

IRF Construction Inspection Training program

Introduction:

Construction inspectors review the construction of drainage systems, homes, buildings and highways to ensure that all building, health and safety codes are followed. This program is for use in training of road construction inspectors. It focuses on the inspection of asphalt concrete paving, Portland cement concrete paving, and construction of bridges and other structures. Field sampling and testing for asphalt concrete and cement concrete are also included. This program provides training in enforcing building codes, monitoring zoning regulations and ensuring the structural integrity of buildings, bridges and other construction projects. In addition to this wide array of inspection techniques, the candidates will receive foundational education in report writing, field testing and other skills necessary for a career in construction inspection. This course conforms to the International Road Federation (IRF) standards.

Who Should Attend?

Construction Engineers, Senior Construction Engineers, Construction Supervisors, Construction General Supervisors, Construction Project Managers, Engineering Technologists, Supervision Engineer, Inspection Engineers, Civil Inspectors.

Course Objectives:

By the end of this course delegates will be able to:

- Learn about asphalt concrete plant inspection techniques
- Know the inspection for equipment and materials used for asphalt concrete paving
- Understand the inspection procedures for the paving operation
- Know the major inspection operations
- Learn the inspection of incidental concrete structures
- Follow IRF health and safety policies and procedures

Course Outline:

Asphalt Concrete Plant Inspection

- Asphalt mixture
- Basic mixing process
- Basic operation of asphalt batch plants
- Basic operation of dryer drum plants
- Material controls for aggregates, admixtures, and asphalt
- Inspection and controls for batch plants
- Inspection and controls for dryer drum plants · Control procedures for asphalt mix

Asphalt Concrete Paving Inspection

- The inspection for equipment and materials used for asphalt concrete paving
- Preparation for paving including alignment control, grade control, and weather limits
- Inspection procedures for the paving operation, for the delivery of the mix at the job site and for the construction of transverse and longitudinal joints
- Inspection procedures for the compaction of the asphalt mix in each rolling phase

Field Sampling and Testing for Bituminous Construction

- Bituminous mixtures; procedures for sampling of aggregates, asphalt, and bituminous mixtures
- Field testing methods for aggregates, including gradation test
- Sand Equivalent Test
- Crushed Faces Test
- Flakiness Index Test
- Field testing methods for bituminous mixtures including Particle Coating Test
- Extraction Test
- Moisture Content Test
- Asphalt Retention Test
- Rice Test (for determination of the maximum specific gravity of uncompacted mixtures)
- Marshall Test

Chip Seal, Prime, Flush and Tack Coat Inspection

- Procedures for these surface treatments including inspection and controls for materials, equipment, and construction

Inspecting Pavement Recycling

- Inspection procedures for pavement preparation
- Hot-mix plant recycling is covered, including equipment and plant used for the operation
- Pavement removal
- Mixing of recycled and new materials and paving

Concrete Paving Inspection

- Inspection of the alignment and grade control, the sub-grade preparation, the setting of forms, the preparation on concrete, the lean concrete base
- Inspecting the placement and curing of concrete and paving with a slip form paver
- Construction inspection of joints, testing and accepting the finish pavement

Major Structures Inspection

- Bridge components
- Inspection procedures for bridge foundation including pile and drift shaft piling
- Inspection of piers and abutments
- Inspection procedures for bridge superstructures including steel girders
- Pre-cast concrete I-beams
- Cast-in-place box girders
- Inspection of bridge deck construction

Incidental Concrete Structures Inspection

- Introduction to incidental concrete structures
- The inspection and controls for the plan, the excavation, forms, reinforcing bars
- Placement of concrete including slipform concrete placement and pre-cast concrete
- Construction inspection for joints, curing, removing the forms
- Finishing the surface including Class 1 and Class 2 surfacing, and backfilling

Field Sampling and Testing for Concrete Construction

- Introduction and the description of concrete components
- Concrete sampling in the field
- Test methods for Slump Test
- Air Content Test
- Comprehensive Strength Test