

To: All Construction Resident Engineers;
Project Engineers; Project Supervisors;
Project Personnel; Consultants
State Aid

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Subject: Materials Certification Process;

With the many new faces in MnDOT over the past few years, and with an increased use of Consultants in project administration, clarification of the final Materials Certification process and the required supporting information needed is necessary. The goal is to develop a better understanding of the Materials Certification Exceptions Summary form TP-02171-04 (“exceptions summary”), and create a packet for submittal that is simple and complete. This will also expedite the exceptions summary through the certification process. This memo is meant to be a **quick summary guide** of the *detailed* process, consult the Contract Administration Manual for in-depth explanations and exception clarifications. We are operating off the process defined in the Contract Administration Manual last updated May, 2011; under “Materials Certification Process” (5-591.430). The website can be found at: <http://www.dot.state.mn.us/const/tools/conadminmanual.html> .

This process for Materials Certification applies to all MnDOT (including MnDOT consultants) construction and maintenance contract projects, whether or not Federal Aid funding is involved. Projects administered by local agencies shall follow the process required by the State Aid Division, which has elected to follow the Standard Certification process in Federal-Aid projects as explained above, unless the project is funded by **100%** state aid or local funds (no Federal-Aid), in which case the IAST schedule does not apply. Please contact appropriate District Materials Office or State Aid Office if you are unsure if the project status is subject to State Aid requirements.

BACKGROUND;

The Federal requirement (23 CFR 637) states that for all Federal-Aid highway projects, all state DOT's have a Quality Assurance Program in place to ensure compliance. The MnDOT Quality Assurance Program consists of all those planned and systematic actions necessary to provide confidence that the product or service provided by a highway construction contractor, personnel, or construction product vendor meets Mn/DOT's requirements for quality.

The Quality Assurance Program consists of three parts:

1. **Acceptance Program** (QC/QA program, technician, lab, plant, and equipment certifications, approved products, Schedule of Materials Control).
2. **Independent Assurance Program** (Inspector evaluations and reviews, calibrations, laboratory companion and proficiency samples).
3. **Materials Certification** (Project Materials Certification-current tech memo, Office of Materials and Road Research Annual Project Compliance reviews, State Aid Project Audits/Reviews).

MATERIALS CERTIFICATION PROCESS

Field Documentation

The Acceptance Program is used to verify material quality as materials are incorporated into a project, accepted, and paid for. Whenever exceptions to the Acceptance Program requirements occur and are incorporated into the project, those exceptions and corresponding resolutions **must** be documented.

During the course of the project, and prior to or at the time of final acceptance of work (MnDOT Spec 1516.2), The Project Engineer will record exceptions and resolutions on the exceptions summary and/or document exceptions and resolutions by Supplemental Agreement, Change Order, or Back sheet items. The Project Engineer may consult with and request input from the appropriate Specialty Offices or District Materials Engineer and will complete and sign the form in the lower right hand corner. The Specialty Offices upon request will provide separate documentation that allows the Project Engineer to complete the form.

The District Materials Engineer reviews and signs the exception summary in the lower left hand corner of the form to indicate that he/she has had the *opportunity* to review the project during construction, and provide input. At the time of final acceptance of work, the exceptions summary **must** be completed and **all** exceptions resolved.

If the exceptions summary is not submitted correctly, or if all exceptions and resolutions have not been addressed, the Office of Construction and Innovative Contracting will delay submittal of the Final Payment Voucher and may not certify the project which may result in funding for the project to be questioned or denied.

All exceptions to the Acceptance Program requirements must be recorded on the exceptions summary, or listed on the Summary Report of Supplemental Agreements, Change Orders, and Back sheet items attached to the exceptions summary.

The following are job **EXCEPTIONS** needing a *proper* resolution:

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|-----------------------|--|
| Failing Tests | Any failure of an acceptance test: meaning a field test, quality control test, or verification companion test. Corrections or monetary adjustments resulting from failing tests must be listed as resolutions of exceptions. |
| Missing Tests | Any missed field test, quality control test, or verification test. Tests include required observations of quality control tests. New: Metro Inspection staff shortage = missing verification test(s) |
| Test Tolerance | Any tolerance failure between an acceptance test and the corresponding companion proficiency or Independent Assurance sample test. Companion sample tests are performed between: <ul style="list-style-type: none">• Field and laboratory samples• Quality Control and Quality Assurance samples• Verification and verification companion samples• Field and Independent Assurance samples• Quality Control and Independent Assurance samples• Plant monitor's quality assurance or verification samples and IA |

Note: When an acceptance test passes and the companion proficiency or Independent Assurance sample fails, but is *within* the allowed tolerance, there is **no** exception that has to be documented on the summary form.

Non-Certified Testers

Any acceptance samples taken or tests performed by non-certified, expired, or under-certified testers. This includes contractor quality control and QA tests when used for acceptance and Agency verification tests. This also includes tests not performed in a **qualified** (certified) laboratory or field testing lab.

Other Exceptions

- Material accepted from a non-approved source
- Missing Certificates of Compliance, etc...
- Paving without an approved Mix Design report or recommendation
- Independent Assurance tests fails **and** is out of tolerance
- Mix or paving out of a non-certified plant
- Testing done using uncalibrated, uncertified equipment
- **New:** Low concrete cylinder 28 day strength break (set = avg. of 3)

The following are **NOT Exceptions:**

- Field QC test passes, lab QA test fails, and the tests are within the lab/field test tolerance range.
- Independent Assurance test fails, but is *within* tolerance of the passing field test.
- Failed materials test which was corrected in the field, and no failing or out of spec. material was incorporated into the project. (for example: failed sand cone density test 98%, area re-watered, re-compacted, re-tested, now area is 102% = OK / passed. This test does **not** need to be listed on the exception summary form.)

Note: This is a partial list of the most common Non-Exceptions; consult the Contract Administration Manual and/or the Spec book for a complete list.

RESOLUTIONS:

Resolutions are required for **all** exceptions recorded on the Exceptions Summary form TP-02171. Resolutions can be brief, but must describe the action taken or the rationale for taking no action. Supporting documentation should be contained in the file and the document location referenced in the appropriate column.

Some examples of actions taken as resolutions may include “standard deduction applied”, or “\$ per unit monetary adjustment applied”, or “mix rate changed and testing rate increased”, or “testing equipment recalibrated, test rerun and passed”, or “area re-watered and re-compacted, test rerun and passed”.

Resolutions **may** in some certain instances also result in no actions having been taken. This is an acceptable resolution only when accompanied by **appropriate rationale**. Often, “substantial compliance” or “Materials incorporated in-place performing satisfactory” or “in close conformity” will be used for resolutions in these situations. **Generally, these resolutions should *only* be used for a minor test failure or the omission of a couple of tests out of many required tests.** Also rationale for taking no action must be included on the form. If any of the above resolutions are overused, it will result in the summary form being returned.

For example: If the current “Schedule of Materials Control” minimum acceptance testing rate for Sand cone is 1/1,000

yd3 (CV) for Agg base and the project has 14, 900 yd3, the minimum number of sand cone tests needed would be 15. Say you missed or failed one test, and the other 14 passed, you probably could use “substantial compliance” in this particular instance. But... if you missed more than one test or say you had 8 sand cone test failures, this type of resolution wording would not be correct.

Final Materials Certification Exceptions Summary Form (TP-02171-04)

It is the responsibility of the Project Engineer to verify that all aspects of the Acceptance Program were complied with and that any exceptions are duly documented and appropriately resolved on the form. By signing the Materials Certification Summary form the Project Engineer is certifying that all aspects of the project have been properly completed. Also by signing the summary form, the District Materials Engineer is attesting to the fact that he/she has reviewed the project and has had opportunity to provide input on the project.

The District/Metro Materials Engineer is responsible for making sure all Independent Assurance activities are completed, tracked, and reported on the form in the lower **left** hand corner. The District/Metro Materials Engineer or their representative is responsible for checking the appropriate IAST box in the lower left hand corner of the form, **not** the Project Engineer.

The Independent Assurance summary is reported annually to the Federal Highway Administration and is *separate* from the Materials Certification Process. It is an unbiased and independent evaluation of all the sampling and testing procedures used in the Acceptance Program, and aids the Project Engineer in assuring overall Project compliance.

The following paperwork MUST be attached and included in the overall Exceptions Summary Packet to expedite it through the certification process:

- Materials Certification Exceptions Summary form (TP-02171-04) completely filled out and **signed in blue ink** by the Project Engineer in the lower right hand corner. (Do not check IA boxes in the lower left hand corner of the form). Include all material specialty items used and any exception descriptions and subsequent resolutions.
- Project Technician roster listing **ONLY** the technicians/testers/samplers that actually did physical testing on the project (i.e. Sand cone density, DCP, gradations, air, slump cylinders, etc.) Do not list observers, visual inspectors, or personnel involved in checking finals/office personnel.
- Any Supplemental Agreements, Change Orders, or Back Sheet item exceptions
- If outstate MnDOT, an outside agency or consultant lab did the QA work, include their test results from all materials on the project and any exceptions discovered.
- If Metro Inspection was used on the project, include the e-mail/faxes from **Concrete** (Rich Gastecki) or **Bituminous** (Deb Evans). The e-mail/fax from Metro Inspection office confirms: they have reviewed their files for any materials exceptions (plant & lab, they could have additional exceptions you are not aware of) on the listed projects, have consulted the proper Specialty Office, and have recommended the appropriate resolution if any. If another agency or consultant lab did the QA work, include all test results and their review/report/ and recommendations on the project and any action that should be taken.
- Documentation of material exceptions and satisfactory resolution of exceptions.

Note: Any errors or missing documentation will result in returning the form back to the Project Engineer for corrections.

With all of the required information included or attached from above, the process for Final Materials certification begins. Send completed Materials certification packets for MnDOT projects to the metro Independent Assurance office and local or State Aid projects to the metro State Aid office. Independent Assurance will review their project records and lab reports, and check sample IAI/field/lab tolerances. If an IAI missing, failing, uncertified, or test tolerance exception is found: it, along with the lab reports, will be sent back to the Project Engineer to be included on the summary, along with the suitable resolution from the Engineer.

If after reviewing the Exception Summary all is found correct, IAI then checks the appropriate box in the lower left hand corner of the form, initials and dates it, and then sends it on the District/Metro Materials Engineer. Who after review, either signs and returns the form/packet to the Project Engineer for final processing, or can elect to return it unsigned for incomplete paperwork or improper/missing resolutions to exceptions.

Hopefully this memo will provide assistance through the process of Materials Certification. Please remember the purpose of this method is to provide *reasonable* assurance that all aspects of the Acceptance program have been satisfactorily completed and that the materials incorporated are in conformance to the Contract Specifications.

If you have any questions regarding this memo, please contact either:
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