



Charles D. Baker, Governor  
Karyn E. Polito, Lieutenant Governor  
Stephanie Pollack, Secretary & CEO  
Frank DePaola, Administrator



December 13, 2016

Dear Cement Concrete Producer,

Please follow the instructions provided below in this year's 2017 Cement Concrete Producers Annual Letter. Please note mailed, facsimile (faxes), and emailed prequalification documents will not be accepted by MassDOT Research & Materials (RMS) for this year's Cement Concrete Prequalification Program. All submittals shall be done electronically through the newly developed "MassDOT Cement Concrete Producer SharePoint Site". Instruction on how to gain access and how to utilize the SharePoint Site is explained in the "2017 Cement Concrete Producer User Manual". This manual, along with helpful links, a copy of this Annual Letter, MassDOT Forms, and contact information can be found by accessing the following link:

[http://projectcontrols2.massdot.state.ma.us/sites/Concrete/\\_layouts/15/start.aspx#/SitePages/Home.aspx](http://projectcontrols2.massdot.state.ma.us/sites/Concrete/_layouts/15/start.aspx#/SitePages/Home.aspx)

Training will be offered as well, via "WebEx", on December 15, 2016, at 9:00 AM. "Webex" is an online technology that will allow the Producer to be trained at their desktop computer. Also provided is a link to "MassDOT Manuals, Publications, and Forms", where you can find digital copies of MassDOT Standard and Supplemental Specifications:

<http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms.aspx>

#### **Plant Inspection for New Ready Mix Cement Concrete Manufacturers**

Requests for plant inspection must be made, via email to Walter Knox (RMS Field Materials Control Engineer) and the plant's corresponding District Materials Engineer. Once notified, the District is to inform the New Ready Mix Cement Concrete Plant of MassDOT plant inspection requirements and to perform the plant audit. Send the email to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Materials Control Engineer)
2. TO: District Materials Engineer (choose your corresponding district):
  - District 1: [david.e.thomas@dot.state.ma.us](mailto:david.e.thomas@dot.state.ma.us)
  - District 2: [amy.bisbee@dot.state.ma.us](mailto:amy.bisbee@dot.state.ma.us)
  - District 3: [thomas.kwiatkowski@dot.state.ma.us](mailto:thomas.kwiatkowski@dot.state.ma.us)
  - District 4: [albert.kwok@dot.state.ma.us](mailto:albert.kwok@dot.state.ma.us)
  - District 5: [robert.fitzgerald@dot.state.ma.us](mailto:robert.fitzgerald@dot.state.ma.us)
  - District 6: [brian.kelleher@dot.state.ma.us](mailto:brian.kelleher@dot.state.ma.us)

#### **Plant Inspection for New Precast/Prestressed Cement Concrete Manufacturers**

Requests for plant inspection must be made, via email to Walter Knox and Matt Sukeforth (RMS Inspector). Once notified, Matt Sukeforth is to inform the New Precast/Prestressed Cement Concrete Plant of MassDOT plant inspection requirements and to perform the plant audit. Send the email to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Materials Control Engineer)
2. TO: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us) (RMS Inspector Engineer for Precast/Prestress)

#### **Cement Concrete Design of Mixes Sheet (Submission Deadline: January 15, 2017)**

All mix design yields will be at 1.0 cubic yard. A tolerance of +/- 1.0 % will be allowed for the design yield. All design liquids shall include both water and admixtures in the liquid mass calculation. The "2017 RMS 043 Cement Concrete Mix Design Sheet.xlsm" can be obtained by navigating to the

Five Macadam Street, Hopkinton, MA 01748  
Telephone: 857-368-3400  
[www.mass.gov/massdot](http://www.mass.gov/massdot)

“MassDOT Cement Concrete Producer SharePoint Site” (see link below). Instruction on how to gain access and how to utilize the SharePoint Site is explained in the “2017 Cement Concrete Producer User Manual”, which will be sent in a separate email.

<http://projectcontrols2.massdot.state.ma.us/sites/Concrete/layouts/15/start.aspx#/SitePages/Home.aspx>

Please be advised, the 2017 RMS 043 Cement Concrete Mix Design Sheet has been revised and contains the following changes:

1. The 2017 RMS 043 (as well as all other pre-qualification documentation) is to be submitted to the newly developed “MassDOT Cement Concrete Producer SharePoint Site”
2. The 2017 RMS 043 contains a “PRODUCER SHAREPOINT SAVE BUTTON”, which generates the following:
  - a. RMS 043 Mix Design Sheet Identification Number
  - b. Automatic file naming convention
  - c. Automatic SharePoint “Save As”
3. Only plants in operation and have the ability to be sampled by RMS personnel with the materials (i.e. aggregates, cements, and mitigation) are allowed to submit RMS 043s. “Back up plant” RMS 043 submissions are only to be submitted when the “Back up plant” is operational, and may be submitted after the mandated **January 15, 2017** RMS 043 submittal deadline. All RMS 043 submissions must be submitted to the “MassDOT Cement Concrete Producer SharePoint Site” in the following formats:
  - a. Microsoft Excel (.xlsm)
  - b. Signed scanned copy of the original (.pdf)

**Alkali Silica Reactivity AASHTO T 303 Modified (Submission Deadline: April 1, 2017)**

All aggregates (including lightweight and heavyweight) are to be tested for Alkali Silica Reactivity (AASHTO T 303 Modified: Accelerated Mortar Bar Test), using the mitigation and cementitious percentages shown on the mix design, by MassDOT approved laboratories. Producers who have failed to have the annual AASHTO T 303 (Modified) performed by MassDOT approved laboratories will not receive an approval to produce for MassDOT projects in 2017. A list of approved participating laboratories is located on the following link:

<http://www.massdot.state.ma.us/highway/Departments/ResearchandMaterials/QualifiedASRTestingLaboratories.aspx>

Cement Concrete Producers are to send their “**2017 RMS 043 Cement Concrete Mix Design Sheet (.xlsm)**” to the MassDOT approved laboratory(s) of their choosing. This excel spreadsheet now includes the Alkali Silica Reactivity AASHTO T 303 Modified Test Report Form (RMS 905). The RMS 043 and RMS 905 are now linked to eliminate erroneous entries onto the Test Report Form. Approved laboratories are to send the RMS 905 Test Report Form directly to their respective Cement Concrete Producer. Cement Concrete Producers are to save the RMS 905 Test Report Form to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual) as close to the test completion date as possible, and no later than **April 1, 2017**, in the following formats:

1. Microsoft Excel (.xlsm)
2. Signed scanned copy of the original (.pdf)

Producers are encouraged to submit a “contingency mitigating material” (e.g. back up fly ash, back up slag, etc.) as a potential substitute for their primary mitigating material, and are to perform mortar bar testing using the substitute material. This is to expedite the mix design approval process if unforeseen fly ash or slag shortages occur. The producer is not required to perform mortar bar testing for that same mix with their primary mitigating material. However, if a “contingency mitigating material” is not

submitted by the producer, then mortar bar testing of the primary mitigating material is required. If a contingency mitigating material is listed on the RMS 043 Design of Mixes Sheet and has not been tested by the approved laboratory at the time of submission, the submitted mix design will not be accepted until that mortar bar testing is performed by the approved laboratory.

Coarse Aggregate from Aggregate Industries: Swampscott, MA, as well as Fine Aggregate from Ossipee Aggregates: Ossipee, NH are considered statistically non-reactive. Mix designs utilizing these aggregate sources will not require annual mortar bar test as long as minimum mitigation is utilized, as specified in Subsection M 4.02.00. MassDOT reserves the right to require standard ASR testing for these aggregate sources if future mortar bar results show that reactivity has increased.

**Please be advised that Coarse Aggregate from P. J. Keating: Acushnett, MA has been determined to be reactive based off of ASTM C1293 test results, and has been taken off the “statistically non-reactive” list. Therefore, Coarse Aggregate from P. J. Keating: Acushnett, MA will require AASHTO T303 (Modified) testing.**

MassDOT will be conducting ASR verification testing of mitigated concrete mixes submitted by ready-mix and precast/prestressed producers throughout the year. If test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials will be disapproved. Further mitigation may be required and all test data must be re-submitted, prior to a new approval.

**Cement Concrete Producer Persons of Contact (Submission Deadline: January 15, 2017)**

MassDOT is moving towards utilizing more electronic correspondence in lieu of paper and the various mailing methods. In order to achieve this goal, the Producer is to submit the “Cement Concrete Producer Persons of Contact” no later than **January 15, 2017**, to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual), in the following format:

1. Microsoft Excel (.xlsm)

**Cement Concrete Producer Standard Shop Drawing Checklist (Submission Deadline: January 15, 2017)**

The purpose of this form is to confirm all Precast Companies doing business with MassDOT are in conformance with the most up-to-date MassDOT Standard Shop Drawings. Precast Companies are responsible for checking off all Standard MassDOT Shop Drawings that are in conformance with MassDOT policy. The Precast Company is to submit the “Cement Concrete Producer Standard Shop Drawing Checklist” no later than **January 15, 2017**, to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual), in the following formats:

1. Microsoft Excel (.xlsm)
2. Signed scanned copy of the original (.pdf)

Please access the following link for more information regarding MassDOT Standard Drawings:

<http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms.aspx>

**Alkali Silica Reactivity ASTM C 295 (Submission Deadline: April 1, 2017)**

ASTM C 295 Petrographic Examination of Aggregates shall be required for the following:

1. New aggregate source
2. New Cement Concrete Producer

Producers are to submit their independent test results no later than **April 1, 2017**, to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual). If test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials will be disapproved.

### **Aggregate and Cement (New Source Submission Deadline: April 1, 2017)**

Fine aggregate for Cement Concrete shall conform to MassDOT Standard Specifications, section M4.02.02 A and AASHTO M 6. The use of manufactured fine aggregate shall be allowed. Coarse aggregate for Cement Concrete shall conform to MassDOT Standard Specifications, section M4.02.02 B and AASHTO M 8. Cement, Fly Ash, Slag, and Silica Fume shall conform to AASHTO M 85, AASHTO M 295, AASHTO M 302, and AASHTO M 307 respectively. MassDOT shall be able to obtain source samples at the plant through an agreed upon method with the manufacturer.

The tolerance for batching of both aggregate and cementitious ingredients shall be as per AASHTO M 157. Weekly coarse aggregate gradation quality control testing at the batch plant will be acceptable. The total cement content as stated in section M4 of the MassDOT Standard Specifications for Highways and Bridges shall be met. All plants are required to maintain a laboratory with all equipment calibrated as per AASHTO R 18 and as per the MassDOT Standard Specifications section M4.02.08.

An Independent AASHTO Accredited Laboratory shall perform testing for all **new aggregate and cement sources**. Producers shall also submit a 25 lbs. sample of the new cementitious material to RMS and submit their independent test results no later than **April 1, 2017**, to the "MassDOT Cement Concrete Producer SharePoint Site" (refer to Cement Concrete Producer User Manual). If test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials will be disapproved.

### **Mitigation (Fly Ash, Slag, and Silica Fume)**

Fly Ash, Slag, and Silica Fume shall conform to AASHTO M 295, AASHTO M 302, and AASHTO M 307 respectively. MassDOT shall be able to obtain source samples at the plant through an agreed upon method with the manufacturer. In the event of an extenuating circumstance (supply shortage, shutdown, etc.), where a sudden source change is required, Cement Concrete Producers are to notify RMS, via e-mail to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Materials Control Engineer)
2. TO: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us) (RMS Inspector Engineer for Precast/Prestress)
3. TO: [richard.mulcahy@dot.state.ma.us](mailto:richard.mulcahy@dot.state.ma.us) (RMS Engineer in the Quality Assurance Section)

RMS will determine if this source change warrants testing from an Independent AASHTO Accredited Laboratory, as well as MassDOT Research & Materials. If it is determined that testing is not required, the Producer may incorporate the new source into the mix design. However, if testing is required, Producers shall perform testing through an Independent AASHTO Accredited Laboratory. Producers shall also submit a 25 lbs. sample of the new source to RMS for testing and submit their independent test results, as well as the previous six months of mill certifications from the plant producing the materials, no later than **April 1, 2017**, to the "MassDOT Cement Concrete Producer SharePoint Site" (refer to Cement Concrete Producer User Manual).

If the source is approved for use, The Producer is to perform a "one to one" substitution of the new source into the mix design (i.e., same weights). The Producer is to notify MassDOT RMS (see above for email addresses) of when the change over will occur, and for how long the source will be in use for. If test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials shall be removed from the mix design.

### **Chemical Admixtures for Cement Concrete**

Concrete admixtures must be pre-qualified by MassDOT and listed on the Qualified Construction Materials List (QCML). However, concrete admixtures that are not on the QCML may be approved for use on project specific contracts or special applications (shrinkage admixture, Darafill, etc.). Concrete admixtures must also be evaluated by the AASHTO National Transportation Product Evaluation Program (NTPEP) before they will be considered for review and acceptance. Concrete admixtures that do not meet the above mentioned criteria will not be allowed for use in concrete production. Chemical

admixtures for cement concrete will be listed on the OCML. You may view a list of approved concrete admixtures at:

<http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ApprovedMaterialsandFabricators/ConstructionMaterials/ConcreteAdmixtures.aspx>

The District Materials Engineer will be authorized to allow accelerating and retarding admixture use. This determination will be based on the recommendation of the admixture supplier. Slump tolerances shall be met in all cases.

### **Trial Batches**

Cement concrete mix designs must be submitted yearly for review. Regular mixtures that have been previously approved by RMS will be reviewed for use only if the mixture has not changed and all of the following requirements of this annual letter are met. If any source (aggregate, cement, fly ash, slag, silica fume, admixture, etc.) has changed, new mix design submittals, and new trial batches shall be performed prior to review and approval. Specialty or project specific mixtures that have not been utilized in MassDOT projects during the previous two years will be subject to new submittals and trial batches. If trial batch test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials shall be removed from the mix design. Requests for trial batching must be made, via email to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Control Materials Engineer)
2. TO: District Materials Engineer (choose your corresponding district):
  - District 1: [david.e.thomas@dot.state.ma.us](mailto:david.e.thomas@dot.state.ma.us)
  - District 2: [amy.bisbee@dot.state.ma.us](mailto:amy.bisbee@dot.state.ma.us)
  - District 3: [thomas.kwiatkowski@dot.state.ma.us](mailto:thomas.kwiatkowski@dot.state.ma.us)
  - District 4: [albert.kwok@dot.state.ma.us](mailto:albert.kwok@dot.state.ma.us)
  - District 5: [robert.fitzgerald@dot.state.ma.us](mailto:robert.fitzgerald@dot.state.ma.us)
  - District 6: [brian.kelleher@dot.state.ma.us](mailto:brian.kelleher@dot.state.ma.us)
3. TO: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us) (RMS Inspector Engineer for Precast/Prestress)
4. TO: [richard.mulcahy@dot.state.ma.us](mailto:richard.mulcahy@dot.state.ma.us) (RMS Engineer in the Quality Assurance Section)

In the event of an extenuating circumstance (supply shortage, shutdown, etc.), where a mitigation source (fly ash, slag, and silica fume) change is required, Cement Concrete Producers are to notify RMS, via e-mail to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Materials Control Engineer)
2. TO: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us) (RMS Inspector Engineer for Precast/Prestress)
3. TO: [richard.mulcahy@dot.state.ma.us](mailto:richard.mulcahy@dot.state.ma.us) (RMS Engineer in the Quality Assurance Section)

RMS will determine if this source change warrants trial batch testing. If it is determined that testing is not required, the Producer may incorporate the new source into the mix design. Once the new source is accepted, the Producer is to perform a "one to one" substitution of the new mitigating source into the mix design (i.e., same weights). Performance of the mix shall be monitored and accepted at the project level. If the mix design test results at the project level, show a trend of non-conformance to the specifications, the Producer will be notified immediately and the mixtures utilizing those materials shall be removed from the mix design.

### **High Performance Concrete (Submission Deadline: April 1, 2017)**

Please be aware that MassDOT may be utilizing a 4000 psi ¾" 585 Max High Performance (HP) concrete mixtures for exposed deck projects. The required Los Angeles Abrasion percentage loss for this product will be no more than 30%. Please note, the "total cementitious content" of HP concrete mixtures

specified under Section M4.06.1 shall be considered maximum cementitious content. An Independent AASHTO Accredited Laboratory shall perform Coulomb testing on HP concrete trial batches. Producers are to submit their independent test results no later than **April 1, 2017**, to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual). If test results are out of specification limits, the Producer will be notified immediately and the mixtures utilizing those materials shall be removed from the mix design.

### **Engineering Directives**

MassDOT periodically issues Engineering Directives on any “important” changes to procedures or specifications, such as air test tolerances, or hold back water. You are responsible for keeping informed as to all changes to specifications and/or procedures. The following link is available for you to review all Engineering Directives:

<http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/DesignEngineering/EngineeringDirectives/ListofEngineeringDirectives.aspx>

### **Ready-Mix Producers**

MassDOT projects may specify “Self Consolidating Concrete (SCC) and Rapid Strength Gain concrete mixtures during the 2017 construction season. The Ready-Mix Producer supplying these mixes will be required to demonstrate to MassDOT with the proper equipment, that they can consistently produce these mixes according to the Special Provisions for each project. Please be advised MassDOT requires any plant utilizing SCC mixtures to have all testing equipment required for the product and trained staff. Ready-Mix Producers are to notify their corresponding District Materials Engineer, via email (email addresses shown earlier in the document), so MassDOT personnel can perform a plant inspection.

### **Precast and Prestressed Manufacturers**

For Precast and Prestressed manufacturers AASHTO T 197 Time of Setting of Concrete Mixtures by Penetration testing is required. Please submit with mix designs a copy of your company’s current NPCA or PCI Certification and applicable Quality Control Personnel certifications to the “MassDOT Cement Concrete Producer SharePoint Site” (refer to Cement Concrete Producer User Manual). Precast and Prestressed manufacturers are required to follow PCINER-01-BMRG guidelines for repairs. Please be advised MassDOT requires any plant utilizing SCC mixtures to have all testing equipment required for the product and staff trained through PCI to perform the test. Precast and Prestressed manufacturers are to notify RMS, via e-mail to **ALL** of the following addresses:

1. TO: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us) (RMS Field Materials Control Engineer)
2. TO: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us) (RMS Inspector Engineer for Precast/Prestress)
3. TO: [richard.mulcahy@dot.state.ma.us](mailto:richard.mulcahy@dot.state.ma.us) (RMS Engineer in the Quality Assurance Section)

**Contact Information**

Should there be any questions or concerns, you may contact the following:

1. Richard Mulcahy
  - a. Email: [richard.mulcahy@dot.state.ma.us](mailto:richard.mulcahy@dot.state.ma.us)
  - b. Work Phone: (857)368-3422
2. Matt Sukeforth:
  - a. Email: [matt.sukeforth@dot.state.ma.us](mailto:matt.sukeforth@dot.state.ma.us)
  - b. Work Phone: (857)368-3432
3. Walter Knox:
  - a. Email: [wally.knox@dot.state.ma.us](mailto:wally.knox@dot.state.ma.us)
  - b. Work Phone: (857) 368-3431

Sincerely,

A handwritten signature in blue ink, appearing to read "John E. Grieco". The signature is fluid and cursive, with a large initial "J" and "G".

John E. Grieco, P.E.  
Director of Research and Materials