

April 1, 2021 - Update

VTrans COVID-19 Pandemic Temporary Guidelines for  
the Quality Assurance Program

General

1. With COVID health and safety guidelines well established over the past year, most components of the VTrans Quality Assurance Program will be in full effect for the 2021 construction season. The exceptions follow.

Qualified Technician Program (OTP)

1. Certification bodies such as ACI and NETTCP are providing certification opportunities. As such all consultant and contractor staff certifications are expected to be current.
  - a. Exceptions to the requirements of the OTP may be granted for personnel whose certifications are affected by a substantiated cause related to COVID business disruption.

Qualified Laboratory Program (QLP)

1. All non-accredited labs - State regional, consultant, and producer (HMA, Portland Cement Concrete (PCC), and Precast Concrete)
  - a. If the laboratory has not been inspected and approved by VTrans personnel, the laboratory will not be used for Acceptance testing
  - b. For those laboratories that have not been inspected by VTrans in 2021:
    - i. VTrans will send each laboratory the 2021 checklist used by VTrans staff to conduct laboratory inspection.
    - ii. The laboratory manager will perform their own internal audit of the laboratory, filling out the inspection checklist.
    - iii. The laboratory manager will email a completed checklist and supporting documents to the appropriate VTrans personnel.
    - iv. VTrans will review the completed checklist and perform a phone interview to go over the results of the audit. VTrans will issue an interim Laboratory Qualification.
    - v. During regular operations, the VTrans Materials section will verify laboratories for conformance with VTrans specifications and requirements.

Annual Production Facility Approvals (HMA, PCC, Precast  
Concrete plants)

1. VTrans will not accept materials from a production facility that has weigh scales out of service.
  - a. If a scale service company registered with the State of Vermont Agency of Agriculture, Food, and Markets Weights and Measures Program places the scales into service, VTrans will accept that in lieu of the official seal of the Weights and Measures Program.
  - b. For those production facilities that have not been inspected by VTrans in 2021:
    - i. VTrans will send each facility manager the 2021 checklist used by VTrans staff to conduct facility inspection.
    - ii. The facility manager will perform their own internal audit of the facility, filling out the inspection checklist. Include verification and statement of completion of annual mixer truck drum maintenance/inspection.
    - iii. The facility manager will email a completed checklist and supporting documents including all verification and calibration records to the appropriate VTrans personnel.
    - iv. VTrans will review the completed checklist and may perform a phone interview to go over the results of the audit. Based on the results of the audit and interview, VTrans will issue an interim plant approval.
    - v. During regular operations, the VTrans Materials section will verify production facilities for conformance with VTrans specifications and requirements.

Concrete (PCC)

1. New Concrete Mix Designs:
  - a. Concrete mix design review/approval by VTrans Structural Concrete Engineer will continue to operate as usual. Mix design submittals that are affected by a substantiated cause related to COVID business disruption may be granted 'Provisional' approval. 'Provisional' approval of the mix designs may be rescinded if VTrans Acceptance test results of that mix are not in conformance with the specifications requirements.

## Hot Mix Asphalt (HMA)

The following are temporary modifications to established VTrans HMA policies as well as Sections 406 and 407 of the 2018 Standard Specifications for Construction.

1. Production HMA Testing – VTrans Acceptance sampling will be performed during HMA paving production and placement.
  - a. VTrans Acceptance sampling and testing of HMA loose mix will be modified as follows:
    - i. For each project the project staff, construction paving engineer, and HMA materials unit will determine if the HMA materials for Acceptance will be:
      - 1) Sampled on project and tested at Central Laboratory, (See VTrans Temporary HMA Loose Mix Field Sampling Policy below), or
      - 2) Sampled at production facility and tested at Central Laboratory, or
      - 3) Sampled and tested at the production facility
    - ii. The week before paving, the Contractor will notify the VTrans HMA Field Unit and Construction Field staff with the anticipated date of paving and quantity of mix to be produced. When utilizing on-project sampling, random numbers used for Quality Assurance (QA) sampling purposes will be provided to VTrans Construction Field Staff, and also shared with Contractor Quality Control (QC) staff to afford comparison sampling of HMA mix at the production facility.
    - iii. During HMA production the Contractor QC personnel will perform the following additional duties:
      - a) Electronically transmit 'truck ticket' a.k.a. 'simple ticket' information to VTrans construction field staff in real-time using automated email system. If using manual system, send at least hourly, and send in real-time when a truck containing a sample point has been loaded. Include mixing temperature on the first ticket of each production shift and indicate 'last load' on the last ticket of the shift. Truck tickets must include at a minimum the following information;
        - Truck ID
        - Date loaded
        - Time loaded
        - Truck tonnage
        - Accumulated daily tonnage
        - Accumulated project tonnage
        - Ticket #

- Mix ID
  - b) Within 24 hours of the conclusion of each paving shift, enter all required QC test results into the Agency's SiteManager software.
    - In the event a SiteManager sample point has not been provided, QC test results may be emailed to;  
AOT.HMAField@vermont.gov
  - c) When available at the project site, aid in the collection of HMA loose mix Acceptance Samples in accordance with the "VTrans Temporary HMA Loose Mix Field Sampling Policy" found below.
  - iv. When Acceptance sampling of HMA loose mix occurs at the project site, it may be performed by VTrans Construction field staff and/or Contractor Staff in accordance with the "VTrans Temporary HMA Loose Mix Field Sampling Policy" found below.
  - v. Companion Quality Control sampling of HMA loose mix at the project site may be performed by contractor staff in accordance with the "VTrans Temporary HMA Loose Mix Field Sampling Policy" found below.
  - vi. Acceptance samples obtained on the project site will be immediately possessed by VTrans construction field staff for transit to the VTrans Central laboratory.
  - vii. VTrans Central laboratory staff will reheat, split, and test the field sampled HMA loose mix Acceptance samples in the laboratory in accordance with AASHTO test methods and VTrans practices.
2. VTrans Materials section staff will witness in-line sampling of PG Binder by contractor QC staff at the production facility, at the frequency specified in the VTrans Material Sampling Manual, while following all specific health and safety guidelines in effect. If unable to witness PG Binder sampling, VTrans may request the plant QC to obtain unwitnessed samples.
3. VTrans Core Acceptance will continue, with VTrans construction field staff following all specific health and safety guidelines in effect.
- a. Contractors are reminded of their obligation under the existing 406.14(b)(3) specification to dispute core sample locations, prior to coring, that they believe may not provide representative core samples.
  - b. For the purpose of determining Degree of Compaction in accordance with Subsection 406.14(b)(3), for materials that were subject to box sampling on project or at the production facility during production, VTrans will utilize the 'Maximum specific gravity from plant lab tests' that have been provided in the QC test results that were uploaded to the SiteManager system. If the QC test results for maximum specific gravity were not uploaded to the SiteManager system within 24 hours of the conclusion of the paving shift, VTrans will utilize the maximum

specific gravity value determined from the material that was box sampled for Acceptance testing.

4. Ride Quality – VTrans staff will continue performing Ride Quality testing per Subsection 406.16 as the situation permits and in accordance with all specific health and safety guidelines in effect.
  - a. In accordance with Subsection 406.16; *The roughness associated with any anomalous features beyond the control of the Contractor, such as mechanical bridge joints or utility structures, will be eliminated from the calculations of the final project average.* This will be interpreted to also include any anomalous roughness associated with stoppage of the paver for the purpose of box sampling.

## VTrans Temporary HMA Loose Mix Field Sampling Policy

The entirety of this policy assumes the following of all specific health and safety guidelines in effect. Fieldsampling of HMA loose mixture shall be performed in accordance with AASHTO R 97 unless otherwise specified.

### Sampling Equipment:

- Square ended shovel (side extensions recommended; if available)
- HMA mix thermometer (50 - 500 ° F)
- HMA sample boxes (approx. 400 in<sup>3</sup>)

Note: Sampling shovel shall be clean and free from any contaminants that may compromise the HMA sample. If cleaned or coated with release agent, allow excess to drain off and work back and forth through mix prior to sampling. The use of petroleum-based products to clean the sampling tools will not be permitted.

The VTrans Construction Field Staff and/or Contractor Staff shall perform field sampling. If Contractor Staff conduct sampling, it must be witnessed by VTrans Construction Field Staff.

### Sampling Preparation & Procedure:

- Random sample locations shall be determined by tonnage.
  - o All random VTrans Acceptance sample locations are to be determined by VTrans Materials prior to HMA production and placement. Sample locations will be shared with Contractor QC staff to afford comparison sampling of HMA mix at the production facility.
- The procedure for notifying the Contractor's representative of "intent to sample" should be addressed and discussed at the pre-paving meeting. It should include the following:
  - o Verify the random location or tonnage is approaching.
  - o Identify the haul unit carrying the HMA mix where the random sample is located, making sure that the haul unit is on-site prior to notification.
  - o Notify the Contractor's representative of the intent to obtain the random sample from the paver following HMA discharge from the identified haul unit.
- Insert thermometer into the mix in the paver hopper.
- Record truck ticket number, time of sampling, temperature of mix, and station/lane.
- Fill out the sample ID label with sample information.
  - o It is important to record station/lane when box sampling in the event of dispute of density or surface tolerance test results.
- Sample the HMA loose mix material from either the paver auger or paver/MTV hopper. Sampling method shall be agreed upon by the VTrans construction field staff and Contractor at the pre-pave meeting, and the same method utilized throughout the duration of the project if possible. It is recommended for Bonded Wearing Course projects to obtain non-random acceptance samples from the paver when it is stopped to refill liquid tanks, when appropriate.

### Sampling: Paver auger

1. Obtain samples from the end of the auger using a square head shovel.
2. Place the shovel in front of the auger extension, with the shovel blade flat upon the surface to be paved over.
3. Allow the front face of the auger stream to cover the shovel with asphalt mixture, remove the shovel before the auger reaches it by lifting as vertically as possible. Place HMA mixture in a sample container.
4. Continue shoveling until the sample box is full.

#### Sampling: Paver/MTV Hopper

1. Discharge the HMA mix so the material flows into the paver/MTV hopper in one continuous mass.
2. The sample should be obtained from the center (middle 1/3) of the overall load.
3. Make sure the hopper is full of mix at time of sampling.
4. Have the Contractor lower the truck body in a manner to minimize spillage.
5. Have the truck move out and away from the hopper.
  - a. The truck should be moved away a minimum of 30 feet and parked. The driver shall shutdown the engine as a safety precaution.
6. Have the paver stop, apply brakes, and shut down the engine.
7. For safety, the Contractor's person directing the truck should remain in full view of the truck driver to ensure that the truck does not back towards the paver while others are sampling.
8. When all equipment is secured, the sampling process may begin.
9. Remove the top 8 - 10" of mix across the center of the paver hopper, being careful not to sample within 1.5 feet of the hopper sides.
10. Trim the front of the area to be sampled to form an 8-inch vertical face.
11. Obtain a sample by digging into the vertical face horizontally until the shovel is full, being careful not to overfill the shovel.
12. Continue shoveling until the sample box is full.

#### Sample Storage and Delivery

1. Fill the sample box, being careful to minimize spillage.
2. Record the required sample ID information on the ID Label.
3. All VTrans Acceptance samples should be immediately secured with the sample label on the front side of the box to seal it closed and be possessed by the VTrans Construction Field Staff. The samples shall be stored in a secure and dry location until and during transport to the laboratory. The samples shall be transported by VTrans representatives to the Central laboratory.

## VTrans Temporary HMA Box Sample Dispute Resolution Policy

### Applicability

This policy applies to air voids test results obtained from HMA materials that have been 'box sampled' at the project site as defined in section 406.03C (g) of the 2018 VTrans Standard Specifications for Construction during the 2021 construction season, or sampled at the plant and central lab tested. The principles outlined in this section are intended to complement the executed contract or approved permit. If a conflict arises, the requirements specific to the contract govern.

### Roles and Responsibilities

**Contractor:** If the Contractor decides to contest the Owner air voids acceptance test results for box sampled HMA testing, the Contractor shall have submitted any and all relevant QC air voids test results including those developed by their Subcontractors or Producers, into the SiteManager portal by the conclusion of the paving shift during which the subplot in question was produced. As a backup, QC test results may be emailed directly to the HMA Unit ([AOT.HMAField@vermont.gov](mailto:AOT.HMAField@vermont.gov)) by the conclusion of the paving shift during which the subplot in questions was produced. Failure to do so results in forfeiture of the Contractors right to contest the results of the production lot in question.

**Owner:** The Owner will provide results of HMA box sample acceptance sampling and testing activities to the Contractor in a timely manner. The Owner testing protocols and results will conform to the current test methods as identified in the Owner specifications, unless otherwise noted. The Owner will not examine any Contractor opinion unless there are corroborating QC air voids test results that have been posted to SiteManager by the conclusion of the paving shift during which the subplot in question was produced. Test results and other Contractor supplied information will be analyzed with the purpose of establishing the most accurate and objective determination of the disputed air voids test result.

### Process

When the air voids acceptance test results required in Subsection 406.03C (e) have been relayed to both parties (the Engineer and Contractor), any individual subplot sample result may be contested and enter the air voids test result verification process as defined herein. This process will consider only those box samples processed by the Agency as an acceptance test and does not preclude the provisions of Subsection 406.03 (f). Samples will be compared for Bulk Specific Gravity, Max Specific Gravity, and finally Air Voids. If the test results for any of the three values are found to be outside the allowable range as defined in step 2, the Owner will rerun testing on left over acceptance box sample mix to determine an additional result(s) for the Max and/or Bulk Specific Gravity. If the new value lies between the QC and Acceptance result, it shall replace the Acceptance result. If the new value lies outside the QC and Acceptance result, it shall not be adopted.

The box sample air voids test result verification process is as follows:

Step 1. The Contractor will alert the Owner of their intent to dispute a box sampled air voids acceptance test result, and provide the relevant subplot identification.

Step 2. The Owner will compare the box sample air voids acceptance test result for the subplot identified in Step 1 to the corresponding QC sample air voids test result from the subplot in question to determine the difference between the two results. If the difference between the two air voids test results is



less than .8%, the entire lot of box sample air voids test results as reported under Subsection 406.03C (e) will be used in Percent Within Limits (PWL) calculations. If the difference between the two air void test results is greater than 0.8%, the Bulk and Max Specific gravity test results will be reviewed. If the difference between the acceptance and QC sample test results for Bulk and/or Max Specific Gravity is outside the Multi Lab d2S limits listed in their respective AASHTO test specifications, the Bulk and/or Max Specific Gravity tests will be rerun on excess material set aside from the acceptance sample. If the new bulk and/or max specific gravity value falls between the original QC and Acceptance values, it shall be adopted as the new acceptance test value, and the acceptance box sample air voids test result will be recalculated using this updated bulk and/or max specific gravity value. If the new bulk and/or max specific gravity value falls outside the original QC and Acceptance values, the new bulk and/or max specific gravity results shall be discarded. If there is not enough material for retesting, the original results will advance to step 3.

Step 3. Following the review of the Bulk and/or Max Specific Gravity values, if the air voids test results continue to exceed .8%, the acceptance test results for the subplot in question will be excluded when computing the Percent Within Limits (PWL) for the lot in question. If removal of a subplot test result leads to the lot in question having fewer than 4 remaining subplot test results, the lot in question will be combined with an adjacent lot as specified in Subsection 406.03C(c).

If aggrieved by the result of the dispute resolution process described herein, the Owner and the Contractor will defer to the requirements specified in Subsection 105.02. Both parties shall submit to the Chief Engineer a written report describing the disparity, all subsequent actions taken to date, all documentation related to these actions, and a proposed course of action for settlement. The Chief Engineer will review the submittals and all relevant project records and act in accordance with Subsection 105.02. If the Contractor does not concur with any final decision by the Chief Engineer, the Contractor may seek other remedies as specified under Subsection 105.02 and the Contract.

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Approved, VTrans

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Approved, FHWA