NEW YORK STATE DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES DIVISION

INDEPENDENT ASSURANCE SAMPLING AND TESTING
PROCEDURE MANUAL
FOR CONSTRUCTION MATERIALS

May 2011
# TABLE OF CONTENTS

## INTRODUCTION

I. Background ........................................................................................................ 1
II. Scope ................................................................................................................ 1

## PROGRAM OVERVIEW

I. General ........................................................................................................... 2
II. Evaluation Process ......................................................................................... 3
III. Items Included in the IAST Program ............................................................ 4

## PROGRAM REQUIREMENTS

I. Projected IAST Evaluation Lists ..................................................................... 5
II. Evaluation Scheduling ................................................................................... 6
III. IAST Equipment ............................................................................................ 7
IV. Training/Certification Requirements ............................................................... 7
   1. IAST SUPERVISOR .................................................................................. 7
   2. IAST Staff .............................................................................................. 8
   3. Construction Inspection Staff ................................................................ 9

## EVALUATION PROCEDURES

I. Inspector/Laboratory Evaluations ................................................................. 10
   A. General Procedure .................................................................................. 10
   B. PROCEDURAL Evaluation Instructions .................................................... 11
      1. TRAINING CERTIFICATION/QUALIFICATIONS ................................. 11
      2. INSPECTING THE TEST EQUIPMENT .............................................. 11
      3. OBSERVATION OF SAMPLING PROCEDURE ................................. 12
      4. OBSERVATION OF TESTING PROCEDURE ................................... 12
      5. SPLIT SAMPLE TESTING ................................................................ 13
   C. PROPER TEST PROCEDURES ............................................................... 14
      1. PCC STRUCTURES/PCC PAVEMENT ............................................. 14
      2. PCC PRECAST ................................................................................. 14
      3. HOT MIX ASPHALT PRODUCTION FACILITY TESTING ............... 14
      4. HOT MIX ASPHALT – FIELD TESTING ......................................... 14
      5. GRANULAR MATERIALS ................................................................. 14
      6. EMBANKMENT MATERIAL ............................................................. 14
EVALUATION RESULTS .................................................................................................................. 15
  I. REVIEW OF EVALUATION RESULTS ................................................................................. 15
     1. TESTS RESULTS ARE WITHIN THE ACCEPTABLE LIMITS .................................. 15
     2. TESTS RESULTS ARE NOT WITHIN THE ACCEPTABLE LIMITS .......................... 15
  II. FOLLOW – UP EVALUATION ACTIONS ..................................................................... 16
     1. IF THE INSPECTOR IS FOUND TO BE QUALIFIED ........................................ 16
     2. IF THE INSPECTOR IS FOUND TO BE UNQUALIFIED ...................................... 16
EVALUATION RECORD KEEPING PROCEDURES ........................................................................... 18
APPENDIX A – IAST Equipment List ....................................................................................... 20
APPENDIX B - IAST CHECK LIST ........................................................................................... 23
  CONCRETE PLANT ........................................................................................................ 23
  CONCRETE FIELD ...................................................................................................... 25
  PRECAST CONCRETE PLANT .................................................................................. 26
  PRECAST CONCRETE (PLASTIC CONCRETE TESTS) ............................................. 28
  HMA PLANT ............................................................................................................ 29
  HMA FIELD ........................................................................................................... 31
APPENDIX C – AVAILABLE TRAINING FOR NYSDOT STAFF ........................................... 32
APPENDIX D – IAST WORKSHEETS .................................................................................... 33
  CONCRETE FIELD ..................................................................................................... 34
  CONCRETE PLANT ..................................................................................................... 35
  HMA PLANT ............................................................................................................... 36
  HMA FIELD ............................................................................................................... 37
  PRECAST CONCRETE (PLASTIC CONCRETE TESTS) ............................................. 39
  PRECAST CONCRETE PLANT .................................................................................. 40
  GEOTECH GRAIN SIZE ............................................................................................. 41
  GEOTECH FIELD DENSITY ....................................................................................... 42
APPENDIX E - ACCEPTABLE VARIATION LIMITS .................................................................. 43
INTRODUCTION

This manual prescribes procedures and frequencies for Independent Assurance Sampling and Testing (IAST) of construction materials used on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA, to be in compliance with requirements of the Federal Highway Administration (FHWA) through 23 CFR 637 Construction Inspection and Approval. Questions and requests for clarification or assistance should be directed to the Main Office Director, Materials Bureau, or Director, Geotechnical Engineering Bureau.

I. Background:

In April 1967 the Department initiated the Record Sampling and Testing Program as a means of monitoring the effectiveness of daily inspection and testing of construction materials, which their results were to be used as a basis for payment. This program was the foundation for the Independent Assurance Sampling and Testing (IAST) program that was formally adopted in December 1987.

Currently IAST is required by FHWA through 23 CFR 637 Construction Inspection and Approval. This Regulation requires that each State have an Independent Assurance program to sustain Federal funding.

The [IAST] program shall evaluate the qualified sampling and testing personnel and the testing equipment. The program shall cover sampling procedures, testing procedures, and testing equipment. Each [IAST] program shall include a schedule of frequency for [IAST] evaluations.  
[23 CFR 637.207(a)(2)(i)]

II. Scope:

The Department bases acceptance of construction materials on test results obtained by qualified sampling and testing personnel (hereafter referred to as Inspectors). If the procedures followed or equipment used by the Inspectors is not in conformance with the specified test standards, the test results and corresponding acceptance decisions will be invalid.

The purpose of the IAST program is to assure that when material is tested for acceptance on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA, proper procedures are followed, all equipment used is in proper working order and calibration, and to assure that all Inspectors have also received the proper approved training related to the material being evaluated.

The procedures incorporated in this manual provide for independent evaluations of testing personnel and equipment used in materials acceptance testing. The results of tests performed for IAST have no direct impact on the acceptance of material at the plant or project site.
PROGRAM OVERVIEW

I. General:

IAST provides an independent check on the quality of sampling, testing techniques, and evaluation of the equipment being used to test construction materials on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA. This independent verification is essential for maintaining a reliable materials acceptance program. The IAST program evaluates the procedures and equipment used for materials acceptance testing, through observation and split sample testing. This program also verifies that the Inspectors hold a current certification/qualification from an approved training program related to the material being tested.

IAST activities include observing sampling and testing techniques, and performing comparison tests on split samples taken by the Inspector. The split sample comparison testing is performed using designated AASHTO accredited laboratory equipment or equipment used only for IAST purposes. Both IAST and Regional/Consultant laboratory equipment is inspected and calibrated annually by the Department’s AASHTO accredited Central Laboratory, and periodically by the IAST Supervisor as required. Regional Laboratories further evaluate their equipment by participating in the AASHTO proficiency program. The use of equipment known to be calibrated allows the use of IAST results to evaluate the condition of equipment used at non-Department “Industry” Laboratories.

All IAST personnel are Department employees who are not engaged in routine project inspection. Each Region will designate one IAST Supervisor who is responsible for coordinating the IAST program and reviewing all IAST evaluations performed in that Region. The IAST personnel’s primary responsibility is obtaining accurate test results, so that a proper evaluation of the Inspector’s techniques and equipment can be given.

IAST test results are used exclusively for evaluating Inspectors and test equipment utilized for construction material acceptance. The results of IAST testing are not compared to NYSDOT specification requirements. The Inspector’s test procedures and equipment are observed and the Inspector’s tests results are compared to the results obtained by the IAST personnel. These test results are then compared to the acceptable variation as outlined in APPENDIX D in this manual. IAST test results will not be used in any acceptance decisions or payment calculations.

To be in compliance with the Departments agreement with FHWA, a year end IAST summary report will be sent to FHWA. The yearly IAST report contains IAST evaluation data compiled from the AASHTO SiteManager/LIMS database.
II. Evaluation Process:

The IAST Supervisor is responsible for scheduling evaluations in coordination with the Regional Materials Engineer and Regional Geotechnical Engineer.

Every Inspector and every non-Department Laboratory engaged in material sampling and testing for use in acceptance decisions on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA will be evaluated by IAST at least once per year. Inspectors and Laboratories being utilized for acceptance decisions on multiple projects will be evaluated numerous times, (at a minimum rate of one visit per project), to be in compliance with FHWA through 23 CFR 637 Construction Inspection and Approval. It is highly recommended that Inspectors on Projects, or Plants supplying material to projects that contain large quantities of Portland Cement Concrete (PCC) or Hot Mix Asphalt (HMA) be evaluated at a rate greater than the minimum rate of once per year.

Every Inspector engaged in material sampling and testing for use in acceptance decisions on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA must hold the appropriate required training/certification corresponding to the material being evaluated.

The Inspector will be evaluated for both test procedure and test results, by means of observation and split sample testing. If proper sampling and test procedures are not followed, the results obtained will not be deemed accurate. When the split sample tests results are found not to be within the acceptable variation limits, the IAST Supervisor will investigate as to the cause, and remedial action will be taken.

When testing procedure deficiencies are observed, the Inspector will be re-trained by the IAST staff as to the proper test procedures and re-evaluated at the discretion of the IAST Supervisor. Any equipment found not to be in compliance, will be replaced/repai red and re-calibrated before being utilized for future material acceptance decisions.

Typically the IAST staff will record all the evaluation information on an appropriate “IAST Evaluation Worksheet”, while performing the evaluation at the project site or plant. The results obtained will later be entered into the AASHTO SiteManager/LIMS database within one (1) week of the completion of the evaluation.

The IAST Supervisor or their representative will review the data entered in SiteManager as compared to the “IAST Evaluation Worksheet” (see IAST Data Entry Instruction Manual for details). Upon approval from the Regional IAST Supervisor, or their representative, the SiteManager generated report will be forwarded to the Main Office IAST Administrator for final “authorization”. Once authorized, an automatic “E-Mail” notification of achievement will be sent to the Inspector, Project Engineer, etc., as was entered in SiteManager.
III. Items Included in the IAST Program:

The following tables outline the items evaluated in each of the IAST Program areas.

### Concrete Field Inspector Evaluations

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slump</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Air Content</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cylinder Fabrication</td>
<td>X</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Precast Concrete

(Plastic Concrete Testing Evaluations)

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slump/Spread</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Air Content</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cylinder Fabrication</td>
<td>X</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Hot Mix Asphalt

Plant Inspector Evaluations

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(coarse and fine)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volumetric Test (Theo. Max $G_{mm}$)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Volumetric Test (Bulk $G_{mb}$)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Asphalt Binder Sampling</td>
<td>X</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Geotechnical

Earthwork Inspector Evaluations

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockpile Sampling</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>In-Place Soil Density</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### Concrete Batch Plant Inspector Evaluations

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(coarse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(fine)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Precast Concrete

(Batch Plant Inspection Evaluations)

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(coarse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate gradation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>(fine)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hot Mix Asphalt

Field Inspector Evaluations

<table>
<thead>
<tr>
<th>Item</th>
<th>Procedure</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge Set-Up</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Gauge Operation</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Specification Compliance</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>Coring Operation</td>
<td>X</td>
<td>N/A</td>
</tr>
</tbody>
</table>
PROGRAM REQUIREMENTS

I. Projected IAST Evaluation Lists:

Prior to April 1st of each year, the Regional IAST Supervisor will provide the Main Office, Materials Bureau IAST Administrator in writing the following information:

a) List of Projects either in progress or scheduled to start during the current calendar year, requiring IAST evaluations. This list will be used as “IAST Targets” to ensure that the required number of Project and Plant evaluations was preformed, as required by FHWA. This list should be modified throughout the construction season to represent active Projects/Plants requiring IAST evaluations.

b) List of Producer laboratories located in the Region that will be utilized for performing quality control testing of HMA or PCC on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA during that calendar year.

- Confirmation that the Producer Laboratories supplying material to NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA, meets the annual Regional plant approval as outlined in NYSDOT Standard Specifications § 401-3.02 and § 501-2.03, see Evaluation Procedures (Inspector/Laboratory Evaluations) section of this manual.

c) List of IAST staff outlining required training certifications/qualifications. The list may be modified by the Regional Materials Engineer or IAST Supervisor as needed throughout the year.

Note: Any project, personnel or laboratories on a list to be evaluated for that calendar year that does not require/perform acceptance testing during a calendar year should be removed from the list before comparing the number of tests performed to the number of personnel and laboratories on the lists for that year. If personnel or laboratories are removed from a list, but might perform acceptance testing during the next calendar year, they should be included in the next year’s lists.
II. Evaluation Scheduling:

The IAST Supervisor is responsible for scheduling evaluations in coordination with the Regional Materials Engineer and Regional Geotechnical Engineer as prescribed below. The IAST Supervisor will maintain the schedule for review by the Office of Technical Services and the Construction Division.

1.) HMA and PCC

Every Inspector and every non-Department laboratory engaged in material sampling and testing for use in acceptance decisions on every Department project, and Federal funded highway projects, including other projects deemed necessary by FHWA either through quality control (QC) or quality assurance (QA) testing, will be evaluated by IAST at least once per year. One visit may be used to evaluate both an Inspector and a laboratory, provided that Inspector is evaluated on all tests performed by that laboratory. The first visit for each project or plant should occur as close to the startup of the project or plant as possible for that calendar year. It is highly recommended that Inspectors on Projects, or Plants supplying material to projects that contain large quantities of PCC or HMA be evaluated at a rate greater than the minimum rate of once per year. This evaluation should occur slightly beyond the mid point of the project completion, to insure that the equipment being utilized is still in proper working condition and calibration.

Precast Facilities: Plant does not need to be producing material for NYSDOT projects at time of visit. However, all Inspectors routinely perform testing, for use in acceptance decisions for the manufacture of products used on Department/Federal funded projects, will be evaluated by IAST at least once per year.

2.) GEOTECHNICAL ITEMS

The evaluation frequencies are prescribed below in Table 2. The first visit to each source or project should occur as close to the startup of the project as possible.

### TABLE 2

**SAMPLING AND TESTING REQUIREMENTS FOR GRANULAR MATERIAL**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>GRADATION</th>
<th>DENSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>one stockpile per Inspector, per year, or stockpiled material</td>
<td>N/A</td>
</tr>
<tr>
<td>Construction Site</td>
<td>one per Inspector, per year, for non-stockpiled material</td>
<td>one per Inspector per year</td>
</tr>
</tbody>
</table>
III. IAST Equipment:

IV. This program requires each Region to have a vehicle and equipment assigned to the needs of performing IAST testing. The appropriate test equipment will be provided by the Materials and Geotechnical Engineering Bureaus. A detailed list of the necessary test equipment is shown in Appendix A.

The Region shall designate an individual responsible for the security and maintenance of NYSDOT test equipment. None of the test equipment issued for this program may be used for acceptance or verification testing, with the exception of designated AASHTO approved Regional/Consultant laboratory equipment.

The Materials and Geotechnical Engineering Bureaus will keep a supply of repair parts and wearable items on hand for repair and replacement of their respective NYSDOT test equipment. The Regions should make all requests for new equipment and parts to the Main Office, Materials Bureau or Geotechnical Engineering Bureau.

V. Training/Certification Requirements:

All IAST and Construction Inspection Staff must currently possess the required training/certification as indicated below, and is valid for a period of five (5) years from class date.

1.) IAST Supervisor *:

- Hold a current certification from American Concrete Institute (ACI) as a Portland Cement Concrete (PCC) Field Testing Technician Grade 1.
- Hold a current certificate from the NYSDOT Concrete Batch Plant Training Program, or equivalent approved by the Director, Materials Bureau.
- Hold a current Hot Mix Asphalt certification from NYMaterials, currently offered at Alfred State College, as a Quality Control/Quality Assurance Technician, or equivalent approved by the Director, Materials Bureau.
- Hold a current certification from the NYSDOT IAST Hot Mix Asphalt Density Inspector Training Program, or equivalent approved by the Director, Materials Bureau.
- Attend and satisfactorily complete the NYSDOT Earthwork Inspectors Training and Nuclear Density Gauge User Training Programs given by the Geotechnical Engineering Bureau, or equivalent training approved by the Director, Materials Bureau.
- Participate annually in the NYSDOT Geotechnical Engineering Bureau’s stockpile sampling observation program.
- Participate in the annual Soils Mechanics Reference Laboratory (SMRL) Program, and satisfactory complete the proficiency sample evaluation for gradation.

* In extraordinary cases, and only with prior written approval from the Director, Materials Bureau. The IAST Supervisor will be allowed to perform their duties until the required training becomes obtainable.
2.) **IAST Staff:**

Must hold the appropriate required training certifications/qualifications corresponding to the material being evaluated, and is valid for a period of five (5) years from class date.

- **PCC FIELD:**
  - Hold a current certification from ACI as a Concrete Field Testing Technician Grade 1, or equivalent training approved by the Director, Materials Bureau.

- **PCC PLANT:**
  - Hold a current certificate from the NYSDOT Concrete Batch Plant Training Program, or equivalent training approved by the Director, Materials Bureau.

- **HMA FIELD:**
  - Hold a current certification from the NYSDOT IAST Hot Mix Asphalt Density Inspector Training Program, or equivalent training approved by the Director, Materials Bureau.

- **HMA PLANT:***
  - Hold a current Hot Mix Asphalt certification from NYMaterials, currently offered at Alfred State College, as a Quality Control/Quality Assurance Technician.

- **GEOTECHNICAL TESTING:**
  - Satisfactorily complete the NYSDOT Earthwork Inspectors Training and Nuclear Density Gauge User Training.
  - Be observed once annually by the Geotechnical Engineering Bureau in performing stockpile sampling.

See APPENDIX C for training/certification available for NYSDOT staff.

* In extraordinary cases, only with prior written approval from the Director, Materials Bureau, IAST inspections can be performed by Department personnel that have been trained by the IAST Supervisor within the past 12 months on the tests and procedures covered in the NYMaterials certification program.
3.) **Construction Inspection Staff:**

All Field/Plant Inspection staff, including “Consultant”, “Contractor” and “Producer” personnel must meet the appropriate required training qualifications corresponding to the material being evaluated, and is valid for a period of five (5) years from class date.

- **PCC Field:**
  - Hold a current certification from ACI as a Concrete Field Testing Technician Grade 1, or equivalent training approved by the Director, Materials Bureau.
  - Or hold a current certificate from NYSDOT Concrete Field Testing Technician Training Program, or equivalent training approved by the Director, Materials Bureau.
  - “Consultant” staff - hold a current certification from ACI as a Concrete Field Testing Technician Grade 1, or National Institute for Certification in Engineering Technologies (NICET) level II with the required “Work Elements”, or equivalent training approved by the Director, Materials Bureau.

- **PCC Precast:**
  - Hold a current certification from ACI as a Concrete Field Testing Technician Grade 1.

- **PCC Plant:**
  - Hold a current certificate from the NYSDOT Concrete Batch Plant Training Program, or equivalent training approved by the Director, Materials Bureau.

  **Excludes Precast Facilities**

- **HMA Field:** (“CONTRACTOR/CONSULTANT PERSONNEL” ONLY)
  - Hold a current certification from the Associated General Contractors as a New York State Hot Mix Asphalt Density Inspector, currently offered at Alfred State, SUNY College of Technology, in Alfred, NY.

- **HMA Plant:**
  - Hold a current Hot Mix Asphalt certification from NYMaterials, currently offered at Alfred State College, as a Quality Control/Quality Assurance Technician, or work under the “direct” supervision of a certified QCT or QAT technician.

- **Geotechnical Testing:**
  - Satisfactorily complete the NYSDOT Earthwork Inspectors Training, or hold the NorthEast Transportation Training and Certification Program (NETTCP), Soil and Aggregate Inspector Certification.
  - Satisfactorily complete the NYSDOT Nuclear Density Gauge User Training, or approved equivalent (as required).
EVALUATION PROCEDURES

I. INSPECTOR / LABORATORY EVALUATIONS

Every Inspector and every non-Department Laboratory engaged in material sampling and testing for use in acceptance decisions on NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA, will be evaluated by IAST. This evaluation will consist of observation of the Inspectors sampling/testing techniques and evaluation of test results obtained through split sample testing.

Prior to the Producer supplying material to NYSDOT and Federal funded highway projects, including other projects deemed necessary by FHWA, the IAST program will verify that the Producer Laboratories meets the annual Regional plant approval as outlined in NYSDOT Standard Specifications § 401-3.02 and § 501-2.03. This may be accomplished as part of the annual plant approval process conducted by the Regional HMA/PCC Plant Supervisor or as a separate evaluation conducted by IAST staff.

A.) GENERAL PROCEDURE:

- Verify the Inspectors approved training certification/qualifications and expiration date.
- Observe the Inspector’s sampling and testing procedures, including essential calculations.
- Inspect the field/laboratory testing equipment and performing tests on split samples taken by the Inspector using designated IAST or AASHTO approved laboratory testing equipment.
- All evaluation information will be recorded on an IAST worksheet and entered into SiteManager/LIMS database within one week after time of visit.
- The IAST personnel perform the observation portion of the evaluation at the Inspector’s work location. The Inspector must take a sample large enough to be split into two samples of testable size, and test one of the split samples on the equipment normally used for acceptance tests. The IAST personnel inspects the test equipment, witnesses the Inspector’s sampling and testing procedures and tests the second half of the split sample using IAST testing equipment specifically designated for IAST or on Regional Materials or Geotechnical laboratory equipment, at the Regional Laboratory.
- The IAST Supervisor compares the difference of the two test results to the acceptable variations given in Appendix D. The IAST Supervisor investigates any unacceptable variations to determine the cause. Once the reason has been identified, it must be corrected to the satisfaction of the IAST Supervisor, Regional Materials Engineer or Regional Geotechnical Engineer, according to the procedures outlined in Evaluation Results Section, “Follow-up Action”.

B.) Procedural Evaluation Instructions:

1. Training Certification/Qualifications:

Verify the Inspector’s approved training certification/qualifications and expiration date. Note in “Remarks” section of the report.

- If it is found that the Inspector does not possess the required approved training certification/qualifications, proceed with the evaluation and inform the Engineer-In-Charge (EIC), RME, and the Inspector’s employer (if applicable) that this Inspector may not continue to perform material acceptance tests for NYSDOT/Federal funded projects until the appropriate required approved training has been obtained. This may require another visit to the Project or Plant at a later date to ensure that this Inspector has been replaced by qualified staff or has successfully completed the appropriate approved training.

- If tests procedures have changed since the last evaluation or date of formal training; inform the Inspector of these changes and demonstrate proper test procedures, if required, and then proceed with the evaluation.

2. Inspecting the Test Equipment:

Before the Inspector begins the sampling and testing procedures, inspect all test equipment to be used.

a) If the equipment appears to be in compliance with the test procedure specifications:
   - Proceed with the evaluation.

b) If any equipment is not in compliance with the test procedure specifications:
   - Inform the Inspector that the equipment can not be used for any acceptance testing until it is repaired or replaced to the satisfaction of the Regional Materials Engineer, or their representative.
   - Select “NO” under “Procedure Followed” on the “IAST Evaluation Worksheet”, and indicate the reason for the failure in the “Remarks”.
   - End the evaluation and schedule another evaluation ASAP, when equipment has been repaired/calibrated, or replaced.
   - Inform the EIC, RME, or their representative, and the Producer, if applicable, of the deviation.
   - Follow the procedures as outlined in the SiteManager IAST Data Entry Instruction Manual when recording the information from the IAST Field Worksheet.

   - OR –

   - Proceed with another evaluation using backup equipment, if available, and follow the procedures as out lined in the SiteManager IAST Data Entry Instruction Manual and record as a follow-up evaluation.
3. Observation of Sampling Procedure:

Observe the Inspector’s sampling technique, paying close attention to notice any deviations from the proper test procedure.

a) If the Inspector follows the sampling proper procedure proceed with the evaluation.

b) If the Inspector deviates from the proper sampling procedure:
   - Denote “NO” under “Was Test Procedure Followed?” on the IAST Worksheet. This will constitute a failure for the IAST evaluation.
   - Note the deviation in the “Remarks” section and that the procedure was improperly followed on the IAST Worksheet.
   - Instruct the Inspector on how to take the sample properly and note on Worksheet.
   - Have the Inspector take a new sample. This will be documented as a “follow-up evaluation”.

4. Observation of Testing Procedure:

Observe the Inspector’s testing technique, paying close attention to notice any deviations from the proper test procedure and review essential calculations.

a) If the Inspector follows the proper procedure, denote “YES” under “Was Test Procedure Followed?” on the IAST Worksheet, and proceed with the evaluation.

b) If the Inspector deviates from the proper test procedure in a way that can be immediately corrected with no effect on the results of the test;
   - Immediately correct the Inspector’s procedure and continue with the evaluation.
   - Note the deviation and that the incorrect procedure was not repeated on the IAST Worksheet.
   - Denote “NO” under “Was Test Procedure Followed?” on the IAST Worksheet. This will constitute a failure for the IAST evaluation.

c) If the Inspector deviates from the proper test procedure in a way that cannot be immediately corrected;
   - Denote “NO” under “Was Test Procedure Followed?” on the IAST Worksheet. This will constitute a failure for the IAST evaluation.
   - Note the procedure deviation on the IAST Worksheet.
   - Instruct the Inspector in the proper testing procedure after completing the evaluation, and note on Worksheet.
   - Have the Inspector repeat the test procedure. This may require taking a new sample. This will be indicated as a follow-up evaluation, and may require another evaluation sometime in the near future.
5. Split Sample Testing

The split sample is tested by the IAST personnel in the field using IAST specific equipment. If the split sample is to be tested in the Regional/Main Office Laboratory, only IAST personnel or AASHTO accredited Laboratory Technicians will be authorized to perform the required tests using equipment that is either specifically used for IAST testing, or AASHTO accredited laboratory equipment. IAST split samples may not be tested on the same equipment that the Inspector being evaluated used. Split sample test results are compared to acceptable variation as indicated in APPENDIX D in this manual.

a) If split sample tests results are found to be outside of the acceptable variation as indicated in APPENDIX D in this manual, this will constitute a failure for the IAST evaluation.
   - Inform the EIC, RME, or their representative, and the Producer, if applicable, of the deviation.
   - Schedule a follow up evaluation ASAP to determine the cause of the failure.

b) If the failure was due to equipment non-conformance, inform the Inspector, Producer and EIC, that the equipment can not be used for any acceptance testing until it is repaired or replaced to the satisfaction of the Regional Materials Engineer, or their representative.
   - Schedule a follow up evaluation ASAP, when equipment has been repaired/calibrated, or replaced.

NOTE:

- **Split sample tests are used as a means of verifying the acceptability/calibration of the Inspector's equipment. Therefore, split sample tests must be performed for every IAST evaluation (where applicable), even if the equipment was recently evaluated and found to be in compliance with the acceptable variation as indicated in APPENDIX D in this manual.**

- If split sample tests were not performed – select N/C (not checked) and indicate in the “Remarks” why it was not evaluated. This may be the case in a follow – up evaluation of a test procedure not requiring split sample tests.

- If split sample tests are not applicable – select N/A (not applicable) and indicate in the “Remarks” why it was not evaluated.
C. **Proper Test Procedures:**

Perform all tests according to the appropriate documents listed below:

1. PCC Structures/PCC Pavement
   - Coarse Aggregate Gradation - M.M. 9.1
   - Fine Aggregate Gradation - M.M. 9.1
   - Sampling - M.M. 9.1, M.M. 9.2
   - Slump - M.M. 9.2
   - Air Content - M.M. 9.2
   - Cylinder Fabrication* - M.M. 9.2
   
   * PCC Structures only

2. PCC Precast
   - Approved Quality Control Plan
   - Coarse Aggregate Gradation - M.M. 9.1, or ASTM C-136
   - Fine Aggregate Gradation - M.M. 9.1, or ASTM C-136
   - Slump - M.M. 9.2
   - Spread Test* – ASTM C 1611/C 1611M
   - Air Content* - M.M. 9.2
   - Cylinder Fabrication* - M.M. 9.2
   
   * For Self-Consolidating Concrete, follow Manufacturer’s Quality Control Plan.

3. Hot Mix Asphalt Production Facility Testing
   - Hot Bin Analysis – NYSDOT Standard Specifications § 401 (batch plant)
   - Composite Gradation Analysis (drum plant) - NYSDOT Standard Specifications § 401
   - Superpave Compacted Specimen Formulation - M.M. 5.16
   - Bulk Specific Gravity - NYSDOT Standard Specifications § 401
   - Max. Theoretical Specific Gravity - NYSDOT Standard Specifications § 401
   - Asphalt Binder Sampling - NYSDOT Standard Specifications § 401

4. Hot Mix Asphalt - Field Testing
   - Witness density testing and procedures

5. Granular Materials
   - Sampling - GCP-17
   - Grain Size Analysis - STM-20
   - In-Place Density Determination - STM-6, -9, or -10
     
     (use same method as Project Inspector)

6. Embankment Material
   - In-Place Density Determination - STM-6, -9, or -10
     
     (use same method as Project Inspector)
EVALUATION RESULTS

I. REVIEW OF EVALUATION RESULTS:

The Inspectors evaluation results along with the test split sample test data will be recorded in the field and later entered into SiteManager/LIMS database. After the IAST evaluation has been satisfied, the IAST staff will verbally notify the Inspector and Project Engineer the outcome of the evaluation when split sample test results are obtained at time of visit. If further testing is required to obtain split sample test results, finding will be made known at a later date.

The IAST Supervisor compares the Inspector’s and IAST personnel’s test results to determine if the results are within the acceptable variation range shown in APPENDIX D of this manual. These tolerances are also programmed into SiteManager/LIMS database, and will check the comparative tests results upon saving the entered test data (see IAST Data Entry Instruction Manual). If the tests results are not within the acceptable range, the IAST Supervisor will investigate to see if there is an equipment issue or testing procedure concern. The IAST Supervisor will indicate the determination in the remarks section of the field evaluation worksheet; and will ultimately be recorded in the SiteManager/LIMS database.

Once the evaluation results have been entered into the SiteManager/LIMS database and approved by the Regional IAST Supervisor, the report will be forwarded to the Main Office, Materials Bureau or Geotechnical Bureau IAST Administrator, for final “Authorization”. Once authorized, the findings will be reported by E-Mail to the Inspector and Project Engineer, etc.

1.) Test Results that are within the acceptable limits:

If all test and sampling procedures were followed and split sample test results meet the acceptable variation as outlined in APPENDIX C, no further action will be required and the Inspector will be deemed “qualified”. However, the Inspector may be re-evaluated at a later date at the IAST Supervisors discretion. The Inspector and Project Engineer will be informed of the findings at the conclusion of the evaluation, if no further testing is required to obtain split sample test results. If further testing is required to obtain split sample test results, the IAST Supervisor will provide the Main Office, Materials Bureau or Geotechnical Bureau the evaluation report within one week of evaluating the test results.

2.) Test Results/Procedures that are not within the acceptable limits:

If the Inspector Deviates from Appropriate Test Procedure, or Split Sample Test Results are NOT Within Acceptable Variation Limits: The Inspector and Project Engineer will be informed of the findings at the conclusion of the evaluation, if no further testing is required to obtain split sample test results. If further testing is required to obtain split sample test results, the IAST Supervisor will provide the Main Office, Materials Bureau or Geotechnical Bureau the evaluation report within one week of evaluating the test results.
A follow-up evaluation will be scheduled as soon as possible, if determined necessary by the IAST Supervisor.

All “Follow-Up Evaluations” will be performed by the IAST Supervisor. The follow-up evaluation may consist of a full observation and split sample testing, or review of the Inspectors testing procedure only, where split sample testing is not required. The IAST Supervisor will immediately notify the Regional Materials Engineer or Regional Geotechnical Engineer, Inspector, and Inspector’s Employer of any equipment identified during the follow-up evaluation as being malfunctioning, not calibrated, deficient, or defective. If further testing is required to obtain split sample test results, the IAST Supervisor will provide the Main Office, Materials Bureau or Geotechnical Bureau the evaluation report within one week of evaluating the test results.

II. “FOLLOW – UP” EVALUATION ACTIONS:

1.) If the Inspector passes the “Follow-Up” Evaluation, and is found to be Qualified:
   - The Inspector and Project Engineer will be informed of the findings at the conclusion of the evaluation, if no further testing is required to obtain split sample test results. If further testing is required to obtain split sample test results, the IAST Supervisor will provide the Main Office, Materials Bureau or Geotechnical Bureau the evaluation report within one week of evaluating the test results.

2.) If the Inspector fails the “Follow-Up” Evaluation, and is found to be Unqualified:
   - If the Inspector fails to follow proper materials sampling and testing procedures, the IAST Supervisor will immediately notify the Inspector, the Inspector’s Employer (if applicable), the project EIC, the Regional Construction, Geotechnical and Materials Engineers, and Main Office Materials Bureau in writing that the Inspector fails to meet the requirements of a qualified Inspector.
   - The written notification will indicate the specific procedure(s) for which the Inspector is unqualified to perform, and give notice that, effective beginning on the date of the written notification, any test results obtained by the Inspector using the procedures listed in the written notification will not be used by the Department for any acceptance decisions, until the Inspector receives approved required training.

Note: The above course of action will not apply for equipment non-conformance.
3.) After receiving the necessary approved training, the Inspector’s Employer must provide proof that the Inspector successfully completed the required training, and make a written request to the Regional Construction, Geotechnical and Materials Engineers, and the Main Office, Materials Bureau to schedule an IAST evaluation.

4.) Once notified, the IAST Supervisor will schedule an evaluation in a timely manner.
   - The IAST evaluation process will follow the same procedure as previously outlined above (Section V- Inspector and Laboratory Evaluations).

Note: NYMaterials HMA certification as a Quality Control/Quality Assurance Technician can be revoked by NYMaterials for repeated failure to perform tests properly, or falsification of documents according to the procedures given in the NYMaterials certification manual.
EVALUATION RECORD KEEPING PROCEDURES

All IAST evaluation reports will be recorded in the Departments AAHSTO SiteManager/LIMS database.

The IAST Supervisor will designate an individual to either enter the evaluation data into SiteManager/LIMS, or review the IAST evaluation report and the data to verify that it was entered correctly.

It is highly recommended that the person entering the IAST information into AASHTO SiteManager/LIMS database, not check their own work.

The IAST Supervisor will review previous reports from evaluations of the same Inspector to see where previous failures occurred, and if repetitive. The Supervisor will also verify all training credentials.

1.) All the required information contained on the “IAST Evaluation Worksheet” must be entered into the AASHTO SiteManager/LIMS database within one week of obtaining split sample results, (if applicable) or one week of the evaluation date.

2.) One evaluation must be submitted for each Inspector or Plant evaluated at any given time.
   a. If one Inspector is responsible for multiple PCC or HMA field projects using the same test equipment, only one Inspection evaluation will be required. Separate reports must be submitted to cover each project that the Inspector is responsible for. However, it is highly recommended that each project be visited at least once during the construction season.
   b. If an Inspector is responsible for a material production facility that is supplying material from multiple plants at the same location utilizing the same quality control lab, only one Inspection evaluation will be required, with the following exception.

   - If the HMA Plant Laboratory being evaluated supplies material to NYSDOT projects using both “Drum” and “Batch” Plants, the Inspector must be evaluated at each Plant due to differing testing and sampling techniques required at each Plant.
3.) Each evaluation, when entered into SiteManager will be given a unique sample I.D. number, that serves as identification and can be used for tracking at any time.

4.) Refer to the sample I.D. number in all correspondence concerning a specific IAST evaluation.

5.) The IAST Supervisor (or in extraordinary instances the Regional Materials or Geotechnical Engineer) must review and approve all IAST data entry in SiteManager/Lims. The data base system will automatically indicate if the split sample test results are or are not within variation limits. Once approved, the evaluation will be forwarded to the Main Office, Materials Bureau or Geotechnical Bureau IAST Administrator for final review.

6.) The Main Office, Materials Bureau or Geotechnical Bureau IAST Administrator will review all the information entered, and will “authorize” if correct. If information is missing or entered inaccurately, the evaluation will be sent back to the Region for corrections. Upon final authorization, an automatic E-Mail will be sent to the Inspector and Project Engineer, etc. as confirmation of the evaluation results.
One each of the following items is required. The IAST program may also use the same equipment as the AASHTO accredited Regional Laboratory.

### A. Gradation Analysis Equipment

One each of the following items is required.

<table>
<thead>
<tr>
<th>8” diameter sieves, full height</th>
<th>8” diameter sieves, half height</th>
<th>18” x 26” screen trays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Designation</td>
<td>Sieve Designation</td>
<td>Sieve Designation</td>
</tr>
<tr>
<td>Alternative</td>
<td>Standard</td>
<td>Alternative</td>
</tr>
<tr>
<td>Cover</td>
<td>Cover</td>
<td>Storage Rack</td>
</tr>
<tr>
<td>4”</td>
<td>100 mm</td>
<td>¼”</td>
</tr>
<tr>
<td>3”</td>
<td>75 mm</td>
<td>No. 4</td>
</tr>
<tr>
<td>2”</td>
<td>50 mm</td>
<td>No. 8</td>
</tr>
<tr>
<td>1½”</td>
<td>37.5 mm</td>
<td>No. 16</td>
</tr>
<tr>
<td>1”</td>
<td>25 mm</td>
<td>No. 30</td>
</tr>
<tr>
<td>¾”</td>
<td>19 mm</td>
<td>No. 50</td>
</tr>
<tr>
<td>½”</td>
<td>12.5 mm</td>
<td>No. 100</td>
</tr>
<tr>
<td>⅜”</td>
<td>9.5 mm</td>
<td>No. 200</td>
</tr>
<tr>
<td>¼”</td>
<td>6.3 mm</td>
<td>Pan</td>
</tr>
<tr>
<td>No. 4</td>
<td>4.75 mm</td>
<td>No. 4</td>
</tr>
<tr>
<td>⅛”</td>
<td>3.2 mm</td>
<td>½”</td>
</tr>
<tr>
<td>No. 8</td>
<td>2.36 mm</td>
<td>No. 8</td>
</tr>
<tr>
<td>No. 10</td>
<td>2.00 mm</td>
<td>No. 10</td>
</tr>
<tr>
<td>No. 16</td>
<td>1.18 mm</td>
<td>No. 16</td>
</tr>
<tr>
<td>No. 20</td>
<td>850 μm</td>
<td>No. 20</td>
</tr>
<tr>
<td>No. 30</td>
<td>600 μm</td>
<td>No. 30</td>
</tr>
<tr>
<td>No. 40</td>
<td>425 μm</td>
<td>No. 40</td>
</tr>
<tr>
<td>No. 50</td>
<td>300 μm</td>
<td>No. 50</td>
</tr>
<tr>
<td>No. 80</td>
<td>180 μm</td>
<td>No. 80</td>
</tr>
<tr>
<td>No. 100</td>
<td>150 μm</td>
<td>No. 100</td>
</tr>
<tr>
<td>No. 200</td>
<td>75 μm</td>
<td>Pan</td>
</tr>
</tbody>
</table>

Go No-Go gauges: 2”, 1¼”, 1”, ¾”, ½”, ⅜”, ¼”, No. 4
B. SCALES

One each of the following items is required:

- Platform scale, (50 kg), or digital scale of equal or greater capacity, readable to 5 g
- Digital scale, (6000 g), readable to 0.01 g
- Test weight set to 0 to 1000 g with case
- Test weight set 0.5, 1, 2, 5, 10, and 25 kg.

C. CONCRETE TEST EQUIPMENT

One each of the following items is required.

- Pressure meter with accessories (calibrated monthly, or as required)
- Tamping Rod
- Concrete scoop
- Slump cone
- Ruler (min. 12”)
- Thermometer (calibrated annually, or as required)

D. HOT MIX ASPHALT EQUIPMENT

1. Gyratory Compacted Specimen Formulation

- Gyratory compactor and accessories (AASHTO TP 4)
- 150 mm mold (AASHTO TP 4)
- Specimen Conditioning Ovens and accessories (AASHTO PP 2)
- Thermometer (AASHTO PP 2)

2. Maximum Theoretical Specific Gravity Determination (AASHTO T 209)

- Vacuum container
- Vacuum pump
- Residual pressure manometer
- Manometer or vacuum gauge

3. Bulk Specific Gravity (AASHTO T 166)

- Suspension Apparatus
- Water Bath
E. IN-PLACE DENSITY DETERMINATION (EARTHWORK)

- Volumeter apparatus w/matching base plate – (2)
- Standard tares for moisture content samples – (5)
- 1/10 ft³ mold
- 0.07 ft³ mold
- 1/30 ft³ Proctor Compaction mold
- Standard Proctor Compaction rammer (5.5 lb, 12” drop, 2” diameter face).
- Carpenter’s hammer
- Bucket (2.5 gal. capacity)
- Friction top can (1 gal. capacity)
- Cold chisel
- 2” paint brush
- 6” Butcher’s knife
- Large 15” spoon
- Personal protective equipment (safety glasses, work gloves, etc.)
Concrete Plant:
Follow procedures outlined in NYSDOT MM 9.1 and ASTM/AASHTO.

- **INSPECTOR TRAINING VERIFICATION and EMPLOYER:**
  - NYSDOT “In-House” training required or approved equal.
  - Note whether DOT or Consultant.

- **SAMPLING AGGREGATES:**
  - Conical Stock Piles
    - Minimum of 9 locations around the pile.
  - Other Stock Piles
    - Minimum of 6 locations.
  - Sample Size
    - Follow MM 9.1 or ASTM/AASHTO requirements.

- **SAMPLE PREPARATION:**
  - Splitting
    - Do not split wet material.
    - Use correct splitter and insure that it is set up correctly -
      (check opening size/spacing).
    - Follow proper procedures outlined in MM 9.1.
  - Quartering
    - Follow proper procedures outlined in MM 9.1 (wet material).

- **MOISTURE CONTENT:**
  - Procedure
    - Do not over or under dry.
    - Let material cool before weighing.
  - Calculations
    - Use proper formula (divide by the dry weight).

- **GRADATIONS:**
  - Procedures
    - Follow MM 9.1 test procedures.
    - Do not overload sieves.
  - Calculations
    - Follow MM 9.1 and ASTM/AASHTO. Total mass after sieving must
      be within 0.3% of original dry sample mass.
    - Report to the nearest tenth of a percent.
  - Visual
    - Compare material to approved source samples.
  - Friction Aggregate
    - Verify that aggregate is being used, perform visual comparison test,
      other laboratory tests if required.
EQUIPMENT:

- **Splitters**
  - Set up correctly (opening size and spacing).

- **Shakers**
  - Gilson (18”x26” screen trays)
    - Set up properly (sieving level).
    - Have required cover.
  - Ro-taps/other
    - Operating properly.

- **Sieves**
  - In proper working condition (no tears, holes, worn wires, etc.).

- **Timers**
  - Properly set to required time and working properly.

- **Scales**
  - Verify calibration and check with calibrated weights if necessary.
CONCRETE FIELD:

Follow ACI and NYSDOT MM 9.2 procedures.

❖ INSPECTOR TRAINING VERIFICATION and EMPLOYER:
  - ACI Concrete Field Testing Technician – Grade 1
  - NYSDOT “In-House” training.
  - NICET level II or greater with required components.
  - Other “approved equal”
  - Note whether DOT or Consultant.

❖ SAMPLING:
  - Though not required as part of the evaluation – Inspector should follow ACI and MM 9.2, (at least sample from middle of batch) and should be noted in remarks if procedure is not followed.

❖ SLUMP:
  - Procedure
    o Follow ACI and MM 9.2

❖ AIR CONTENT:
  - Procedure
    o Follow ACI and MM 9.2
  - Split Sample
    o Variation within tolerance as indicated in IAST Manual, if not within tolerance - investigate and correct if possible.

❖ CYLINDERS:
  - Procedure
    o Follow MM 9.2. If cylinders are not required as part of Project requirements – have Inspector cast cylinders for IAST evaluation only and should be noted in “Remarks”.

❖ TEMPERATURE:
  - Though not required as part of the evaluation – Inspector should follow ACI and MM 9.2, and should be noted in “Remarks” if procedure is not followed.
Precast Concrete Plant:
Follow procedures outlined in NYSDOT MM 9.1 and approved Quality Control Plan.

- **INSPECTOR TRAINING VERIFICATION:**
  - “Formal” batch plant training not required at this time.
  - Check Quality Control Plan for list of Inspectors routinely testing material for NYSDOT projects.
  - Evaluate all Inspectors routinely testing material for NYSDOT projects.
  - Plant does not have to be producing material for NYSDOT at time of visit.

- **SAMPLING AGGREGATES:**
  - **Conical Stock Piles**
    - Minimum of 9 locations around the pile.
  - **Other Stock Piles**
    - Minimum of 6 locations.
  - **Sample Size**
    - Follow MM 9.1 or ASTM/AASHTO requirements.
  - **Other**
    - As per approved Quality Control Plan.

- **SAMPLE PREPARATION:**
  - **Splitting**
    - Do not split wet material.
    - Use correct splitter and insure that it is set up correctly (check opening size/spacing).
    - Follow proper procedures outlined in MM 9.1.
  - **Quartering**
    - Follow proper procedures outlined in MM 9.1 (wet material).

- **MOISTURE CONTENT:**
  - **Procedure**
    - Do not over or under dry.
    - Let material cool before weighing.
  - **Calculations**
    - Use proper formula (divide by the dry weight).
IAST PROCEDURE MANUAL FOR CONSTRUCTION MATERIALS

✓ GRADATIONS:
  • Procedures
    o Follow MM 9.1 test procedures.
    o Do not overload sieves.
  • Calculations
    o Follow MM 9.1 and ASTM/AASHTO. Total mass after sieving must be within 0.3% of original dry sample mass.
    o Report to the nearest tenth of a percent.
  • Visual
    o Compare material to approved source samples.

✓ EQUIPMENT:
  • Splitters
    o Set up correctly (opening size and spacing).
  • Shakers
    o Gilson (18”x26” screen trays)
      - Set up properly (sieving level).
      - Have required covers.
    o Ro-taps/other
      - Operating properly.
  • Sieves
    o In proper working condition (no tears, holes, worn wires, etc.).
  • Timers
    o Properly set to required time and working properly.
  • Scales
    o Verify calibration and check with calibrated weights if necessary.
PRECAST CONCRETE (Plastic Concrete Tests):

Follow ACI, NYSDOT MM 9.2 procedures and approved Quality Control Plan.

- **INSPECTOR TRAINING VERIFICATION:**
  - ACI Concrete Field Testing Technician – Grade 1.
  - Check Quality Control Plan for list of Inspectors routinely testing material for NYSDOT projects.
  - Evaluate all Inspectors routinely testing material for NYSDOT projects.
  - Plant does not have to be producing material for NYSDOT at time of visit.

- **SAMPLING:**
  - Not required as part of the evaluation – Inspector should follow approved Quality Control Plan.

- **SLUMP/SPREAD:**
  - **Procedure**
    - Follow ACI and MM 9.2 and Approved Quality Control Plan.

- **AIR CONTENT:**
  - **Procedure**
    - Follow ACI and MM 9.2 and Approved Quality Control Plan.
  - **Split Sample**
    - Variation within tolerance as indicated in IAST Manual, if not within tolerance - investigate and correct if possible.

- **CYLINDERS:**
  - **Procedure**
    - Follow MM 9.2 and Approved Quality Control Plan.
HMA PLANT:
Follow NYSDOT MM 5.0, 5.16, 8.1, 28 and MP 401 / AASHTO T27, T166, T168, T209, T248

- INSPECTOR TRAINING VERIFICATION and EMPLOYER:
  - NYMaterials certification or approved equivalent.
  - Note whether DOT, Consultant or Producer.

- SAMPLING AGGREGATES:
  - Stock Piles
    - Minimum of 6 or 9 locations depending on type.
  - Composite Sample – Drum Plant
    - From stopped belt or approved sampling device.
  - Hot Bin – Batch Plant
    - Proper sampling device.
  - Sample Size
    - Follow MM 5.0 and/AASHTO T27.

- AGGREGATE SAMPLE PREPARATION:
  - Splitting
    - Do not split wet material.
    - Use correct splitter and insure that it is set up correctly (check opening size/spacing).
    - Follow proper procedures outlined in MM 5.0.
  - Quartering
    - Follow proper procedures outlined in MM 5.0 (wet material).

- AGGREGATE/MIXTURE MOISTURE CONTENT (AASHTO T255/T329):
  - Procedure
    - Follow MM 5.0 test procedures.
    - Proper sample size.
    - Do not over or under dry.
    - Let material cool before weighing.
  - Calculations
    - Use proper formula (divide by the dry weight).

- GRADATIONS:
  - Procedures
    - Do not overload sieves.
    - Follow AASHTO T27 and MM 5.0 test procedures.
  - Calculations
    - Follow MM 5.0 and AASHTO T27.
    - Total mass after sieving must be within 0.3% of original dry sample mass.
    - Report to the nearest tenth of a percent.
  - Friction Aggregate
    - Follow MM 28.
IAST PROCEDURE MANUAL FOR CONSTRUCTION MATERIALS

- **BITUMINOUS MIXTURE SAMPLING:**
  - **Procedure**
    - Follow AASHTO T168
  - **Sample Size**
    - Follow AASHTO T 168

- **VOLUMETRIC TESTS:**
  - **Specific Gravity - Max \( G_{mm} \)**
    - **Procedure**
      - Follow AASHTO T209 (see MP 401- Table 3, note 8)
  - **Specific Gravity - BULK \( G_{mb} \)**
    - **Procedure**
      - Follow AASHTO T166

- **BINDER SAMPLING:**
  - **Procedure**
    - Follow MM 5.0 and MM 8.1

- **EQUIPMENT:**
  - **Splitters**
    - Set up correctly (opening size and spacing).
  - **Shakers**
    - Gilson / Ro-taps / other
      - Set up properly (level).
      - Have required covers.
      - Operating properly.
  - **Sieves**
    - In proper working condition (no tears, holes, worn wires, etc.).
  - **Scales**
    - Verify calibration and check with calibrated weights if necessary.
  - **Timers**
    - Properly set to required time and working properly.
  - **Thermometers**
    - Properly calibrated.
  - **Ovens** (including ignition oven)
    - Set at proper temperature and calibrated.
  - **Water Bath**
    - Water level maintained at constant level.
    - Proper temperature or use appropriate correction factor.
    - Specimen completely submerged and centered.
  - **Vacuum System**
    - Working properly.
  - **Pycnometers**
    - Verify calibration.
  - **Gyratory compactor**
    - Calibration verification and set up properly.
    - Molds – visual inspection (defects).
HMA FIELD:


Use the following NYSDOT BR forms: (BR form 340 and 341 for Nuclear Density gauges; BR form 68 and 69 for the Pavement Quality Indicator; BR form 70 and 71 for the PaveTracker)

- **GENERAL INFORMATION:**
  - Complete all project information.
  - Complete gauge information.
  - Complete type of paving.

- **INSPECTOR TRAINING VERIFICATION:**
  - Verify the inspectors have a NYMaterials certification or approved equivalent.

- **GAUGE SET UP:**
  - Nuclear gauges - warmed up and standardized daily.
  - Non-nuclear gauges – Offset or reference value has been determined and recorded on the appropriate BR form.

- **GAUGE OPERATION:**
  - No interference that would affect gauge operation.
  - Gauge placed flat on HMA surface and not over cracks or depressions.
  - Outline gauge footprint.
  - Nuclear gauge - Gauge source rod locked in proper testing position.
  - Nuclear gauge - No long or short-sticking.
  - Non-Nuclear gauge – Offset or reference value being used matches the value used during the Test Section.

- **SPECIFICATION COMPLIANCE:**
  - Measurements/Readings taken at the specified locations.
  - Measurements are being recorded accurately.
  - Average reading is being calculated immediately and correctly.
  - Average of the Last 10 Readings is being calculated immediately and correctly.
  - If the specifications were not met, did the inspector stop the paving operation, and construct a new Test Section.

- **CORING OPERATION:**
  - Pavement cooled enough prior to coring.
  - Core drill set up properly (perpendicular to pavement and proper amount of cooling water being used).
  - Core not damaged during removal.
  - Cores labeled correctly and bagged/sealed by State Inspector.
APPENDIX C

Available Training for NYSDOT Staff

- The Geotechnical Training Courses are offered annually by the Geotechnical Engineering Bureau. Any requests should be directed to the Regional Geotechnical Engineer or the Director, Geotechnical Engineering Bureau.

- The ACI certification training course and recertification course is offered annually by the Materials Bureau and many local technical colleges statewide. Any requests should be directed to the Regional Materials Engineer or the Director, Materials Bureau.

- NYSDOT Concrete Field Testing Technician Training Program course is offered annually by the Materials Bureau or as deemed necessary. Any requests should be directed to the Regional Materials Engineer or the Director, Materials Bureau.

- NYSDOT Concrete Batch Plant Training Program** course is offered annually by the Materials Bureau or as deemed necessary. Any requests should be directed to the Regional Materials Engineer or the Director, Materials Bureau.

- Hot Mix Asphalt certification from NYMaterials, as a Quality Control/Quality Assurance Technician, currently offered at Alfred State College. Any requests should be directed to the Regional Materials Engineer or the Director, Materials Bureau.

- New York State Hot Mix Asphalt Density Inspector Training Program course is offered annually by the Materials Bureau or as deemed necessary. Any requests should be directed to the Regional Materials Engineer or the Director, Materials Bureau.

** This training will be provided to “Consultant” inspection staff until an approved equivalent training program becomes available.

- Equivalent certifications from other organizations will be considered for acceptance on a case-by-case basis by the Director, Materials Bureau.

Note: At the time of printing for this manual the Hot Mix Asphalt NYMaterials certification course and Associated General Contractors (AGC) Hot Mix Asphalt certification is only offered though Alfred State, SUNY College of Technology in Alfred, NY. For a list of other locations where this training may be offered, contact NYMaterials or AGC directly.
New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
PORTLAND CEMENT CONCRETE - FIELD

Sample ID____________________ Lab Reference Number____________________

Basic Sample Data Tab

<table>
<thead>
<tr>
<th>Sample Date:</th>
<th>Smpl Type: (F=Field, P=Plant, G=Grain Size)</th>
<th>Material: (Do not use “MIX”)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASF</td>
<td>CLASS-____________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sampler: (user ID of the inspector. If not found, STOP)</th>
<th>Producer/Supplier:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plant Location:</th>
<th>Geog Area:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Sample Data Tab

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

Other Tab

<table>
<thead>
<tr>
<th>Destination Lab:</th>
<th>Contracts Supplied:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email: (Inspector Evaluated)</th>
<th>Email: (IEC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email: (Regional IAST Supervisor)</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NYS

IAST Portland Cement Concrete - Plastic Concrete

**SLUMP/SPREAD**

- Inspector's Test: [ ] Yes, [ ] No, [ ] N/A
- Procedure Followed: [ ] Yes, [ ] No, [ ] N/A

**AIR CONTENT (%)**

- Inspector's Test: [ ] Procedure Followed: [ ] Yes, [ ] N/A
- Procedure Followed: [ ] Results Within Limits: [ ] Yes

**CYLINDER FABRICATION**

- Cylinder Number: [ ]
- Cylinder Location: [ ]
- Procedure Followed: [ ] Yes, [ ] N/A

REMARKS:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

5/10
IAST PROCEDURE MANUAL FOR CONSTRUCTION MATERIALS

New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
PORTLAND CEMENT CONCRETE - PLANT

Sample ID ____________________ Lab Reference Number ________________

Basic Sample Data Tab

<table>
<thead>
<tr>
<th>Sample Date:</th>
<th>Smpl Type: (P=Plant)</th>
<th>Material: (aggregates only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASP</td>
<td></td>
</tr>
</tbody>
</table>

Sampler: (user ID of the inspector) If not found, STOP
Geog. Area:

Additional Sample Data Tab

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

Other Tab

<table>
<thead>
<tr>
<th>Destination Lab:</th>
<th>Facility Number(s): (Concrete Batch Plant)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contracts Supplied:

<table>
<thead>
<tr>
<th>Email: (Inspector Evaluated)</th>
<th>Email: (EIC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email: (Regional IAST Supervisor)</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NYS

IAST Concrete - Aggregate Gradation

<table>
<thead>
<tr>
<th>Sieve</th>
<th>1.5 in. (37.5 mm)</th>
<th>1 in. (25 mm)</th>
<th>1/2 in. (12.5 mm)</th>
<th>1/4 in. (6.3 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Insp. Test | IAST

**Procedure Followed?**

- Yes
- N/A
- No
- N/C

<table>
<thead>
<tr>
<th>Sieve</th>
<th>3/8 in. (9.5 mm)</th>
<th>No. 4 (4.75 mm)</th>
<th>No. 8 (2.36 mm)</th>
<th>No. 16 (1.18 mm)</th>
<th>No. 30 (500 um)</th>
<th>No. 50 (300 um)</th>
<th>No. 100 (150 um)</th>
<th>No. 200 (75 um)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Insp. Test | IAST

**Procedure Followed?**

- Yes
- N/A
- No
- N/C

REMARKS:

<table>
<thead>
<tr>
<th>Remarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

5/10
New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
HOT MIX ASPHALT - PLANT

Sample ID_________________ Lab Reference Number_______________

**Basic Sample Data Tab**

| Sample Date: | Sample Type (F=Field, P=Plant, G=Grain Size) | Material: | IASP 402-
|-------------|-----------------------------------------------|-----------|---------
| Sampled: (user ID of the inspector) | If not found, STOP | Producer/Supplier: | |
| Plant Location: | Geog Area: | | |

**Additional Sample Data Tab**

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

**Other Tab**

<table>
<thead>
<tr>
<th>Destination Lab:</th>
<th>Contracts Supplied:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email: (Inspector Evaluated)</td>
<td>Email: (EIC)</td>
</tr>
<tr>
<td>Email: (Regional IAST Supervisor)</td>
<td>Email:</td>
</tr>
</tbody>
</table>

**NYS IAST Hot Mix Asphalt - Plant**

<table>
<thead>
<tr>
<th>Aggregate Gradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Inspect Test</td>
</tr>
</tbody>
</table>

**Procedure Followed?**

- Yes
- N/A
- No
- N/C

**Volumetric Tests**

<table>
<thead>
<tr>
<th>Specific Gravity</th>
<th>Inspector's Test</th>
<th>IAST Test</th>
<th>Procedure Followed?</th>
<th>Results Within Variation Limits?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theo. Max $G_{mm}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulk $G_{mb}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Asphalt Binder Sampling**

<table>
<thead>
<tr>
<th>Procedure Followed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

**REMARKS:**

---

5/10
**IAST PROCEDURE MANUAL FOR CONSTRUCTION MATERIALS**

New York State Department of Transportation

**INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET**

**HOT MIX ASPHALT - FIELD**

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Lab Reference Number</th>
</tr>
</thead>
</table>

**Basic Sample Data Tab**

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Smpl Type: (F=Field, P=Plant, G=Grain Size)</th>
<th>Material:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASF</td>
<td>402-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sampler: (user ID of the inspector)</th>
<th>If not found, STOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer/Supplier:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plant Location:</th>
<th>Geog Area:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Sample Data Tab**

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

**Other Tab**

<table>
<thead>
<tr>
<th>Destination Lab:</th>
<th>Contracts Supplied:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email: (Inspector Evaluated)</th>
<th>Email: (E&amp;C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Email: (Regional IAST Supervisor)</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**NYS**

**IAST Hot Mix Asphalt - Field**

**HMA Density Inspector**

<table>
<thead>
<tr>
<th>Density Inspector ID Number</th>
<th>Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type of Paving**

- Test Strip
- Routine Paving
- Both

**Type of Density Gauge**

- Nuclear Density
- Pavement Quality Indicator (PQI)
- Pavetracker

**Gauge Brand and Model Number**

<table>
<thead>
<tr>
<th>Gauge Serial Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**GAUGE SETUP**

- Pass
- Fail
- N/A
- N/C

Nuclear Density Gauge - gauge warmed up and standardized daily, according to the manufacturer's instructions.

**GAUGE OPERATION**

- Pass
- Fail
- N/A
- N/C

No interferences are present that would affect the gauge operation. (Large metal objects, walls, other nuclear sources, overhead power lines, etc.).

The gauge is being placed flat on the HMA mat so that it is in maximum contact with the mat. It is not being placed over cracks, segregated areas, depressions, etc.

The gauge footprint is being outlined with a lumber crayon for each measurement.

Nuclear Density Gauge - The gauge source rod is being locked into the Backscatter position (No long-sticking or short-sticking).
New York State Department of Transportation  
INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET  
HOT MIX ASPHALT - FIELD

### SPECIFICATION COMPLIANCE

- **Measurements/Readings**
  - Pass/Fail: N/A/N/C
  - Measurements are being taken at locations as described in the specifications, and immediately recorded (varying transverse, longitudinal, etc.).

- **Average Measurements**
  - Pass/Fail: N/A/N/C
  - Measurements at each location are being averaged immediately and checked against the minimum and maximum reading values (0.98°FTD and 1.03°FTD).

- **Last Readings**
  - Pass/Fail: N/A/N/C
  - When 10 or more readings have been taken, the last 10 readings are being averaged and checked against the minimum average of 10 value (0.98°FTD).

- **Operator’s Stopping**
  - Pass/Fail: N/A/N/C
  - If the specifications are not met, the operator immediately stopped the paving operation, and had a new test section constructed.

### CORING OPERATION

- **Preparation**
  - Pass/Fail: N/A/N/C
  - The pavement is cooled enough to prevent damage to the sample due to the coring operation (use of ice, dry ice, etc.).

- **Drill Setup**
  - Pass/Fail: N/A/N/C
  - Drill is setup so that the drill bit will cut perpendicular to the pavement surface.

- **Sample Collection**
  - Pass/Fail: N/A/N/C
  - The operator is using enough water while cutting to prevent damage to the core sample.

- **Core Handling**
  - Pass/Fail: N/A/N/C
  - When the cutting operation is done, the core is being removed from the hole without causing damage to the core.

- **Core Labeling**
  - Pass/Fail: N/A/N/C
  - After the core(s) have been labeled, bagged, and sealed by the State representative, the gauge operator takes possession of the sample(s) for transport to the Regional Materials Laboratory.

### REMARKS:

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Remarks</th>
<th>Remarks</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET

PRECAST - FIELD

Sample ID_________________ Lab Reference Number_________________

### Basic Sample Data Tab

<table>
<thead>
<tr>
<th>Sample Date:</th>
<th>Sample Type: (F=Field, P=Plant, G=Grain Size)</th>
<th>Material:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASF</td>
<td>CLASS-PRECAST</td>
</tr>
</tbody>
</table>

- Sampler: (user ID of the inspector: If not found, STOP)
- Producer/Supplier: (Concrete Batch Plant)
- Plant Location: __________
- Geo Area: __________

### Additional Sample Data Tab

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

### Other Tab

- Destination Lab: __________
- Facility Number(s): (Precast Facility Number)
- Contracts Supplied: __________
- Email: (Inspector Evaluated): __________
- Email: (IEC): __________
- Email: (Regional IAST Supervisor): __________

### NYS IAST Portland Cement Concrete - Plastic Concrete

<table>
<thead>
<tr>
<th>Slump/Spread</th>
<th>Air Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspector’s Test</td>
<td>Procedure Followed?</td>
</tr>
<tr>
<td>Yes</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- Results Within Limits: Yes

### CYLINDER FABRICATION

<table>
<thead>
<tr>
<th>Cylinder Number</th>
<th>Cylinder Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Procedure Followed: Yes | N/A | No | N/A |

### REMARKS:

- Enter any additional comments or observations here: __________________________
- Enter any additional comments or observations here: __________________________
- Enter any additional comments or observations here: __________________________

---

5/10

Page 1 of 1

39
IAST PROCEDURE MANUAL FOR CONSTRUCTION MATERIALS

New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
PRECAST - PLANT

Sample ID________________________ Lab Reference Number________________________

Basic Sample Data Tab

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>Smpl Type: (P=Plant)</th>
<th>Material: (aggregates only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASP</td>
<td>703-02</td>
</tr>
</tbody>
</table>

Sampler: (user ID of the inspector) If not found, STOP
Geog Area:

Additional Sample Data Tab

Witnessed By: (user ID of the IAST personnel who performed the evaluation)

Other Tab

Destination Lab:
Facility Number(s): (Both Concrete Batch Plant & Precast)
Contracts Supplied:
Email: (Inspector Evaluated) Email: (IJC)
Email: (Regional IAST Supervisor) Email:

NYS

IAST Concrete - Aggregate Gradation

<table>
<thead>
<tr>
<th>Sieve</th>
<th>1.5 in. (37.5 mm)</th>
<th>1 in. (25 mm)</th>
<th>1/2 in. (12.5 mm)</th>
<th>1/4 in. (6.3 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspt. Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IAST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Procedure Followed? ○ Yes ○ N/A ○ No ○ N/C

<table>
<thead>
<tr>
<th>Sieve</th>
<th>3/8 in. (9.5 mm)</th>
<th>No. 4 (4.75 mm)</th>
<th>No. 8 (2.36 mm)</th>
<th>No. 16 (1.18 mm)</th>
<th>No. 30 (500 um)</th>
<th>No. 50 (300 um)</th>
<th>No. 100 (150 um)</th>
<th>No. 200 (75 um)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspt. Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IAST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Procedure Followed? ○ Yes ○ N/A ○ No ○ N/C

REMARKS:


5/10

Page 1 of 1
New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
GEOTECHNICAL – GRAIN SIZE ANALYSIS

Sample ID______________ Lab Reference Number______________

<table>
<thead>
<tr>
<th>Basic Sample Data Tab</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Date:</td>
<td></td>
</tr>
<tr>
<td>Smpl Type: (G=Grain Size Analysis)</td>
<td>IASG</td>
</tr>
<tr>
<td>Material:</td>
<td></td>
</tr>
<tr>
<td>_sampler: (user ID of the inspector)</td>
<td>If not found, STOP</td>
</tr>
<tr>
<td>Producer/Supplier:</td>
<td></td>
</tr>
<tr>
<td>Plant Code(s):</td>
<td></td>
</tr>
<tr>
<td>Plant Location:</td>
<td></td>
</tr>
<tr>
<td>Geog Area:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional Sample Data Tab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Witnessed By: (user ID of the IAST personnel who performed the evaluation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Tab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination Lab:</td>
</tr>
<tr>
<td>Contracts Supplied:</td>
</tr>
<tr>
<td>Email: (Inspector Evaluated)</td>
</tr>
<tr>
<td>Email: (EIC)</td>
</tr>
<tr>
<td>Email: (Regional IAST Supervisor)</td>
</tr>
<tr>
<td>Email:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NYS IAST Geotechnical Items - Grain Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve</td>
</tr>
<tr>
<td>Insp. Test</td>
</tr>
<tr>
<td>Test Procedure Followed</td>
</tr>
</tbody>
</table>

Sampling Procedure Followed
Yes | N/A | No | N/C

REMARKS: 

---
New York State Department of Transportation

INDEPENDENT ASSURANCE SAMPLING & TESTING WORKSHEET
GEOTECHNICAL – FIELD DENSITY

Sample ID_________________ Lab Reference Number_________________

### Basic Sample Data Tab

<table>
<thead>
<tr>
<th>Sample Date:</th>
<th>Sample Type: (F= Field Density)</th>
<th>Material:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IASF</td>
<td>733-_____</td>
</tr>
</tbody>
</table>

Sampler: (user ID of the inspector. If not found, STOP)
Producer/Supplier:
Plant Location:
Plant Code(s):
Geog Area:

### Additional Sample Data Tab

*Witnessed By: (user ID of the IAST personnel who performed the evaluation)*

### Other Tab

<table>
<thead>
<tr>
<th>Destination Lab:</th>
<th>Contracts Supplied:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Email: (Inspector Evaluated)
Email: (EC)
Email: (Regional IAST Supervisor)
Email:

### NYS IAST Geotechnical Items - Field Density

#### Field Compaction Method

<table>
<thead>
<tr>
<th>Test</th>
<th>Field Compaction Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○ GTM-6</td>
</tr>
<tr>
<td></td>
<td>○ GTM-9</td>
</tr>
<tr>
<td></td>
<td>○ GTM-10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insp. Test</th>
<th>Field Wet Density (lbs)</th>
<th>Wet Weight of Soil in Standard Compaction Mold</th>
<th>Percent of Standard* Proctor Max. Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAST</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Procedure Followed

- Yes ○ N/A ○
- No ○ N/C ○

REMARKS:

---

Page 1 of 1
## APPENDIX E
### ACCEPTABLE VARIATION LIMITS

**Acceptable Variations for HMA Testing**  
(Lab to Lab Tolerance Specified in § 401)

<table>
<thead>
<tr>
<th>TEST</th>
<th>ACCEPTABLE VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation</td>
<td></td>
</tr>
<tr>
<td>Coarse Aggregate (% passing) (≥ 425 µm)</td>
<td>± 7.0 %</td>
</tr>
<tr>
<td>Fine Aggregate (% passing) (&lt;425 µm)</td>
<td>± 3.0 %</td>
</tr>
<tr>
<td>Theoretical Maximum Specific Gravity</td>
<td>± 0.019</td>
</tr>
<tr>
<td>Bulk Specific Gravity</td>
<td>± 0.028</td>
</tr>
</tbody>
</table>

**Acceptable Variations for PCC Testing**

<table>
<thead>
<tr>
<th>TEST</th>
<th>ACCEPTABLE VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation</td>
<td></td>
</tr>
<tr>
<td>Coarse Aggregate (% passing) (≥ 6.3 mm)</td>
<td>± 5.0 %</td>
</tr>
<tr>
<td>Fine Aggregate (% passing) (&lt; 6.3 mm)</td>
<td>± 2.0 %</td>
</tr>
<tr>
<td>Air Content</td>
<td>± 0.5 %</td>
</tr>
</tbody>
</table>

**Acceptable Variations for Geotechnical Item Testing**

<table>
<thead>
<tr>
<th>TEST</th>
<th>ACCEPTABLE VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain Size Analysis</td>
<td></td>
</tr>
<tr>
<td>Sieve sizes (% passing) (≥ 425 µm)</td>
<td>± 5.0 %</td>
</tr>
<tr>
<td>Sieve sizes (% passing) (&lt; 425 µm)</td>
<td>± 2.0 %</td>
</tr>
<tr>
<td>Field Wet Density</td>
<td>&lt; 5 lb (2.3 kg)</td>
</tr>
</tbody>
</table>