NR	MT	4 LF	8	100 LF
▶ Pipe Underdrain	493	LA 15 or TEST	NR	MT	3 X 3 LF	8	100LF
▶ Plastic , Fiberglas Deck Drain	499	CERT + MARK	NR	MT	-	-	N/A
▶ Precast Pipe or Box Culvert	475	LIST + MARK	NR	CM	-	-	N/A
▶ Underdrain Mat, Wall Drain	496	LA 15 or TEST	NR	MT	3 X 3 LF	8	500 LF
SIGNING							
▶ Completed Sign Panels & Standard							
-Reflective Sheeting	613	CERT or LA 15 or TEST	NR	AC	13" x 13"	8	N/A
-Aluminum Sheeting	613	CERT or LA 15 or TEST	NR	MT	13" x 13"	8	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
SIGNING, (Continued)							
▶ Post, Break-away	600	CERT or IL OK or LA 15	NR	MT	-	-	N/A
▶ Posts, Metal & Hardware	600	CERT	NR	MT	-	-	N/A
▶ Posts, Steel Delineator	606	CERT	NR	MT	-	-	N/A
▶ Posts, Wood	610	CERT	NR	MT	-	-	N/A
▶ Reflectors, Delineator, Terminal	612	CERT or LA 15 or TEST	NR	AC	-	-	N/A
▶ Reflectors, Prism	612	CERT or LA 15 or TEST	NR	AC	-	-	N/A
▶ Sheeting, Reflective	602	CERT or LA 15 or TEST	NR	AC	13" x 13"	8	N/A
▶ Sheeting, Aluminum	601	CERT or LA 15 or TEST	NR	MT	1 SF	8	N/A
▶ Sign Structure, Overhead	600	BBS 59 + CERT	NR	MT	-	-	N/A
▶ Structural Fasteners	655	LA 15 or IL OK or TEST	NR	MT	3 EA	8	N/A
SOIL / MODIFICATION / STABILIZATION							
▶ CAM - Cement Aggregate Mixture	750	TEST	See Sampling Schedules	DI/SL	See Test Manual	-	600 SY
▶ Topsoil	563	TEST	Yes	DI/SL	3 LB	9	N/A
▶ For IBR							
- Fine-Grained Soil	563	TEST	NR	DI/SL	75 LB	3	N/A
- Coarse-Grained Soil	563	TEST	NR	DI/SL	100 LB	3	N/A
▶ For Moisture Density							
- Fine-Grained Soil	563	TEST	Yes	DI/SL	30 LB	3	N/A
- Coarse-Grained Soil	563	TEST	Yes	DI/SL	100 LB	3	N/A
▶ Pozzolanic Stabilized Subbase or Base Course	750	TEST	See Sampling Schedules	DI/SL	See Test Manual	-	600 SY
▶ Cement (Portland)	376	(LIST or TEST) + Bill of Lading	See Sampling Schedules	DI/SL	20 LB	2	1 Ton

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
SOIL / MODIFICATION / STABILIZATION, (Continued)							
▶ Lime - Hydrated, By-Product, Non-Hydrated	750	CERT and Manufacturer's Test Results which represent mat'l delivered	See Sampling Schedules	DI/SL	20 LB	2	1 Ton
▶ Lime Modified Soil	750	TEST	See Sampling Schedules	DI/SL	See Test Manual	-	600 SY
▶ Lime Stabilized Subbase or Base Course	750	TEST	See Sampling Schedules	DI/SL	See Test Manual	-	600 SY
▶ Soil-Cement Base Course	750	TEST	See Sampling Schedules	DI/SL	See Test Manual	-	600 SY
STEEL & CASTING							
▶ Cast Frames & Grates/Lids	200	CERT or LA 15	NR	MT	-	-	5 EA
▶ Cast Manhole Steps	210	MARK	NR	MT	-	-	6 EA
▶ Deck Drains	686	CERT or LA 15	NR	MT	-	-	N/A
▶ Gabions, Slope Mattress	680	CERT	NR	MT	-	-	N/A
▶ Pipe Casing	680	CERT or LA 15	NR	MT	-	-	N/A
▶ Steel Frames & Grates	684	CERT or LA 15	NR	MT	-	-	N/A
STEEL, REINFORCING							
▶ Couplers (Bar Splicers)	632	LIST; TEST if >100	Yes, if > 100	MT	-	-	N/A
▶ Dowel Bars	626	[LIST + (CERT or Bill of Lading)] or LA 15	Yes, per BMPR Policy Memo	MT	2 x 18"	8	N/A
▶ Dowel Bar Assembly	627	CERT	NR	MT	-	-	N/A
▶ Pavement Fabric & Wire Mesh	628	LIST + (CERT or MARK)	Yes, per BMPR Policy Memo	MT	3' x 3'	8	N/A

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
STEEL, REINFORCING, (Continued)							
▶ Prestressing Strand	631	TEST	NR	MT	2-4 LF	8	N/A
▶ Reinforcing Bar	629	LIST + MARK	Yes, per BMPR Policy Memo	MT	4 LF if < #8 bar, or 6 LF	8	N/A
▶ Rebar Epoxy Coated	629	[LIST + CERT + TEST (field)] or LA 15	Yes, per BMPR Policy Memo	MT	4 LF if < #8 bar, or 6 LF	8	N/A
STEEL, STRUCTURAL							
▶ Anchor Bolts	676	LA 15 or TEST	NR	MT	1 EA	8	NA
▶ Bridge Rail (Vehicular)	540	(CERT or LA 15) + TEST	NR	MT	2 LF	8	NA
▶ Fasteners	655	LA 15 or IL OK or TEST	NR	MT	3 EA	8	N/A
▶ Structural Steel	650	BBS 59 or CERT	NR	-	-	-	N/A
▶ Stud Shear Connectors	658	MARK or LA 15	NR	MT	3 EA	8	N/A
TEMPORARY ITEMS							
See Sections 100, 400 Except		VIS EXAM	-	-	-	-	-
▶ Reflective Material		See Paint, Pavement Marking and Signing requirements	_____	_____	_____	_____	_____

Product	Material Series	Evidence of Materials Inspection	Jobsite Sample	Responsible Lab	Sample Size	Container	Small Quant. Per Contract
WATERPROOFING MATERIALS							
▶ Asphalt Emulsion (Art. 1060)	381	(LIST or TEST) + Bill of Lading	NR	BC	1 GAL	4	55 GAL
▶ Membrane System (Art. 1061)							
- Coal-Tar Pitch Emulsion & Primer	382	LA 15 or TEST	NR	BC	1 QT EA	5	55 GAL
- Fabric, Glass	385	LA 15 or TEST	NR	BC/MT	3 LF x width	8	N/A
▶ Reflective Crack Control (Art. 1062)							
- Reinforcing Fabric	498	MARK or LA 15 or TEST	Yes (If weight cannot be verified)	MT	3 LF x width	8	N/A
▶ Fiberglas Repair System (Art. 1063)							
- Fiberglas Fabric	385	LA 15 or TEST	NR	MT	3 LF x width	8	N/A
- Bit. Adhesive	385	LA 15 or TEST	NR	BC	1 Mfg. Sealed Box	12	N/A

GUIDELINES FOR USE OF MISTIC “TYPE TEST” FOR MAJOR MATERIAL CATEGORIES

The following chart lists the report form and “Type Test” for major material categories. This chart will assist field personnel in properly identifying the sample on the **MISTIC** Sample Identification and/or field test reports. The chart is not intended to identify points of acceptance or tests appropriate for the listed materials. Refer to the applicable specification to determine test requirements. A “Type Test” column has been provided for both IDOT’s traditional non-**QC/QA** testing program and the **Quality Control/Quality Assurance (QC/QA) Programs**.

MATERIAL CATEGORY	TEST	LOCATION	FORM	MISTIC TYPE TEST		
				NON-QC/QA	QC/QA PROGRAM	
				DEPARTMENT	PRODUCER	DEPARTMENT
Aggregates	Quality Gradation	Source	LM-6 MI-504	PRO, PRE PRO, PRE	PRO	IND, INV
	Random A Quality at PCC Gradation	Mix Plant	LM-6 MI-504 ¹	INV INV	PRO	IND, INV
	Gradation	Jobsite	MI-504	INV		
	Gradation, etc.	Mix Design	LM-6	PRE	PRE	PRE
Bituminous Mixtures	Gradation – Hot Bins/Combined Belt or Cold Feeds	Mix Plant/Lab	MI-305 ²	ACC	PRO	IND, INV
	Gradation – Solvent Extraction/Ignition Oven	Mix Plant/Lab	MI-308 ²	INV	PRO	IND, INV
	Marshall – Stability and Flow	Mix Plant/Lab	MI-308 ²	INV		INV
	Air Voids	Mix Plant/Lab	MI-308 ²	INV	PRO	IND, INV
	Asphalt Content –Solvent Extraction, Nuclear, Ignition Oven ³	Mix Plant/Lab	MI-308 ²	INV	PRO	IND, INV
	Density – Nuclear/Core	Jobsite/Laboratory	MI-303 ²	PRO	PRO	IND, INV
	PG Asphalt Binder – QA Sample	Mix Plant/BC Lab	LM-6	INV	PRO	INV
PCC Mixture	Air, Slump, and Quantity	Jobsite	MI-654	ACC	PRO	IND, INV
	Strengths - Beams or Cylinders	Jobsite/Laboratory	MI-655	PRO	PRO	IND, INV
Soils/Embankment	Soil Compaction	Jobsite	MI-701	PRO		
Topsoil	Laboratory	Laboratory	LM-6	ACC		
CAM/PAM	Density/Compaction	Jobsite	MI-701	PRO		
Certified Producers	Random Check/Verification	Laboratory	LM-6	INV		
Misc. Products	Random Check/Verification	Laboratory	LM-6	INV		

- 1 The reverse sides of Forms MI-305 and MI-654 may be used. The aggregate testing program also utilizes computer-generated forms from the CARE-AGG System.
- 2 The reporting format is specified by the CARE-AC program. Computer generation of the form is not required.
- 3 Ignition oven may be used to determine asphalt content with approval of the **Engineer**.

SAMPLING SCHEDULES

The following Sampling Schedules list the minimum sampling and testing frequencies for non-**QC/QA** project-produced materials. (Refer to the current applicable special provisions and stand-alone documents therein for sampling and testing frequency requirements for **QC/QA** project-produced materials.) Good judgment on the part of the **Inspector** is essential for proper control of the work. Onsite job conditions such as consistency, methods, equipment, and weather may result in a decision to increase the frequencies listed in these Sampling Schedules.

Likewise, reliance should never be placed entirely on the numerical results of sampling and testing when determining the acceptability of the materials and construction work. Observation of the actual construction operations and processes is necessary to ensure that the materials incorporated and the construction procedures utilized are acceptable and in accordance with the contract, plans, and specifications.

The Sampling Schedules do not list frequencies for independent assurance testing. Independent assurance testing, or IND testing, is a way of ensuring that the **Inspector** remains capable of performing the tests properly. IND testing requirements are addressed in Section 900, TRAINED TECHNICIANS.

SAMPLING SCHEDULE 1: EMBANKMENTS, SUBGRADES, AND GRANULAR COURSES

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
Earth, Stone, or Gravel Embankments	Art. 205.05*	Standard Moisture Density Control Curve	Compaction curve data is required for each major change in embankment material. This data may be furnished in advance by District Laboratory .		No standard report
	Art. 205.05*	Density	1 test per 20,000 cu. yd. (15,500 cu. m) for a continuous operation, by Project Inspector . In confined areas, 1 test per 3 ft. (1 m) of lift and not less than 1 test per fill area, by Project Inspector .	PRO	MI 701
Subgrades Subgrade	Art. 301.03*	Density	1 test per 1500 ft. (450 m) of entire length of subgrade through both cut and fill areas, by Project Inspector	PRO	MI 701
Lime-modified Soil	Art. 302.08*	Density	1 test per 1500 ft. (450 m) of treated area, by Project Inspector	PRO	MI 701
Lime (Hydrated, By-Product, Non-Hydrated)	Sec. 1012	Various	Minimum of 1 sample on 1 st day, and then 1 sample per 750 tons (750 m ton) thereafter, by District Inspector	INV	LM-6

SAMPLING SCHEDULE 1: EMBANKMENTS, SUBGRADES, AND GRANULAR COURSES, Continued

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
Granular Courses Base Course and Granular Embankment, Type A Subbase Granular Material, Type A Aggregate Surface Course, Type A	Art. 351.05* Art. 311.05* Art. 402.05*	Density	1 test per 1000 ft. (300 m) of pavement, by Project Inspector	PRO	MI 701

* Test information contained in the *Manual of Test Procedures for Materials*.

SAMPLING SCHEDULE 2: NON-BITUMINOUS STABILIZED SUBBASE, STABILIZED BASE COURSE, AND STABILIZED SHOULDERS

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
General					
Fine Aggregate	Section 1003*	Gradation	1 test per week of production, by Plant/District Inspector	INV	MI 504
Coarse Aggregate	Section 1004*				
Portland Cement	Section 1001	Various	When requested by BMPR	INV	LM-6
Lime (Hydrated, By-Product, Non-Hydrated)	Section 1012	Various	Minimum of 1 sample on 1 st day, and then 1 sample per 500 tons (500 m ton), by District Inspector	INV	LM-6
Fly Ash	Section 1010	Various	When requested by BMPR	INV	LM-6
Stabilized Base and Subbase Courses					
Cement Aggregate Mixture	Art. 312.17*	Density	1 test per 1000 ft. (300 m) of pavement, by Project Inspector	PRO	MI 303
Cement Aggregate Mixture II	Art. 312.33*	Air	1 test per 1000 ft. (300 m), by Project Inspector	ACC	MI 654
	Art. 312.33*	Slump	1 test per 1000 ft. (300 m) formed; 1 test per day slip formed, by Project Inspector	ACC	MI 654
Pozzolanic Stabilized Base Course	Art. 357.04*	Density	1 test per 1500 ft. (450 m) of pavement, by Project Inspector	PRO	MI 701
Pozzolanic Stabilized Subbase Course	Art. 312.26*				
Lime Stabilized Soil Base Course	Art. 350.01*				
Lime Stabilized Soil Subbase Course	Art. 310.10*				

**SAMPLING SCHEDULE 2: NON-BITUMINOUS STABILIZED SUBBASE, STABILIZED BASE COURSE, AND STABILIZED SHOULDERS,
Continued**

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
Stabilized Base and Subbase Courses, continued Soil-Cement	Art. 352.11*	Density	1 test per 1000 ft. (300 m) of pavement, by Project Inspector	PRO	MI 701

* Test information contained in the *Manual of Test Procedures for Materials*.

QC/QA:

Please note that the sampling and testing frequency table above does not apply to **QC/QA** projects. Please refer to the current applicable Special Provision and stand-alone documents therein for sampling and testing frequency requirements.

SAMPLING SCHEDULE 3: NON-QC/QA CONCRETE

MATERIAL	SPECIFICATION REFERENCE	PROPERTY / QUALITY	FREQUENCY	MISTIC TEST	FORM
Pavement, Shoulders, Base Course, and Widening Fine Aggregate Coarse Aggregate	Art. 1003.02*	Gradation	1 test per week of production, by Plant/District Inspector	INV	MI 504
	Art. 1004.02*				
Portland Cement and Finely Divided Minerals	Sections 1001, 1014, 1015, and 1016	Various	When requested by BMPR	INV	LM-6
Concrete	Art. 1020.04*	Slump	1 test per 500 ft. (150 m) formed; or 1 test per day slip formed, by Project Inspector	ACC	MI 654
	Art. 1020.04*	Air 2-lane pavement and base course	1 test per 250 ft. (75 m); 1 test per 125 ft. (40 m) if truck mixed, by Project Inspector	ACC	MI 654
	Art. 1020.04*	Air Widening and shoulders	1 test per 100 cu. yd. (75 cu. m), by Project Inspector	ACC	MI 654
	Art. 1020.04*	Strength	4 beams (30 in. (762 mm)) first day; 2 per day thereafter, by Project Inspector *1	PRO	MI 655
Bridges, Culverts, Retaining Walls, Building Walls and Footings, and Patching Fine Aggregate Coarse Aggregate	Art. 1003.02*	Gradation	1 test per week per plant, by Plant/District Inspector *2	INV	MI 504
	Art. 1004.02*				
Portland Cement and Finely Divided Minerals	Sections 1001, 1014, 1015, and 1016	Various	When requested by BMPR	INV	LM-6

SAMPLING SCHEDULE 3: NON-QC/QA CONCRETE, Continued

MATERIAL	SPECIFICATION REFERENCE	PROPERTY / QUALITY	FREQUENCY	MISTIC TEST	FORM
Bridges, Culverts, Retaining Walls, Building Walls and Footings, and Patching, cont'd. Concrete	Art. 1020.04*	Air Superstructure, Bridge Deck Overlays *3	1 test per load, by Project Inspector	ACC	MI 654
	Art. 1020.04*	Air All other	1 test per 50 cu. yd. (40 cu. m), by Project Inspector	ACC	MI 654
	Art. 1020.04*	Slump Superstructure	1 test per 50 cu. yd. (40 cu. m), by Project Inspector	ACC	MI 654
	Art. 1020.04*	Slump Bridge Deck Overlays *3	1 test per 50 cu. yd. (40 cu. m), by Project Inspector	ACC	MI 654
	Art. 1020.04*	Slump All other	1 test per 100 cu. yd. (75 cu. m) formed, or 1 test per day slip formed, by Project Inspector	ACC	MI 654
	Art. 1020.04*	Strength	2 beams (30 in. (762 mm)) per pour, by Project Inspector *4	PRO	MI 655
	Miscellaneous and Incidental Concrete Items Fine Aggregate Coarse Aggregate Portland Cement and Finely Divided Minerals	Art. 1003.02*	Gradation	1 test per week per plant, by Plant/District Inspector	INV
Art. 1004.02*					
Sections 1001, 1014, 1015, and 1016		Various	When requested by BMPR	INV	LM-6

SAMPLING SCHEDULE 3: NON-QC/QA CONCRETE, Continued

MATERIAL	SPECIFICATION REFERENCE	PROPERTY / QUALITY	FREQUENCY	MISTIC TEST	FORM
Miscellaneous and Incidental Concrete Items, continued Concrete	Art. 1020.04*	Air	1 test per 100 cu. yd. (75 cu. m), by Project Inspector	ACC	MI 654
	Art. 1020.04*	Slump	1 test per 100 cu. yd. (75 cu. m) formed, or 1 test per day slip formed, by Project Inspector	ACC	MI 654
	Art. 1020.04*	Strength	2 beams (30 in. (762 mm)) per 100 cu. yd. (75 cu. m) per plant, by Project Inspector *4	PRO	MI 655
Grout, Controlled Low-Strength Material	Special Provision	Air	Occasionally, by Project Inspector	ACC	MI 654
	Special Provision	Flow	Occasionally, by Project Inspector	ACC	MI 654
	Special Provision	Strength (28-day)	Occasionally, by Project Inspector	PRO	MI 655

* Test information contained in the *Manual of Test Procedures for Materials*.

*1 For compressive strength, make 2 cylinders in lieu of each 30-in. (762-mm) beam. Testing is normally performed at four time intervals the first day, and at two time intervals thereafter. Slump and air tests are required when a strength specimen is made.

*2 For bridge deck, 1 test per day per plant.

*3 Bridge Deck overlays include microsilica, high-reactivity metakaolin, latex, and plasticized dense overlays.

*4 For compressive strength, make 2 cylinders in lieu of each 30-in. (762-mm) beam. Testing is normally performed at two time intervals. Slump and air tests are required when a strength specimen is made.

QC/QA

Please note that the sampling and testing frequency table above does not apply to **QC/QA** projects. Please refer to the current applicable Special Provision and stand-alone documents therein for sampling and testing frequency requirements.

SAMPLING SCHEDULE 4: NON-QC/QA BITUMINOUS CONCRETE

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
Bituminous Concrete Aggregates Fine Coarse Mineral Filler	Art. 1003.03*	Gradation	1 test per week of production, by Plant/District Inspector	INV	MI 504
	Art. 1004.03*				
	Art. 1011.01*				
PG Asphalt Binder	Section 1009	Binder Tests	2 tests per month per plant per grade of PG asphalt binder, sampled by District Inspector	INV	LM-6
All Class I and Superpave Mixtures	*	Voids (G_{mm} & G_{mb})	1 test per day, by Plant Inspector	INV	MI 308
	Art. 406.10*	Mixture Gradation (any approved test method)	1 test per day, by Plant Inspector	ACC	MI 305/309
	Art. 406.10*	PG Asphalt Binder Content	1 test per day, by Plant Inspector	INV	MI 308
	Art. 406.16*	Density	For a lift of 3 in. (75 mm) or less: 1 test per ½ mile (800 m), per lift, per lane (12 – 18 ft. (3.6 – 5.5 m)), randomly located, minimum of 2 tests per mix per day, by Project Inspector	PRO	MI 303

SAMPLING SCHEDULE 4: NON-QC/QA BITUMINOUS CONCRETE, Continued

MATERIAL	SPECIFICATION REFERENCE	PROPERTY/QUALITY	FREQUENCY	MISTIC TEST	FORM
All Class I and Superpave Mixtures, continued	Art. 406.16*	Density continued	For a lift greater than 3 in. (75 mm): 1 test per ¼ mile (400 m), per lift, per lane (12 – 18 ft. (3.6 – 5.5 m)), randomly located, minimum of 2 tests per mix per day, by Project Inspector	PRO	MI 303
	Art. 442.09*	Density Patching Mixtures	2 tests per mix per day, by Project Inspector	PRO	MI 303
All Non-Class I and Non-Class I Superpave Mixtures:					
Bituminous Aggregate Mixture	Sect. 312*	Mixture Gradation (any approved test method)	1 test per day, by Plant Inspector	ACC	MI 305/309
Bituminous Aggregate Mixture Shoulders	Sect. 482*				
Bituminous Base Course	Sect. 355*	PG Asphalt Binder Content	1 test per day, by Plant Inspector	PRO	MI 308
Bituminous Concrete Base Course Widening	Sect. 356*	Voids (G_{mm} & G_{mb})	1 test per day, by Plant Inspector	PRO	MI 308
Bituminous Surface Plant Mix (Class B)	Sect. 405*	Density	1 test per ½ mile (800 m) per lift, per lane, randomly located, with a minimum of 2 tests per mix per day, by Project Inspector	PRO	MI 303

* Test information contained in the *Manual of Test Procedures for Materials*.

QC/QA:

Please note that the sampling and testing frequency table above does not apply to **QC/QA** projects. Please refer to the current applicable Special Provisions and stand-alone documents therein for sampling and testing frequency requirements.

APPENDIX

DEPARTMENTAL POLICY MAT – 15

**“QUALITY ASSURANCE
PROCEDURES FOR CONSTRUCTION”**



Illinois Department of Transportation

Departmental Policies

Policy MAT-15
February 1, 2002

QUALITY ASSURANCE PROCEDURES FOR CONSTRUCTION

1. POLICY.

The Department will publish and maintain quality assurance procedures for construction.

2. PURPOSE.

This policy prescribes that the Department's quality assurance procedures for construction will be in compliance with 23 CFR 637, *Quality Assurance Procedures for Construction*. The objective of 23 CFR 637 is to ensure that the materials produced on federal-aid projects on the National Highway System meet departmental specification requirements. The Department has expanded the scope of the program as defined below.

3. GUIDELINES FOR IMPLEMENTATION.

A. Scope.

These procedures cover only project-produced materials and not manufactured materials. Project-produced materials include hot mix asphalt; Portland cement concrete; lime-modified and lime-stabilized soils; cement aggregate mixtures; pozzolanic-stabilized mixtures; soil cement; granular and earth embankment; and aggregate subbase, base course, surface course, and shoulders.

The Department will follow these procedures for all federal-aid projects and for all projects on the state highway system. The term "Department" as used also includes: 1) Local Agency personnel assigned to Local Agency improvement projects when an administrative function is the responsibility of the Local Agency for federally-funded projects, and 2) consultant personnel when retained to perform testing services for the projects listed above.

B. Qualified Laboratories.

- 1) The Department shall have an accredited central laboratory facility located in Springfield, Illinois, maintained and operated by the Bureau of Materials and Physical Research (BMPR), that administers its materials control program.

The Department's central laboratory has been accredited by the AASHTO Accreditation Program since 1991.

- 2) All testing used in the acceptance decision shall be performed by "qualified" laboratories.
 - a) The BMPR will conduct inspections of district and branch laboratories on a biennial basis for soils, aggregate, hot mix asphalt, and Portland cement concrete. The results of round-robin proficiency testing conducted by the BMPR may be part of the laboratory qualification process. Through this inspection process, the Department's central laboratory accreditation extends as an umbrella over the district and branch labs.
 - b) The BMPR and the districts will inspect private testing laboratories performing quality control testing in aggregate, hot mix asphalt, and Portland cement concrete. The inspection process for private labs will be similar to that for district and branch labs.
- 3) Private laboratories that perform quality assurance and independent assurance sampling and testing under the Department's materials control program shall be accredited by the AASHTO Accreditation Program in the testing to be performed.

Under limited circumstances, the BMPR may extend the Department's central laboratory accreditation as an umbrella over private laboratories by requiring that they meet the same qualified laboratory standards as outlined herein. The Department's quality assurance consultant prequalification process requires firms to provide documentation of either their current AMRL and CCRL accreditation or their application for AMRL or CCRL accreditation.

- 4) The Department will maintain a database that monitors the approval status of state and private testing labs.

C. Qualified Personnel.

- 1) All sampling and testing performed under the materials control program shall be performed by "qualified" sampling and testing personnel.
 - a) Testing personnel in Department-operated labs and private labs performing sampling and testing under the Department's materials control program (both Quality Control/Quality Assurance (QC/QA) and method spec work) must be trained under the Department's Trained Technician Program. Split samples tested by the Department to verify contractor quality control results may be used to assess the testing proficiency of private lab testing personnel and the accuracy of their equipment on an on-going basis under the Department's QC/QA programs. District lab and private lab personnel may be required to demonstrate testing procedures during annual lab inspections to ensure testing proficiency. Round-robin proficiency testing conducted by the BMPR may also be used to assess the testing proficiency of district lab and private lab personnel.

- b) All contractor, consultant, Local Agency, and Department Project Implementation field personnel involved in the Department's materials control program must be trained under the QC/QA Trained Technician Program or the appropriate specific task training program according to the requirements of the Department's current *Project Procedures Guide*.
 - c) Contractor, consultant, Local Agency, and Department Project Implementation field personnel involved in the Department's materials control program must remain proficient in all areas for which they are considered qualified. The District Materials Engineer will monitor qualified technicians to verify their proficiency according to the requirements of the Department's current *Project Procedures Guide*.
- 2) The Department will maintain a database of qualified technicians who have been trained. The Engineer of Materials and Physical Research may remove a qualified technician from the departmental database if a review by the District Materials Engineer determines it is appropriate to remove him or her from active status in any testing area.
- D. QC/QA Programs.

1) Historical Development.

The Department began to develop and implement QC/QA programs as part of its materials control program in 1990. Their development has been an evolutionary process. Qualified personnel and qualified labs are critical components in a materials control program that allows contractors' quality control testing as part of the acceptance process.

Materials control programs for hot mix asphalt and Portland cement concrete mixtures are outlined in the Department's QC/QA programs. The materials control program for aggregates is addressed under the Department's Aggregate Gradation Control System. Although technically not a project-produced material, aggregates are the fundamental building blocks of project-produced materials such as hot mix asphalt and Portland cement concrete. The Aggregate Gradation Control System provides a solid foundation for the Department's QC/QA programs for hot mix asphalt and Portland cement concrete, and is controlled accordingly.

A materials control program is intended to ensure that the contractor is producing material of the quality specified by the Department. Under the QC/QA programs, contractors assume responsibility for quality control testing. The Department will ensure that the equipment and the personnel can perform the tests properly by requiring qualified laboratories and qualified personnel. By performing quality assurance testing – laboratory investigations and round-robin test samples, as well as split samples of project-produced material, the Department will ensure that the qualified laboratories and the qualified personnel remain capable of performing the tests properly. Split samples of project-produced material also validate the quality of the product. In conjunction with the Department's independent assurance sampling and testing of project-produced material, verification of the quality of the project-produced material should be ensured.

2) Contractor Quality Control

- a) Contractor quality control sampling and testing shall be required under the QC/QA programs.

Sampling frequency schedules for quality control testing by the contractor are outlined in the specifications for aggregates, hot mix asphalt, and Portland cement concrete, with sampling frequency and location and type of test clearly defined. These sampling frequency schedules are minimum requirements, and contractors are encouraged to conduct additional testing to confirm material quality and specification compliance.

- b) The contractor's labs and personnel shall be qualified as outlined under "Qualified Laboratories" and "Qualified Personnel".

3) Departmental Quality Assurance and Independent Assurance Testing

- a) Split samples taken by the contractor or a consultant on behalf of the contractor, and witnessed by Department personnel, shall be tested by Department personnel.

Since contractors' quality control testing results are part of the Department's materials control program, quality assurance and independent assurance testing are an integral part of the Department's program. Department specifications outline test type and testing frequency for quality assurance and independent assurance testing by the Department on split samples of aggregate, hot mix asphalt, and Portland cement concrete.

- b) Department personnel may also separately obtain samples for independent assurance testing.

These samples help ensure specification compliance of project-produced materials. Results of quality assurance and independent assurance testing by the Department will be communicated promptly to the contractor. Acceptable limits of precision between the contractor's and the Department's split sample testing results are defined in departmental specifications. Samples that do not meet specification limits will be investigated and, if necessary, subjected to dispute resolution testing.

- c) Dispute resolution, i.e., investigation of discrepancies between contractor and Department test results, will be managed internally for the aggregate, hot mix asphalt, and Portland cement concrete programs.
- d) The Department's labs and personnel shall be qualified as outlined under "Qualified Laboratories" and "Qualified Personnel".

4) Consultant Services

- a) The Department may retain qualified consulting firms to perform quality assurance or independent assurance sampling and testing.

Private laboratories that perform quality assurance or independent assurance sampling and testing shall be accredited under the AASHTO Accreditation Program as outlined under "Qualified Laboratories". Consultant personnel shall be qualified as outlined under "Qualified Personnel". The Department will ensure proper consultant prequalifications through the Consultant Prequalification process. Development of guidelines for consultant-performed quality assurance and independent assurance testing will be an evolutionary process, with refinements made as experience with consultant-performed quality assurance and independent assurance testing is gained.

Consultants who plan to use "portable labs" (i.e., beam breakers and water tanks for Portland cement concrete) for quality assurance or independent assurance testing shall include the portable lab equipment, the plan for its use, and the proposed checks and balances process in the accreditation review. Consultants shall submit a quality control plan. The Department will review the quality control plan during the contract negotiation process and may reject the plan if it does not adequately address the issue of portable labs.

- b) The Department will not allow consultants to perform dual services on the same contract.

A qualified private laboratory may perform only one of the following types of testing on the same project: mix design services, quality control, quality assurance, independent assurance, or dispute resolution testing.

5) Final Acceptance

The Department will accept hot mix asphalt mixtures based on validation of the contractor's quality control sampling and testing by the Department's quality assurance and independent assurance sampling and testing, the contractor's process control charts and actions, and departmental quality and independent assurance tests for voids and density. The Department will accept Portland cement concrete mixtures based on the contractor's compliance with quality control contract requirements, validation of the contractor's quality control test results by the Department's quality assurance test results using split samples, and comparison of the Department's independent assurance tests with specification limits.

E. Non-QC/QA Programs

- 1) Acceptance testing procedures for lime-modified and lime-stabilized soils; cement aggregate mixtures; pozzolanic-stabilized mixtures; soil cement; granular and earth embankment; aggregate subbase, base course, surface course, and shoulders; and non-QC/QA hot mix asphalt and Portland cement concrete will be documented according to the requirements of the Department's current *Project Procedures Guide*.
- 2) Departmental laboratories and personnel performing acceptance testing under non-QC/QA programs shall be qualified as outlined under "Qualified Laboratories" and "Qualified Personnel".

F. Materials Certification

The Department shall provide materials certification for each construction project subject to FHWA construction oversight activities.

For all federal-aid projects, the Department prepares and submits materials certification documents to the FHWA Division Administrator stating that the materials used were in close conformity with plans and specifications.

4. RESPONSIBILITIES.

- A. The Bureau of Materials and Physical Research is responsible for the issuance of this policy.
- B. The Bureau of Materials and Physical Research, the Bureau of Construction, the Bureau of Local Roads and Streets, and the Division of Highway's Districts are responsible for ensuring compliance with this policy.
- C. The Bureau of Materials and Physical Research will provide guidance in the implementation of this policy.

5. ACCESSIBILITY.

Copies of this policy may be obtained from the Bureau of Materials and Physical Research, 126 East Ash Street, Springfield, IL 62704-4766, or may be examined in the Hanley Building Library, 2300 South Dirksen Parkway, Springfield, Illinois, 62764.

CLOSING NOTICE.

This Policy first becomes effective on February 1, 2002.

Approval:



Director of Highways

February 1, 2002

Date