

# NICET Civil Engineering Technology Transportation

## Highway Materials

This certification program is for highway engineering technicians involved in laboratory and field testing of highway materials such as aggregates, asphalts, concrete, soils, paints, and metals. This program addresses knowledge of techniques and equipment; recordkeeping and reporting procedures pertaining to materials and quality control; and supervisory techniques.



Highway Materials comprises four levels of certification. Level I is designed for trainees and entry-level technicians who perform limited job tasks under frequent supervision, Level II is for technicians who perform routine tasks under general daily supervision, Level III is for intermediate-level technicians who, under little or no daily supervision, work with standards, plans, specifications, and instructions, and Level IV is for independent, senior-level technicians whose work includes supervising others. Certification at Levels II, III, and IV does not require prior certification at the lower level, but it does require meeting the certification requirements of the lower levels.

### Requirements for Certification in Highway Materials

NICET has established the following criteria for certification in Highway Materials: sufficient appropriate work experience, successful performance on a written exam based on job tasks, and supervisor verification of job task competency. A personal recommendation is required at Levels III and IV. This page describes each of the certification criteria and features a requirements chart for each Level of certification. [Click here](#) to skip directly to the chart.

- **Work History**

On your application or the [Work History form](#), you must provide NICET with a detailed description of your responsibilities and job tasks for each position you've held. Carefully read the instructions with the work history form for limitations on acceptable work experience. Your work experience for higher levels must show progressively greater responsibility and technical competence. A two-year or four-year degree in a relevant ABET/TAC-accredited engineering technology program will be accepted as equivalent to 18 months of work experience. (Credit will NOT be awarded for an engineering degree.) To receive credit for a degree, complete the [Education Credit Addendum](#).

- **Written Exam on Highway Materials Work Elements**

In designing this program, a committee of technical experts examined the role of engineering technicians in Highway Materials and grouped their typical duties and job tasks into modules called work elements. The Institute uses work element classifications to set examination requirements and evaluate applicants' job-related knowledge. A listing of these work elements and their descriptions can be found in the Highway Materials Program Detail Manual. On your application, you will select those work elements you wish to include on your exam. You will meet an exam requirement by passing the listed number of elements in each category under your desired certification level (see below).

The Highway Materials work elements have been assigned to four progressively more demanding levels of certification. Level I Work Elements cover background knowledge and entry-level job skills typically acquired by students and trainees with at least a few weeks experience in the technical area. Level II Work Elements cover more advanced knowledge and job skills that technicians demonstrate proficiently in the first two years of employment. Level III work elements cover advanced skills based on previous mastery of various Level II work elements. Level IV work elements cover complex technical and/or supervisory situations requiring analytical abilities and previous mastery of the skills covered in Level III work elements. By your tenth year of employment in this technical area, you should be proficient in most Level IV work elements.

The Institute classifies work elements in three types: general, special, and core. General Work Elements are those whose tasks are performed regularly by all technicians in the specialty area. Special Work Elements, however, may be more specific to certain regional areas or specialty areas within the field/subfield. Core work elements are General Work Element tasks that must be mastered before a technician can build on his or her knowledge and advance towards NICET's upper levels of certification.

- **Supervisor Verification of Job Task Competency**  
On your application or on the [Work Element Verification form](#), you must submit your supervisor's verification that you have repeatedly and competently performed the tasks described in the Highway Materials Work Element descriptions. By initialing a work element, your verifier attests that he or she has witnessed you perform that work element's tasks repeatedly and competently. All passed elements used to meet an exam requirement must be verified.
- **Personal Recommendation (required for certification at Levels III and IV)**  
Submit a [Technician Personal Recommendation form](#) completed on your behalf by a qualified industry member who is familiar with your technical capabilities and professional character. The form can be completed by NICET Level IV technicians, PE's, and graduates of a related

4-year degree program. A person who serves as your verifier can NOT also be your recommender. This form expires one year after it is signed. If your recommendation has expired, you must submit a new one before NICET can award you a Level III or Level IV certificate.

- **Certification Requirements for Highway Materials**

The available work elements, major responsibilities, tasks, knowledge, and skills associated with each level of certification can be found in the [Highway Materials Program Detail Manual](#).

Summaries of requirements by level are available by [clicking here](#).

When selecting work elements for your examination, review the examination requirements chart and the work element listing in your program detail manual. Whenever possible, try to choose the work elements whose descriptions most closely resemble the work you regularly perform. You might want to choose a few extra work elements for each category to increase your chances of meeting the requirement. If you pass more work elements than necessary, you may be able to apply them to the next certification level's exam requirement; then, when you're ready to test for the next level, you'll have a head start. You may test up to 34 work elements per exam sitting.

## Application Forms

<a href="#">Application Package (Parts I through IV)</a>	All the forms you need to apply, complete with instructions. For certification at Level III and IV, a <a href="#">Personal Recommendation (Part V)</a> will also be required.
<a href="#">General Instructions</a>	General overview of the application process
<a href="#">Work Element Test Application (Parts I and IV)</a>	For those who want to test, but are not presently seeking certification
<a href="#">Verification Form (Parts III and IV)</a>	For performance verification of previously tested (or applied for) work elements
<a href="#">Personal Recommendation Form (Part V)</a>	The recommender rates your capabilities and professional character
<a href="#">Major Project Write-Up</a>	For Level IV applicants; guidelines for setting up your write-up.

## How to Schedule a Test

[Click here](#) to access the database of Work Element Exam Centers and Test Dates.

After processing your application, NICET will send you a confirmation notice with directions to your test center and information about what to bring with you. Two to three weeks after the exam, you will receive your score report in the mail.

After passing the exam requirement, if the evaluation process turns up shortcomings against the other certification requirements, NICET will mail you a CDL with further instructions.

Certification is issued once all requirements are met.

The Institute will notify you of its decision within 90\* days of your test date.

\*Complicated cases may take significantly longer.

## Fees

<b>Work Element Application</b>	\$270
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This fee applies to any exam sitting at a scheduled NICET test session, regardless of the length or type of exam. It is a flat fee because the process to generate, administer, and score an exam is not affected by the length of the exam. The only exception is the Special Recertification Exam; this is a per exam fee even when two exams are scheduled for the same day.

Exams administered at times and places different from scheduled test sessions (see Policy #18) will require an additional fee to cover the additional costs.

Under specific conditions, the Institute will offer a discounted exam fee to educational institutions or government agencies who wish to sponsor mass testing. Contact the Institute at 1-888-476-4238, ext. 106 for further information.

For more information on fees, please [click here](#).

## What is the Test Like?

The exam will test your knowledge of typical duties and job tasks. The web pages for each program offer descriptions of the areas that will be covered on the exam. The questions, all multiple-choice, are designed to be answered with little difficulty by those who regularly perform the tasks within those covered areas.

NICET test questions are submitted and reviewed by volunteer committees of technical experts. Pilot tests are used to check performance before opening an exam to the public.

### **For all work element and general knowledge testing programs:**

Your test will be custom-made according to the work elements you list on your application. The work element descriptions in the program detail manual will give you a good idea of what material will be tested in each work element. The examination is open-book; you may bring standards, [references](#), and [calculators](#) (computers are not allowed). Your time limit will be based on the specific questions on your exam, and will appear in your confirmation letter as well as on the first page of your exam.

At the test center, you will receive a test booklet, a bubble-sheet answer form, and scratch paper. All test questions are multiple-choice and have a single correct answer.

### **Highway Materials Work Element Credit for ACI Certification**

You'll have a head start in meeting NICET's examination requirement for the Transportation Engineering Technology subfield of Highway Materials if you have one or more ACI certifications. [Click here](#) for more information.

### **Requirements Applicable to Multiple Certifications**

Are you planning to pursue another certification? If you've tested with NICET before, you may have already earned test credit in that new area. A Crossover Listing shows those work elements in the "new" subfield for which credit will be granted as soon as you begin testing in that subfield if you have previously passed certain work elements in the "old" subfield.

The crossover listings for Highway Materials are available below. This lists the crossover work element numbers for the first subfield and their corresponding numbers in the second subfield. Check your score reports to find out which of these work elements you have passed.

- [Asphalt/Highway Materials](#)
- [Concrete/Highway Materials](#)
- [Soils/Highway Materials](#)
- [Highway Construction/Highway Materials](#)

### **Highway Materials Test Development and Supporting Organizations**

In 1974, the Institute partnered with the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration to develop "a nationally-applicable, individualized, job-competency-based, nondiscriminatory certification system that could be interfaced with education/training resources and a variety of personnel systems."

With funding from the Federal Highway Administration and the technical guidance of an AASHTO task force, the Institute designed the new program using input from several State Departments of Transportation, trade associations, engineering firms, educational institutions, engineering technicians, and federal, county, and city agencies. Over 1000 individuals contributed to the development of NICET's Transportation Engineering Technology certification programs, which at the time included Highway Construction, Highway Design, Highway Materials, Highway Traffic Operations, Highway Surveys, and Highway Maintenance.

Through a practice analysis, the volunteers identified engineering technicians' job tasks and responsibilities and categorized them into work elements. Then, volunteers submitted and reviewed examination questions for each of the work elements.

In 1976, after critically reviewing the program's certification criteria, AASHTO endorsed the program for use on a voluntary basis by State Departments of Highways and Transportation. In 1978, the Institute completed a pilot test of the program in three states with different personnel systems, geographic characteristics, and demographic attributes. The program became operational in 1979. Technical guidance is currently provided by highway materials technicians, supervisors, and subject matter experts from a variety of stakeholder groups, including state highway departments, county and city agencies, FHWA, private consultant firms, testing laboratories, and contractors.