



Office of Construction and Innovative Contracting
Technical Certification Unit

Technical Certification Handbook

2011

Updated October, 2011

For Your Information

REGISTRATION

Registration opens October 1st annually for all technical certification classes. Visit the ARM website at <http://armofmn.com/training> for class offerings and registration information. For information on the Technical Certification Program, visit <http://www.dot.state.mn.us/const/tcp/>. This site has links to the websites of the training partners who assist Mn/DOT in administering certification and non-certification classes. Training partner websites also go online October 1st annually.

AGGREGATE PRODUCTION REQUIRED

Aggregate Production is required for all aggregate testers. It is also required for certification in Bituminous Plant, Concrete Plant, and Grading & Base.

Currently Aggregate Production certification does not expire. Consequently, there are no recertification classes for Aggregate Production.

PROVISIONAL LEVEL 2 CERTIFICATIONS ELIMINATED

Level 2 provisional certifications have been eliminated effective September 1, 2005.

CERTIFICATION CARDS

Certification cards are normally mailed the middle of May. Cards returned to us are held until you notify this office of your current address.

RECERTIFICATION

Successful completion of a Level 2 certification class will extend the corresponding Level 1 certification to the Level 2 expiration date. Otherwise, individuals must take the requisite recertification class.

KEEP YOUR CONTACT INFORMATION CURRENT

Has your mailing or email address changed lately?

If so, please contact the Technical Certification Unit at: (651) 366-4247

TABLE OF CONTENTS

Introduction.....	5
Technical Certification Program Summary.....	6
Eligibility for Certification	7
Certification of Engineers	7
Certification Cards	8
Provisional Certification	9
Certifications from Other States	10
“Grandfather” Certifications	11
Course Calendars	11
Registration and Enrollment	12
Prerequisites for Certification Classes	13
Courses Required for Certification	13
Recertification	14
Retest	15
Revocation of Certification	16
Test-out for Certification	17
Certification Area Requirements	19
Certification Course Descriptions	30

Reference Section

Course Instructors	34
Cooperating Agencies	35
Mn/DOT Lab Chiefs/Exam Proctors	36
Technical Certification Advisory Committee	38

INTRODUCTION

The Technical Certification Unit developed this handbook to help you better understand the Mn/DOT Technical Certification Program (TCP). It addresses questions commonly asked about the program. However, for the sake of brevity, it does not address every aspect of the program. For questions not covered in this handbook, contact the Technical Certification Unit at (651) 366-4201.

This program is similar to other technician certification/qualification programs offered across the United States. By Federal mandate all state transportation departments have a technical certification program for construction and/or materials testing technicians. Programs vary somewhat from state to state but have a common objective: to gauge technician expertise and ensure a minimum level of competency.

TCP training courses are developed and taught cooperatively by Mn/DOT and various proponent agencies. Technical experts from Mn/DOT, private industry, and educational institutions teach these courses. Using experienced instructors is extremely helpful to students, especially during the hands-on training sessions conducted in a Mn/DOT or private industry materials laboratory.

People from all areas of the construction industry attend Mn/DOT technical certification courses. They receive various certifications through successful completion of classroom and laboratory training, written examination, and performance review. Many bring a wealth of experience with them, which they often share with others in the classroom. The communication and cooperation fostered in the classroom is one of the most beneficial aspects of the program.

The Mn/DOT Technical Certification Unit has responsibility for granting certifications and issuing certification cards. Its policy and procedure is developed from administrative law, Department policy, and input from the Technical Certification Advisory Board comprised of representatives from both the public and private sector.

If you have questions regarding course content or certification policy, contact:

The Technical Certification Unit, (651) 366-4201 or,
(651) 366-4247.

or write to:

Transportation Building
MS 650 (Technical Certification)
395 John Ireland Blvd.
St. Paul MN 55155-1899

TECHNICAL CERTIFICATION PROGRAM SUMMARY

There are two levels of technical certification:

Level 1: referred to as a "tester" or "field tester" level. This level is for individuals with limited responsibility who normally work under the direction of a supervisor. Often, materials testing and/or sampling is the sole duty of a Level 1 technician.

Level 2: referred to as the "inspector" level; is an advanced certification for individuals in a decision-making role, such as project supervision or oversight. Chief Inspectors, Mix Designers, etc., require Level 2 certification.

Technicians receive certification through successful completion of the required Mn/DOT Technical Certification Program curricula for that particular certification area. Successful completion consists of:

- classroom instruction,
- written examination,
- and, if required, a hands-on performance evaluation.

Only training courses approved by the Minnesota Department of Transportation are accepted for technical certification. See the section on *Certification Areas* for the specific requirements for each certification area.

Technical certification training is a cooperative effort between the Minnesota Department of Transportation and various agencies. Cooperating agencies include:

- Aggregate Ready-Mix of Minnesota
- Lake Superior College
- National Highway Institute

Requirements for a certified technician are included in the Standard Specifications for Construction Handbook, project Special Provisions and the Schedule of Materials Control for Federal Aid Projects. Refer to the contract proposal for technical certification requirements on State Projects. Certification is required for personnel on all State Aid Projects as specified by the Mn/DOT Division of State Aid. Contact Paul Stine at 651-366-3830 concerning certification on State-Aid projects.

Technical certifications expire at the end of five years. Technicians must recertify before their certification expires. Recertification is for five years. For more information, see the section on *Recertification*, page 14.

The *Certification Areas* section of this handbook lists specific requirements for each certification.

ELIGIBILITY FOR CERTIFICATION

The certification program is designed primarily for personnel already working in highway construction. Experience is highly recommended, but not required, for certification. To be eligible for certification, you must successfully complete the classroom training, written examination, and any related performance evaluation.

Seasonal workers, such as students or laborers, may obtain *provisional certification* in a specific area. Provisional certification is for individuals who need certification for only one season and who demonstrate proficiency in one or more related material testing procedures. See the *Provisional Certification* section on page 9 for more information.

Most certification classes require mathematical calculations and formulas at various proficiency levels. Students should be proficient with a scientific calculator and familiar with mathematical functions, including percentages, ratios, fractions, decimals, metrics, engineering type formulas, and basic algebra.

The Aggregate Production class is required for all aggregate testers, and is required for certification in Bituminous Plant 1, Concrete Plant 1, and Grading & Base 1.

If you completed a Mn/DOT Level 1 Bituminous Technology 2A or 2B, Bituminous QM, Concrete Plant, or Grading and Base class prior to October 1, 1995 you received credit for the Aggregate Production requirement.

CERTIFICATION OF ENGINEERS

Federal Highway Administration (FHWA) guidance clarifies who needs technical certification. All personnel who perform field or laboratory materials sampling or testing, or concrete or bituminous mix designs on federal aid, state aid and state trunk highway projects, must be certified. This includes registered, professional engineers. **This policy does not include registered professional engineers working on non-trunk highway projects.**¹

A registered engineer may exercise the test-out option for certification. The years of experience requirement for test-outs will be considered fulfilled due to the extensive training received by degreed engineers. See page 17 of this handbook for more information on testing out for certification.

Registered professional engineers may perform plant monitor duties without the plant certification, as long as they do not perform material sampling or testing.

¹ Please refer to the *State Aid Contract Administration Manual* - Chapter 5.6

CERTIFICATION CARDS

Each year the Technical Certification Unit issues a certification card to all certified technicians. These certification cards are issued in May annually and expire May 31 of the following year.

Certification cardholders are responsible for ensuring that:

- **they receive a new certification card each year, and,**
- **certification areas and dates are correct, and,**
- **all other information listed (name and employer) is correct.**

Certified personnel must present a valid certification card on demand of a Mn/DOT Independent Assurance Inspector, Mn/DOT Plant or Field Inspector, Mn/DOT Lab Supervisor, local agency inspector, or Federal Highway Administration official.

There are two types of certification cards: formal and provisional.

Formal certification cards are laminated wallet-sized cards signed by the Mn/DOT Construction Engineer and Mn/DOT Bridge Engineer. These cards are issued each year and list the expiration date for each certification area the technician holds. Formal certification is granted for five years. Prior to the end of the fifth year, one must successfully complete the associated recertification course to retain that certification. See the *Recertification* section, page 14, for more information.

Provisional certification cards are issued by the Mn/DOT District in which the individual works. Contact the District Materials Lab or Independent Assurance Inspector (IAI) to request provisional certification.

Provisional certification cards must be signed by the granting authority and expire December 31 of the calendar year of issue. For more information see the section on *Provisional Certification*, page 9.

Following is a comparison between the two types of certifications:

	Formal certification	Provisional certification
Card issued by:	Technical Certification Unit	IAI or District Lab
Certification expires:	5 years from year granted	End of calendar year issued
Can work alone:	YES	NO
Can be recertified:	YES	NO*
Level 2 certification:	YES	NO

* Some exceptions apply. See page 9 of next section, *Provisional Certification*.

PROVISIONAL CERTIFICATION

Provisional certification is limited to specific Level 1 testing procedures, such as gradations, concrete air or slump tests or sand cone density.

Provisional certification is not available for Level 2.

Provisional certifications expire December 31 of the year in which one applies.

Individuals who are provisionally certified must attend formal certification training classes during the next training season.

The advantage of provisional certification is that it allows companies or agencies to utilize new or temporary employees to perform routine field/laboratory sampling or testing normally requiring certification.

The following also apply to provisional certification:

- A provisionally-certified technician cannot be used in lieu of a certified technician, but must be under the direct supervision of a Level 1 or Level 2 individual formally certified in the same technical area. An exception is given if the provisional tester carries a communication device that provides immediate contact with their certified supervisor.
- Individuals who successfully complete the written examination and performance review for Level 1 Bituminous Plant, Concrete Plant or Grading & Base, but were unable to attend the Aggregate Production class, may obtain provisional certification.
- Full-time students working construction jobs can be provisionally certified each summer until graduation.
- An individual may be provisionally certified for one additional year with the approval of the Mn/DOT District Materials Engineer. The District Materials Engineer will consider each exception on an individual basis.

Applicants seeking a provisional certification will be required to complete a training session and performance review administered by a Mn/DOT Independent Assurance Inspector (IAI) in the District the person will be working. The appropriate Mn/DOT Independent Assurance Inspector will issue a temporary provisional certification card allowing an individual to perform one or more test procedures i.e: Air Test, Slump Test, Cylinders, Gradations, Moisture, Soil Density, Percent Crushing, Proctor, Rice, Spot Check, Extraction, Bulk Specific Gravities and Sampling.

NOTE: Any individual, who is provisionally certified in a District, and then moves or transfers to another District, must notify the Independent Assurance Inspector in the new District. See the Reference Section on pages 37-38 for a list of Mn/DOT District Independent Assurance Inspectors.

Provisional Certification Fees

There is no fee for the initial review of a field tester (all testing areas). A \$150 fee², payable to the Commissioner of Transportation, will be charged for each subsequent review when the initial review has not resulted in a provisional certification.

Contact the TCP Unit at (651) 366-4201 for more information.

CERTIFICATIONS FROM OTHER STATES

Individuals certified by another State Transportation Department may request Minnesota Department of Transportation certification. The decision to grant certification in any area is at the sole discretion of the Mn/DOT Technical Certification Specialist. Generally, Mn/DOT certification based on another state's certification is only granted in cases where the course requirements are substantially the same between the states.

Mn/DOT certification will usually require that individuals take the written examination and any performance reviews normally required. A *Test-out Application* must be completed and returned to the Technical Certification Unit to be considered for test-out. Applications are available upon request, or from the TCP website at: <http://www.dot.state.mn.us/const/tcp/pubs.html>

The application requests information concerning your levels of experience, projects worked on, and training courses completed. Consideration for certification is dependent on a completed application. Attach additional sheets if required.

Individuals who intend to become certified by the written and performance exams will receive the appropriate course materials prior to taking the examination. A fee for the course manuals/books, administration of the written examination, and a performance review if warranted, will apply for each class. See the "Test-Out for Certification" section on pages 17-18.

The Mn/DOT Technical Certification Section will also assist Mn/DOT certified individuals applying for certification in another state. Program information will be provided to other State agencies by request. Contact the Technical Certification Unit at (651) 366-4201 for information on transferring Mn/DOT certifications to another State.

² *Students working summers can be provisionally certified each summer without charge.*

“GRANDFATHER” CERTIFICATIONS

There is no provision for “grandfathered” certifications.

COURSE CALENDARS

Technical certification class registration opens October 1 every year. For the latest class and training location information, visit the Mn/DOT Technical Certification Program (TCP) web site at: <http://www.dot.state.mn.us/const/tcp/>

NOTE: If you do not have internet access, you may request copies of the above material by calling (651) 366-4202.

Course announcements include instructions directing the applicant to the proper agency for application and payment procedures.

Most technical certification courses are available on a yearly basis. Classes are scheduled in areas where there is demand enough to justify the expense of conducting a class at that location. Every effort is made to offer courses at locations around the state as a convenience to applicants.

REGISTRATION AND ENROLLMENT

All registration procedures are handled through;

Aggregate & Ready-Mix of Minnesota (ARM)
P.O. Box 14345
St Paul, MN 55114

<http://armofmn.com/training>

Phone: (888)-733-4649 or (952)-707-1250
Fax: 952-707-1251

Technical Certification Classes -

- Aggregate Production
- Bituminous Plant 1
- Bituminous Plant 1 Recertification
- Bituminous Plant 2
- Bituminous Plant 2 Recertification
- Bituminous Street
- Bituminous Street Recertification
- Bituminous Street Recertification E-learning course
- Bridge Construction 2
- Bridge Construction Recertification
- Concrete Field 1
- Concrete Field 1 with ACI option
- Concrete Field 1 Recertification for ACI option
- Concrete Field 2
- Concrete Field Recertification
- Concrete Plant 1
- Concrete Plant 1 Recertification
- Concrete Plant 2
- Concrete Plant 2 Recertification
- Grading & Base 1
- Grading & Base 2
- Grading & Base Recertification

Mn/DOT employees:

All courses are outlined in Technical Training Opportunity Course Announcements distributed to all Mn/DOT offices.

Mn/DOT personnel will need supervisor approval to enroll and will **register through your Employee Development Specialist (EDS) or Office Manager. Do Not contact ARM** directly as they cannot register Mn/DOT employees for these training sessions.

Any changes to class registration will be through ARM and in writing 7 calendar days before the course starts.

COURSES REQUIRED FOR CERTIFICATION

The chart below shows the requirements for certification:

CERTIFICATION AREA	LEVEL 1	LEVEL 2
Aggregate Production	- Aggregate Production	<i>(No Level 2 certification.)</i>
Bituminous Plant	- Aggregate Production ³ - Bituminous Plant 1 and Performance Evaluation	- Level 1 certification - Bituminous Plant 2 and Approved Mix Design
Bituminous Street	<i>(No Level 1 certification)</i>	- Bituminous Street
Bridge Construction	<i>(No Level 1 certification)</i>	- Aggregate Production ³ - Grading & Base 1 - Concrete Field 1 and 2 - Bridge Construction 2
Concrete Field	- Concrete Field 1	- Level 1 certification - Concrete Field 2
Concrete Plant	- Aggregate Production ³ - Concrete Plant 1	- Level 1 certification - Concrete Plant 2
Grading & Base	- Aggregate Production ³ - Grading & Base 1	- Level 1 certification - Grading & Base 2

Although discouraged, courses may be taken out of order. However, certification is not granted until all certification requirements are fulfilled. For more information call (651) 366-4201.

For Recertification, all prerequisites must be kept current.

Currently Aggregate Production certification does not expire. Consequently, there are no recertification classes for Aggregate Production.

³ Completion of a Level 1 Bituminous Plant, Concrete Plant or Grading & Base class prior to October 1, 1995 grants credit for the Aggregate Production prerequisite.

RECERTIFICATION

To maintain certification, technicians must successfully complete a recertification class before their certification(s) expire. Certifications expire May 31 the fifth year of certification. Certifications that have lapsed are ineligible for recertification by attending a recertification class. To regain their certification, they must attend the original certification course, or Test-Out⁴. **Currently Aggregate Production certification does not expire. Consequently, there are no recertification classes for Aggregate Production.**

For Recertification, all Prerequisites must be kept current, (see previous page.)

Successful completion of the requisite recertification course extends that certification for 5 years.

Individuals may attend a recertification course no sooner than two seasons prior, but not after that certification expires. For example, if your certification in Concrete Field Level 1 expires on 5/31/13, you may take the Concrete Field recertification course no earlier than the 2011-2012 training season, but not later than the 2012-2013 training season.

All recertification courses include a written examination. One must pass the written examination with a minimum score of seventy percent. Individuals scoring at least sixty percent are allowed one retest at no additional charge. A score of less than sixty percent, or a failing retest, requires the individual successfully complete the original certification course to regain that certification.

Some certifications, such as Bituminous Street and Grading & Base, have a single recertification class. Other certifications, such as Concrete Plant 2 and Bituminous Plant 2, have separate recertification classes for Level 1 and Level 2. **In either case, successful completion of the Level 2 exam grants recertification at both levels.**

NOTE: Should an individual fail the Level 2 recertification exam, that individual must successfully complete the Level 1 recertification course to retain Level 1 certification in that area. Contact the TCP office at 651-366-4247 for more information.

American Concrete Institute (ACI)⁵ and Prestressed/Precast Concrete Institute (PCI)⁶ recertification examinations are also available for individuals who want to maintain their certification(s) through those industry groups. (Contact Aggregate Ready-Mix of Minnesota for more information: (888) 733-4649 or (952) 707-1250)

Performance reviews are not required for recertification, except for those also recertifying for ACI Concrete Grade 1 Technician certification.

⁴ Refer to the Test-Out procedure on page 17.

⁵ ACI requires people to retake and successfully complete their Concrete Field 1 course to maintain their ACI certification. ACI certification or recertification alone does not satisfy Mn/DOT recertification requirements.

⁶ The Technical Certification Unit will arrange a proctor for Prestressed Concrete Institute's (PCI) Level 2 recertification examination only for those individuals currently certified by Mn/DOT. PCI rules will govern who is certified. Individuals must successfully complete the PCI examination to extend their certification (must have current ACI Grade I Technician certification and the Prestressed Concrete Institute Level 1 certification).

RETEST

A retest may be requested in the case of a failed course examination if the individual meets the following requirements:

1. Scored from 60 – 69 on the written exam.
2. Must have successfully completed the performance review, if required.
3. Must contact the Technical Certification Office for retest instructions.
4. Must retest prior to October 1 (the start of the new training season).

In the following three cases, the individual must successfully complete the original TCP certification course:

1. Received a score of less than 60 percent correct on any written examination.
2. Received a score of less than 70 percent correct on any test-out examination.
3. Did not successfully complete the required performance review.

There is no fee for Mn/DOT retests. A retest fee applies for ACI Concrete Field Grade 1 re-examinations. If you need to request a retest for this class, contact Aggregate and Ready Mix Association of Minnesota at (888) 733-4649 or (952) 707-1250. For all other retest requests contact the Mn/DOT Technical Certification Unit at (651) 366-4247.

REVOCAION OF CERTIFICATION

Mn/DOT TCP grants certification upon satisfactory completion and maintenance of certain conditions and may be revoked upon any breach of these conditions.

Generally, certifications may be revoked if in the opinion of the certifying authority, an individual has knowingly committed acts detrimental to the integrity of the Certification Program or transportation industry. Examples of situations that warrant revocation are:

- Deliberate falsification of field or quality control test results or records.
- Deliberate falsification of calculations, test results or materials to be used when submitting mix for verification or requesting 'Mix Design Reports.'
- Cheating on certification exams or performance evaluations.
- Submittal of false information on certification applications.
- Submitting trial mix mixture and/or calculations completed by someone other than the signatory, or knowingly supplying trial mix mixture and/or calculations for another individual's certification.

The length of revocation will be established on a case by case basis by MnDOT, but will be no less than one year. An individual may reapply for certification after the period of revocation expires.

The MN/DOT Audit Unit will take the lead in gathering facts and investigating any allegations which may require revocation of a certification.

MnDOT will notify an individual in writing of intent to revoke certification(s). The individual has 10 business days from the date of receipt of the notification to respond in writing to MnDOT and present information to support their continued certification and/or request an opportunity for a meeting to present their case. If the individual fails to respond within 10 days of receipt of the original notification of revocation letter, the revocation becomes final.

Not later than 10 business days after receiving a request for a meeting from the individual, MnDOT will schedule a meeting in which the individual can present their case. If MnDOT is not persuaded by the information provided by the individual and continues to believe that revocation of the certification is warranted, MnDOT will refer the matter to the Engineering Services Division Director for review. All information including any letter(s) of explanation from the individual will accompany the documents submitted to the Engineering Services Division Director. MnDOT will mail the decision of the Engineering Services Division Director for or against revocation of certification to the individual concerned.

TEST-OUT FOR CERTIFICATION

Individuals may apply for certification through test-out in one or more areas. A test-out presumes the applicant has a broad knowledge of the material and is proficient in that area. **Test-outs are not for the convenience of the applicant.**

For Test-outs, all prerequisites must be kept current.

To request certification through test-out, submit a Test-out Application to the address on page 2 of the form. This form is available from the TCP web site at: <http://www.dot.state.mn.us/const/tcp> Click on **Forms and Publications** on the top menu bar and click **Test-out Application** on the list of forms.

Complete the application, indicating all related training and experience. All applications must be signed by the applicant. The Technical Certification Unit will contact the applicant about the application and provide further instructions on how to proceed.

If the test-out is approved, the applicant remits the appropriate test-out fee(s) per prescribed method, and then the relevant study material and how to arrange for their written exam will be mailed to the applicant. After reviewing the material, the applicant contacts the exam proctor to arrange a time and location to complete the written examination and any related performance review. Once this process is completed the applicant will be notified by the TCP representative as to the results.

Applicants must complete the written examination and any related performance review within 1 year from the date of application or they will forfeit the test-out fees. Applicants will need to reapply and pay the test-out fee(s) if they want to pursue the test-out process again.

Test-outs fall into two categories: New certifications, and certifications that have lapsed:

New Certifications –

To gain new certifications through the ‘test-out’ provision, one must meet all of the following requirements⁷ :

Level 1

1. Currently works in construction inspection and/or materials testing.
2. Two years experience and/or provisionally certified in the particular certification area (experience may include certification in another State).
3. Submit a completed Application for Certification, and any required fees.
4. Successfully complete the written examination, applicable performance review⁸ and associated classes⁹.

⁷ Only training courses approved or taught by the TCP will be accepted for certification.

⁸ Certifications that require a performance review are Aggregate Production, Bituminous Plant 1 and 2, Concrete Field 1 Mn/DOT or ACI, Grading & Base 1.

⁹ Aggregate Production is required for certification in Level 1 Bituminous Plant, Concrete Plant and Grading and Base.

Level 2

1. Five years of recent and relevant experience, or Mn/DOT Level 1 certified in that area for past two years.
2. Submit a completed Application for Certification, and any required fees.
3. Successfully complete a written examination and any hands-on review.

Expired Certifications –

Individuals who have allowed their certification(s) to expire may request a test-out to regain their certification. **This involves successfully completing the full written examination for the original course¹⁰.**

Successful completion of the written examination will restore that certification area for another five years. A score of less than 70 percent correct will require you attend the original course to regain your certification.

There are no retests for test-outs.

To request a test-out, you must complete, sign and return a **Test-out Application**. The application requests information concerning your experience and training. It is important that the application be complete and is signed by the applicant.

Individuals whose certifications have lapsed less than one year are eligible to test-out at a reduced fee. As of October 1, 2006 the fee under this provision is the current cost of the respective recertification class. After one year, the test-out fee will be the normal test-out fee (class tuition, plus any associated lab and exam proctor fees).

Test-out Fees

Fees for the test-out examination are handled through the process explained in the letter sent from the Technical Certification Office stating approval of the test-out application. Proctor fees, if required, will be paid to the proctor that administers the examination and performance review.

Test-out applicants must complete the examination and all related performance evaluations within 365 days (1 year) from the application date. Applicants failing to complete the test-out during this time forfeit all fees, and must resubmit the application and all associated fees. Fees for test-out applications are not eligible for refund.

For more information concerning test-out fees, call (651) 366-4247

¹⁰ *Individuals whose certifications have lapsed are ineligible to take the recertification exam.*

CERTIFICATION AREA REQUIREMENTS

Normally project responsibilities fall into two categories: *Agency/Owner* and *Contractor*. The following is a definition of who comprises the two categories:

Agency/Owner: Any Mn/DOT (Agency/Owner), or County, City or Consultant personnel representing the Agency/Owner. These individuals are responsible for performing or monitoring QC/QA materials testing.

Contractor/Producer: Prime or sub-contractor personnel responsible for performing, supervising or monitoring the QC materials testing on a given project. These responsibilities are frequently different on a project. This difference is reflected in the following “Who needs certification:” criteria for each certification area.

AGGREGATE CERTIFICATION

Level 1 – Aggregate Tester

Who needs certification:

Agency/Owner: Required for certification in Bituminous Plant, Concrete Plant, and Grading & Base. Certification is required for all Mn/DOT Independent Assurance Inspectors and anyone who performs aggregate quality control and/or assurance testing.

Contractor: Required for certification in Bituminous Plant, Concrete Plant, and Grading & Base. Also required for anyone who performs aggregate quality control and/or assurance testing¹¹.

Requirements:

- Completion of the Aggregate Production course, a minimum score of seventy percent on the written exam, and successful completion of the related performance review.

Level 2

Currently there is no Level 2 certification in this area.

¹¹ *Aggregate tester certification is required for aggregate suppliers on all Mn/DOT jobs. See the Special Provisions of the project contract.*

BITUMINOUS PLANT CERTIFICATION

Level 1 - Bituminous Plant - Tester

Who needs certification:

Agency/Owner: All Bituminous Plant Inspectors/Monitors, Mn/DOT Independent Assurance Inspectors, and anyone who performs, monitors or verifies bituminous mixture quality control and assurance tests.

Contractor: Anyone performing bituminous mixture quality control testing, including, but not limited to: sampling, splitting, producing test specimens, maximum and bulk specific gravities, Tensile Strength Ratio (Lottman), spot checks, and extractions.

Requirements:

- Aggregate Production certification.
- Completion of Bituminous Plant 1 class (3 days)
- A minimum score of seventy percent on the written examination.
- Successful completion of the required performance review¹².

NOTE: Individuals have one-year from the date of the class to successfully complete the performance review. If the performance evaluation is not done within one year, one must again attend and successfully complete the course to be eligible for certification.

Bituminous Plant certification - continued on next page

¹² To successfully complete the course students must also complete a hands-on performance review. An Independent Assurance Inspector (IAI) or District Lab Supervisor conducts this evaluation. See Reference Section for Lab locations and phone numbers.

Bituminous Plant certification - continued from previous page

Level 2 - Bituminous Plant - Mix Designer¹³

Who needs certification:

Agency/Owner: All personnel who design, adjust, verify and/or approve mix designs and/or their related calculations.

Contractor: All personnel who are responsible for the design, adjustment, calculations and submittal of bituminous mix designs and/or supervise quality control testing.

Requirements:

- Level 1 certification
- Completion of the Bituminous Plant 2 class (5 days)
- Score a minimum of 70 percent correct on the written examination
- Successful completion of the required performance review¹⁴.

NOTE: Submittals must be delivered to the Mn/DOT Lab in the District they are working not later than one year from the date of the class. If the mix design is not submitted or verified within that one year, the individual will be required to re-attend and successfully complete the class again to be eligible for certification in this area.

See Reference Section for Mn/DOT District Laboratory locations and phone numbers.

¹³ On a Federal-aid or State-aid project a Level 2 Bituminous Plant Mix Designer is required if the local agency is performing mix design or mix adjustments. If Mn/DOT is doing these, the local agency is not required to have Level 2 certification.

¹⁴ To be certified at Level 2, individuals must successfully complete the written examination, and personally submit a 2360 trial mix design (mixture, related calculations and required documentation) for verification.

BITUMINOUS STREET CERTIFICATION

There are no longer Levels 1 and 2 for Bituminous Street. It is now a combined course and certification.

Who needs certification:

Agency/Owner: Anyone working on a bituminous paving project; all Mn/DOT Independent Assurance Inspectors.
Minimum one certified inspector per project, preferably one for each major work area (Chief Inspector).

Contractor: Personnel who procure and split field mixture samples during the paving process.
Minimum one certified individual per paving project, preferably one for each major work area (Paving Superintendent).

Requirements:

- Completion of the Bituminous Street class (3 days)
- A minimum score of seventy percent on the written examination.

BRIDGE CONSTRUCTION CERTIFICATION

Level 1 - Tester

There is no Level 1 Bridge Construction course. Certification at Level 2 automatically grants Level 1 certification.

Level 2 - Bridge Construction - Inspector

Who needs certification:

Agency/Owner: A Level 2 certification is required for construction of significant structures (cast-in-place concrete culverts, pile supported structures, bridges, retaining walls, etc).

Precast concrete box culverts are inspected during fabrication and a lesser level of inspection is required at the construction site.

A Level 2 certification is not needed for precast concrete box culvert construction.

All personnel acting as 'chief inspectors' on bridge construction projects must be level 2 certified, a **minimum** of one certified individual per project.

Please refer to footnote¹⁵.

Contractor: None

Requirements:

- Aggregate Production certification.
- Level 1 Grading & Base certification.
- Level 1 Concrete Field certification.
- Level 2 Concrete Field certification.
- Completion of the Bridge Construction 2 class (14 days)
- A minimum score of seventy percent on each of the three written examinations.

¹⁵ *It is not required that a local agency provide a Level 2 certified street or field inspector for each bridge, grading, bituminous, or concrete project. The Level 2 certified person may handle or be available to several projects at one time in a "chief inspector" capacity for operations relating to their areas of certification.*

CONCRETE FIELD CERTIFICATION

Level 1 - Concrete Field Tester

Who needs certification:

Agency/Owner: All personnel performing or overseeing field testing of fresh concrete. Tests may include but are not limited to percent air, slump, casting cylinders and beams, temperature, unit weight, and calibration of test equipment. This includes all Mn/DOT Independent Assurance Inspectors.

Contractor: All personnel performing field tests on fresh concrete. Tests may include but are not limited to percent air, slump, casting cylinders and beams, temperature, unit weight, calibration of test equipment, etc. (Prestressed Concrete plant personnel).

Requirements:

- Completion of the Concrete Field 1 class (2 days).
- A minimum score of seventy percent on the written examination¹⁶.
- Successful completion of the performance review.

Optional:

- American Concrete Institute (ACI) Grade 1 Concrete Field Testing Technician certification¹⁷.

¹⁶ For individuals taking the ACI examination, a minimum score of 60 percent correct is required for each section of the ACI exam, and seventy percent overall. Students choosing the option of both Mn/DOT and ACI certification must successfully complete both the ACI examination, and a Mn/DOT addendum, with an overall score of seventy percent on each of the exams.

¹⁷ Mn/DOT does not require ACI Level 1 Concrete Field certification. However, ACI Concrete Field Testing Technician - Grade I certification is offered as an option by the Aggregate and Ready Mix Association of Minnesota in conjunction with the Mn/DOT Field 1 course. ACI certification is obtained and maintained at the discretion of ACI and the certified individual. Expiration dates for ACI certification will be different from Mn/DOT certification expiration dates. It is the responsibility of the individual to be aware of their certification expiration dates.

Level 2 - Concrete Field Inspector

Who needs certification:

Agency/Owner: All personnel acting as a chief inspector on concrete projects such as paving, curb and gutter, median, sidewalk, etc. (Lead Inspector)¹⁸.

Contractor: None

Requirements:

- Level 1 Concrete Field certification.
- Successful completion of the Concrete Field 2 class (4 days).
- A minimum score of seventy percent on the written examination.

NOTE: Unlike the Level 1 Concrete Field class, American Concrete Institute (ACI) certification is not offered for Concrete Field Level 2. For Grade 2 Concrete Technician certification, contact the American Concrete Institute at: www.aci-int.org

¹⁸ *It is not required that a local agency provide a Level 2 certified Street or Field inspector for each bridge, grading, bituminous, or concrete project. The Level 2 certified person may handle or be available to several projects at one time in a "chief inspector" capacity for operations relating to their areas of certification.*

CONCRETE PLANT CERTIFICATION

Level 1 - Concrete Plant Tester

Who needs certification:

Agency/Owner: All ready-mix/central-mix concrete plant inspectors/Monitors, all Mn/DOT Independent Assurance Inspectors and anyone who performs QC/QA tests or calibrates testing equipment at a concrete plant facility.

Contractor: All personnel performing quality control testing in concrete ready-mix/central-mix plants. This may include but are not limited to: test equipment calibration, representative sampling, splitting of samples, moistures and gradations.

Requirements:

- Aggregate Production certification.
- Completion of the Concrete Plant 1 class (2 days).
- A minimum score of seventy percent on the written exam.

Level 2 - Concrete Mix Designer

Agency/Owner: All plant or paving project personnel performing, adjusting or checking mix-design calculations¹⁹.

Contractor: Anyone performing concrete mix design calculations, or makes mix design decisions and adjustments, or anyone who supervises quality control (QC) testing in a concrete ready-mix plant.

Requirements:

- Level 1 certification.
- Successful completion of the four-day Concrete Plant 2 class (4 days)
- A minimum seventy percent on Parts 1 and 2 of the exam, and successful completion of the mix design portion.

¹⁹ Level 2 - Concrete Mix designer certification, as appropriate, is required if the local agency is performing mix design or mix adjustments. If Mn/DOT is doing these, the local agency is not required to have a Level 2 certified technician.

GRADING AND BASE CERTIFICATION

Level 1 - Grading and Base Tester

Who needs certification:

Agency/Owner: Personnel performing or overseeing laboratory or field tests on soils/grading & base materials. Test procedures may include but are not limited to representative sampling, splitting samples, gradations, moisture-density (proctor), in-place field density or calibrates testing equipment; Mn/DOT Independent Assurance Inspectors.

Contractor: None

Requirements:

- Aggregate Production certification.
- Completion of the Grading and Base 1 class (3 days).
- A minimum score of seventy percent on the written examination, and successful completion of the related performance evaluation.

Level 2 - Grading and Base Inspector

Who needs certification:

Agency/Owner: All personnel acting as chief inspectors on grading and base projects²⁰.

Contractor: None

Requirements:

- Level 1 certification.
- Completion of the Grading and Base 2 class (3 days).
- A minimum score of seventy percent on the written examination.

²⁰ *It is not required that a local agency provide a Level 2 certified street or field inspector for each bridge, grading, bituminous, or concrete project. The Level 2 certified person may handle or be available to several projects at one time in a "chief inspector" capacity for operations relating to their areas of certification.*

All these requirements are per Specification and the contact information is listed below:

PRESTRESSED CONCRETE CERTIFICATION

Prestressed Concrete Certification is required on all Mn/DOT and Federal-Aid jobs. See the Special Provisions and Section 2405.3, Standard Specifications for Construction, latest edition (currently 2005).
For further information contact Steve Grover, 651-366-5540.

SIGNAL & LIGHTING CERTIFICATION

For further information contact Ben Osemenam, 651-234-7055.

EROSION AND SEDIMENT CONTROL

The following courses are administered by the University of Minnesota under the auspices of the Mn/DOT Office of Environmental Services.

For information concerning erosion and sediment control certification requirements, contact the Office of Environmental Services at 651- 366-3600.

Instructor: John Chapman 612- 626-4857

Instructor: Brett Troyer Mn/DOT 651- 366-3629

For information on Erosion Control class registration and availability, contact the University of Minnesota, Bio-products and Bio-systems Engineering Department at (612) 625-9733.

BRIDGE SAFETY INSPECTION

For further information contact:

Norm Plasch - 651-366-3301

Joe Nietfeld - 651-366-4477

Level 1 - Bridge Safety Inspector Assistant²¹

Who needs certification:

Agency/Owner: All personnel participating in inspection of in-service bridges.

Contractor: None

Requirement:

²¹ *The Mn/DOT Office of Bridges and Structures administers the Bridge Safety Certification program. For information on Bridge Safety classes and their related certifications you can contact the Mn/DOT Bridge Office at (651) 366-4576.*

- Completion of the Bridge Safety 1 class
- A minimum score of seventy percent on the written exam.

Level 2 - Bridge Safety Inspector

Who needs certification:

Agency/Owner: All lead personnel performing in-service bridge inspections.

Contractor: None

Requirements:

- Certification as a Level 1 Bridge Safety Inspector Assistant.
- Completion of the Bridge Safety 2 class.
- A minimum score of seventy percent on the written exam.
- Five years recent experience in bridge safety inspection assignments in a responsible capacity.
- Successful performance evaluation as observed by a designated Mn/DOT bridge safety evaluator.

See Minnesota Rule 8810.9300 for qualification requirements for Bridge Safety Inspectors.

COURSE DESCRIPTIONS

Aggregate Production (24 hrs.)

This is a three day introductory course taught both in the classroom and in the lab. It covers aspects of aggregate production and quality control testing. Subjects include: prospecting for aggregate, crushing and stockpiling, aggregate blending, process control, and effects of non-complying aggregate on construction. Test topics include aggregate sampling, splitting, gradations, aggregate specific gravity, moisture, spall identification, percent crushing, and other aggregate durability and quality tests. This course includes a hands-on performance review. This is done during the lab.

There is currently no level 2 or recertification course for aggregate production.

Bituminous Street (24 hrs.)

This course is a three day course in bituminous technology. It is taught entirely in the classroom. Topics include: asphalt properties and types, production and testing, plant types and operation, aggregates used in production of hot-mix design concepts, paving and compaction specifications, inspector and contractor roles, the Mn/DOT QM Spec. and Certified Plant requirements.

Bituminous Plant 1 (24 hrs.)

This course is specifically designed for individuals working in the quality control testing area of a bituminous hot-mix plant. It is a three day course with time spent in the classroom and in the lab. Subjects to be covered are the following test procedures - maximum specific gravity (Rice test), air voids and bulk specific gravity as determined from Marshall specimens, Demo and explanation of Gyrotory specimens and compacted pavement cores, extraction and gradation of salvaged- asphaltic aggregate (RAP), and the Tensile Strength Ratio (TSR-Lottman) test. This course requires a hands-on performance review to obtain full certification. This must be completed within a year of the date you pass your exam.

Bituminous Plant 2 (40 hrs.)

This course is specifically for Bituminous Mix Designers, Plant Superintendents, and both agency and private testing Lab Supervisors. It covers Bituminous Mix Design requirements and working ranges specified by Mn/DOT specifications. It also covers subjects such as blending aggregates and recycled mixture design. There will be a day of lab work as well as 4 days in the classroom. This course prepares the student for doing Mn/DOT Trial Mix Design submittals. To obtain certification, this course requires you submit, and receive an approval for, a 2360 mix design. This must be completed within a year of the last day of class.

Bridge Construction 1

There is no Bridge Construction 1 course.

Bridge Construction 2 (112 hrs.)

This is an advanced three week course designed for personnel acting as Chief Inspector on bridge projects. Taught in the classroom, it is an in-depth look at bridge construction inspection. Students receive instruction in bridge staking, excavation and embankment, foundations, steel reinforcement, substructures, structural steel, forms and false-work, pre-stressed beams, deck expansion joints, superstructures, deck drainage, bridge utilities, deck overlays, timber bridges, special structures, slope protection, documentation, approach panels, reconstruction and widening, and safety practices. This course is recommended for those involved in any type of structural construction.

Concrete Field 1 – American Concrete Institute (ACI) (16 hrs.)

This is a two day introductory course in concrete technology for personnel who sample, test and/or inspect concrete in the field. The course details the principles of concrete quality, with an emphasis on field tests including slump, temperature, air entrainment, unit weight, and casting cylinders by incorporating the American Concrete Institute's (ACI) Concrete Field Technician - Grade 1 course. Successful completion of this course grants certification through both ACI and the Mn/DOT program. The first day is all classroom instruction with a second day to review that material, complete a written *closed-book* examination and hands-on performance review.

Concrete Field 1 (16 hrs.)

This is a two-day introductory course in concrete technology for personnel who will be testing and/or inspecting fresh concrete. It is focused on Mn/DOT specifications and testing procedures. This course details the principles of concrete quality with an emphasis on Mn/DOT's field testing procedures including sampling, slump, temperature, air entrainment, unit weight, and casting cylinders and beams. The first day is all classroom instruction with a second day to review that material, complete a written *closed-book* examination, and hands-on performance review. As a courtesy, Mn/DOT has arranged the option of also receiving American Concrete Institute (ACI) Concrete Field Grade 1 certification for an additional fee. Though ACI certification is not required by Mn/DOT, it may be required by other agencies. Contact Aggregate and Ready Mix Association of Minnesota for more information.

Concrete Field 2 (32 hrs.)

This is a four-day advanced course for experienced personnel acting as Chief Inspectors on concrete projects. It is taught entirely in the classroom. Subjects include materials technology and construction techniques required by Mn/DOT specifications, concrete paving, joint reconstruction, forming, curing, and material properties. This course is a prerequisite for the Bridge Construction 2 course. Unlike the Concrete Field 1, this course does not result in ACI certification.

Concrete Plant 1 (16 hrs.)

This two-day class is for contractor personnel performing quality control tests in ready-mix/central-mix plants and agency plant inspectors. Instruction covers certified plant requirements, composite gradations, and ready-mix plant operation. The course is taught in the classroom.

Concrete Plant 2 (32 hrs.)

This four-day course is for plant managers, all concrete mix designers and quality control supervisors who work in concrete producing plants that require Level 2 certification under Mn/DOT specifications for Certified Ready-Mix/Central-Mix Plants. It relates specific performance requirements for concrete to the mix designs and production controls necessary to produce specific mixes. Subjects include concrete mix design concepts, material and mix terms, mix types, water requirements, design data and procedures. The course is taught entirely in the classroom. Only those who perform or check concrete mix designs, or supervise the quality control of concrete ready-mix production should attend this class. You must calculate a mix design as part of the written exam.

Grading and Base 1 (24 hrs.)

This three-day course is required for anyone performing inspection or testing on grading projects. The course covers soils identification, moisture-density test (proctor), field moisture and density determinations, and Dynamic Cone Penetrometer test procedure. The course includes both classroom lectures and hands-on training in a laboratory.

Grading and Base 2 (24hrs.)

Grading and Base 2 is a required advanced course for personnel acting as lead inspectors on grading projects. This course discusses the inspector's roles and responsibilities, subgrade soils and soils identification, excavation and embankment construction, base construction, turf establishment, geosynthetic applications and compliance with labor laws. The course is covered entirely in the classroom and requires successful completion of a written exam

RECERTIFICATION CLASSES

Recertification classes vary in scope depending on the certification area. Some areas have a single class that recertifies individuals for both levels. These are:

- **Bituminous Street Recertification -**
 - o In addition to the instructor-led classroom sessions, there is an option in the 2011-2012 training season to take this course online. For more information go to the Technical Certification website:
<http://www.dot.state.mn.us/const/tcp/>
- **Concrete Field Recertification -**
 - o There is a new 1 day Concrete Field 1 ACI Recertification class for those that are recertifying for ACI only. The cost is \$325.
- **Grading & Base Recertification**
- **Bridge Construction Recertification**

The other areas have a recertification class for each level. However, a Level 2 certified individual need only take the Level 2 class to recertify for both levels.

Be aware that failure of a Level 2 Recertification class will result in the expiration of both certification levels unless one successfully complete the level 1 recertification class.

REFERENCE SECTION

Course Instructors

Bituminous Plant

Instructors: Dave Clauson, Stephan Rolf, Gary Kaelke, Sandy Roggenkamp
c/o Lake Superior College
2101 Trinity Road
Duluth, MN 55811
(218) 733-5918

Bituminous Street

Various instructors
c/o Lake Superior College
2101 Trinity Road
Duluth, MN 55811
(218) 733-5918

Concrete and Aggregate Production

Instructors: Dr. Ken Hover, P.E., Dan Frentress, P.E., Ann Johnson, P.E.,
Maria Masten, P.E., Wendy Garr, Tom Hunt, Doug Schwartz, P.E.
Bob Paine, PE and Gary Orlich. PE
c/o Aggregate & Ready Mix of Minnesota
674 Transfer Road
St Paul, MN 55114
(888) 733-4649, or (952) 707-1250

Bridge Construction

Instructors: Robert Kleinschmidt, Ken Johnson
c/o Lake Superior College
2101 Trinity Road
Duluth, MN 55811
(218) 733-5918

Grading And Base

Instructors: Dan Hayne, Mike Rief, Tom Hunt, Sandy Roggenkamp
c/o Lake Superior College
2101 Trinity Road
Duluth, MN 55811
(218) 733-5918

COOPERATING AGENCIES

Lake Superior College (LSC)

Customized Training Center

Attn: Fred Lyon

2101 Trinity Road

Duluth MN 55811

(218) 733-5918

www.lsc.edu

Aggregate & Ready Mix Association of Minnesota (ARM)

674 Transfer Road

St Paul, MN 55114

(888) 733-4649, or (952) 707-1250

www.armofmn.com

Mn/DOT DISTRICT EXAM PROCTORS

District 1 - Duluth

Denise Anderson - Independent Assurance Inspector (218) 725-2737

District 2 – Bemidji

Tim Donaghue - Lab Supervisor (218) 755-6546

Jeff Long - Bituminous Specialist (218) 755-6544

Ron Madson - Independent Assurance Inspector (218) 755-6545

District 3 – Baxter/St. Cloud

Larry Huseth- Lab Supervisor (218) 828-5755

John Savaloja - Independent Assurance Inspector, Baxter 3A (218) 828-5753

Teresa Mertens - Independent Assurance Inspector, St. Cloud 3B (320) 223-6555

District 4 - Detroit Lakes

Brad Hanson - Materials Specialist (218) 846-3616

David Brunner - Independent Assurance Inspector (218) 846-3613

Sandy Kay Wollschlager - Materials Specialist, Morris 4B (320)-589-7300

District 6 - Rochester

Ken DeCramer - Materials Specialist (507) 286-7580

Brandon Weick - Independent Assurance Inspector (507) 286-7584

District 7 – Mankato

Mark Schoeb – Lab Supervisor (507) 304-6188

Mitch Jordahl - Independent Assurance Inspector (507) 304-6187

Brian Lueck - Soils Crew Chief/Independent Assurance Inspector (507) 304-6188

District 8 - Willmar

Jay Jorgenson - Materials Specialist (320) 214-6345

Jon Vlaminck - Independent Assurance Inspector (320) 214-6348

Mn/DOT METRO EXAM PROCTORS

Concrete Office - Materials and Research Lab, Maplewood

Maria Masten - Assistant Concrete Engineer (651) 366-5572

Wendy Garr - Concrete Engineering Specialist (651) 366-5423

Bituminous Office - Materials and Research Lab, Maplewood

Dave Linell - Bituminous Mix Design/Recommendation Specialist (651) 366-5459

Grading and Base Office - Materials and Research Lab, Maplewood

Cary Efta - Grading & Base Specialist (651) 366-5421

Bituminous Trial Mix - Materials and Research Lab, Maplewood

Ray Betts - Bituminous Trial Mix Laboratory Technician (651) 366-5469

Lynnette Nadeau - Bituminous Trial Mix Laboratory Technician (651) 366-5468

Aggregates - Materials and Research Lab, Maplewood

Dave Baker - Aggregate Laboratory Supervisor (651) 366-5414

Metro Inspection – Water’s Edge Building, Roseville

Paul Methven – Metro Inspections Supervisor (651) 234-7360

Mike Evans – Metro Lab Supervisor, Maplewood (651) 366-5409

Tim Sinclair - Pavement Management Specialist /IA Supervisor (651) 234-7354

Metro IA Inspectors–

– Independent Assurance Inspector **Office:** (651) 234 -7356

Cell: (651) 775 -1042

Greg Bohmert – Independent Assurance Inspector **Office:** (651) 234 -7356

Cell: (651) 775 -1005

Richard Gastecki – Independent Assurance Inspector **Office:** (651) 234 - 7356

Cell: (651) 775 - 0997

Steve Reinardy – Independent Assurance Inspector **Office:** (651) 234 - 7356

Cell: (651) 775 - 1581

Mn/DOT Office of Construction and Innovative Contracting, C. O. – St. Paul

John Micheau - Technical Certification Specialist **Office:** (651) 366 - 4201

Cell: (651) 200 - 5412

TECHNICAL CERTIFICATION ADVISORY COMMITTEE

Technical Certification Program policy is coordinated through the Technical Certification Advisory Committee, a cooperating Agency and Industry group composed of representatives active in the field of highway construction. The group consists of a number of private and governmental officials.

Following are members of the Technical Certification Advisory Committee as of Aug. 3, 2011

Name	Organization
John Micheau	Technical Certification Supervisor
Kevin Larson P. E.	Brooklyn Park, City Representative
Fred Corrigan P.E.	Aggregate and Ready Mix, Industry Representative
Tim Sinclair	Mn/DOT, IAI Representative
Dave Clauson	Braun Intertec, Consultant Representative
Maria Masten, P.E.	Mn/DOT, Concrete Engineer
Fred Lyon	Lake Superior College, Academic Representative
Tom Ravn, P.E.	Mn/DOT, State Construction Engineer
John Garrity, P.E.	Mn/DOT, Bituminous Engineer
Matt Zeller, P.E.	Concrete Pavers Assoc. MN, Industry Representative
Paul Methven	Mn/DOT, Metro Inspections
Mitch Anderson, P.E.	Stearns County, MCEA Representative
Joe MacPherson, P. E.	Mn/DOT, State Aid Division
Rich Wolters, P.E.	MN Asphalt Pavers Association, Industry Representative
Materials Engineer Representative	Current MEO Representative
Terry Beaudry	Mn/DOT, Grading & Base Engineer
Tim Worke	Associated General Contractors, Industry Representative
Tom Krier, P.E.	Mn/DOT, Metro District Representative, Metro East
Mike Rief, PE	Technical Certification Instructor Representative

