

**Level II Content Outline****Associate Engineering Technician**

*The candidate for NICET certification at Level II in Transportation Construction Inspection should have the knowledge and experience to: inspect construction of basic earthwork, pavement, structural components, and incidentals; verify simple field testing for material properties; interpret documented characteristics of objects and materials; recognize unsafe construction procedures and site conditions; inspect erosion control and protection of environmental features and utilities; identify observed, measured, or tested properties and provide appropriate notifications and reports.*

**2.1 Earthwork**

(Questions related to these tasks make up 10-20% of the exam.)

- 2.1.1 Visually identify soil and aggregate types and their properties. 1, 3, 5
- 2.1.2 Identify and differentiate between limits of disturbance, rights-of-way, and easements. 4
- 2.1.3 Inspect clearing and grubbing. 3, 4, 6
- 2.1.4 Inspect temporary erosion and sediment controls and storm water management components. 6
- 2.1.5 Recognize materials testing, certification, and acceptance requirements. 1, 3, 5, 6
- 2.1.6 Monitor field procedures for soils compaction testing, and determine the acceptability of the results. 6, 11
- 2.1.7 Inspect placement and grading of embankments, including compaction and finish tolerances. 5, 6, 10
- 2.1.8 Inspect placement and grading of subgrades, undercuts, and aggregate subbase and base courses, including compaction and finish tolerances. 6, 11
- 2.1.9 Calculate excavation and embankment quantities. 4

**2.2 Asphalt Pavement Construction**

(Questions related to these tasks make up 10-20% of the exam.)

- 2.2.1 Inspect existing surface preparation as required. 4, 6, 7
- 2.2.2 Inspect the application of tack coats. 6
- 2.2.3 Conduct preplacement inspection, including grade control, equipment pre-checks, and paving plan review. 4, 6, 7
- 2.2.4 Visually identify asphalt mixes and properties. 7
- 2.2.5 Identify the requirements for materials sampling for testing and verify conformance. 3, 6, 7
- 2.2.6 Inspect delivery, placement, compaction, and finishing of asphalt. 6, 7, 8
- 2.2.7 Calculate and interpret yield. 7

**2.3 Concrete Pavement Construction**

(Questions related to these tasks make up 10-20% of the exam.)

- 2.3.1 Inspect surface preparation, forms, reinforcing steel, and load-transfer assemblies for pavements. 2
- 2.3.2 Verify that concrete for pavement meets testing and certification requirements. 6
- 2.3.3 Verify that correct procedures are followed for sampling fresh concrete; measuring temperature; determining slump, air content, unit weight, and yield; and making and curing test specimens. 1, 3
- 2.3.4 Inspect delivery, placement, and consolidation of concrete for pavements. 4
- 2.3.5 Inspect finishing and surface tolerances. 2
- 2.3.6 Inspect pavement curing, and saw-cutting and sealing of joints. 2



## **2.4 Concrete Structure Construction**

(Questions related to these tasks make up 10-20% of the exam.)

- 2.4.1 Inspect delivered precast box culverts, box beams, and other precast items. 3, 6
- 2.4.2 Inspect bedding and installation of footings and basic driven pile. 6
- 2.4.3 Inspect forms and reinforcing steel for structures, and calculate pay weight. 6, 10
- 2.4.4 Inspect delivery and method of placement of concrete for structures. 2, 3
- 2.4.5 Inspect cast-in-place structural components. 2, 6
- 2.4.6 Verify that concrete for structures meets testing and certification requirements. 2, 3, 6

## **2.5 Drainage**

(Questions related to these tasks make up 8-12% of the exam.)

- 2.5.1 Identify drainage system components. 6
- 2.5.2 Inspect excavation for drainage. 6, 10
- 2.5.3 Inspect bedding and backfilling. 6
- 2.5.4 Inspect installation of drainage components. 3, 6

## **2.6 Utilities and Incidental Construction**

(Questions related to these tasks make up 10-15% of the exam.)

- 2.6.1 Identify utility facilities affected by construction. 10
- 2.6.2 Inspect signage, striping, and message marking. 9
- 2.6.3 Inspect guardrails, safety systems, and fencing. 1, 6, 9
- 2.6.4 Inspect basic foundations for lighting, traffic signals, ground-mounted signs, and sound walls. 9
- 2.6.5 Inspect underground electrical conduit. 6
- 2.6.6 Inspect sidewalks, curbs and gutters, curb ramps, medians/median barriers, and driveways. 6
- 2.6.7 Inspect landscaping and environmental mitigation. 4

## **2.7 Site Layout and Controls**

(Questions related to these tasks make up 4-8% of the exam.)

- 2.7.1 Use survey notes and data to verify elevations. 6
- 2.7.2 Inspect placement of work zone traffic controls, including lane shifts, closures, detours, and construction access points and routes. 6, 9

## **2.8 Responsibilities and Documentation**

(Questions related to these tasks make up 5-12% of the exam.)

- 2.8.1 Generate and maintain project documentation related to work within the inspector's scope of responsibility. 4, 6
- 2.8.2 Identify project roles, hierarchies, and responsibilities, including the authority of the inspector. 6, 10
- 2.8.3 Identify project activities from a project schedule. 4
- 2.8.4 Identify and inspect required work-site postings. 4, 10

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footnote number is linked to a reference on the Selected General References listing