# 150/5370-10G Versus 150/5370-10H
# Contractor Quality Control Program

| | AC 150/5370-10G | AC 150/5370-10H |
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| 1 | Part 1 of General Provisions | Part 2 of General Construction Items |
| 2 | Section 100 | Item C-100 |
| 3 | Quality Control Program | Contractor Quality Control Program (CQCP) |
| 4 | **100-01 General.** When the specification requires a Contractor Quality Control Program, the Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose. | **100-1 General.** Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose. |
| 5 | The intent of this section is to enable the Contractor to establish a necessary level of control that will:<br>**a.** Adequately provide for the production of acceptable quality materials.<br>**b.** Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.<br>**c.** Allow the Contractor as much latitude as possible to develop his or her own standard of control. | The Contractor shall establish a CQCP that will:<br>**a.** Provide qualified personnel to develop and implement the CQCP.<br>**b.** Provide for the production of acceptable quality materials.<br>**c.** Provide sufficient information to assure that the specification requirements can be met.<br>**d.** Document the CQCP process |
| 6 | Approved by Engineer | Approved by Resident Project Representative |
| 7 | Paving projects over $250,000 shall have a Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Contractor, subcontractors, testing laboratories, and Owner's representative and the FAA prior to or at start of construction. The workshop shall address QC and QA requirements of the project specifications. The Contractor shall coordinate with the | A Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Resident Project Representative (RPR), Contractor, subcontractors, testing laboratories, and Owner's representative must be held prior to start of construction. The QC/QA workshop will be facilitated by the Contractor. The contractor shall coordinate with |

# 150/5370-10G Versus 150/5370-10H
# Contractor Quality Control Program

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| | Airport and the Engineer on time and location of the QC/QA workshop. | the Airport and the RPR on time and location of the QC/QA workshop. Items to be addressed, at a minimum, will include:<br>**a.** Review of the CQCP including submittals, QC Testing, Action & Suspension Limits for Production, Corrective Action Plans, Distribution of QC reports, and Control Charts.<br>**b.** Discussion of the QA program.<br>**c.** Discussion of the QC and QA Organization and authority including coordination and information exchange between QC and QA.<br>**d.** Establish regular meetings to discuss control of materials, methods and testing.<br>**e.** Establishment of the overall QC culture. |
| 8 | The Quality Control Program shall be organized to address, as a minimum, the following items:<br>**a.** Quality control organization<br>**b.** Project progress schedule<br>**c.** Submittals schedule<br>**d.** Inspection requirements<br>**e.** Quality control testing plan<br>**f.** Documentation of quality control activities<br>**g.** Requirements for corrective action when quality control and/or acceptance criteria are not met | The CQCP shall be organized to address, as a minimum, the following:<br>1. QC organization and resumes of key staff<br>2. Project progress schedule<br>3. Submittals schedule<br>4. Inspection requirements<br>5. QC testing plan<br>6. Documentation of QC activities and distribution of QC reports<br>7. Requirements for corrective action when QC and/or QA acceptance criteria are not met<br>8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan. |
| 9 | a. Program Administrator. The Program Administrator shall be a full-time [on-site] employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of five (5) years of | a. Program Administrator. The Contractor Quality Control Program Administrator (CQCPA) must be a full-time [on-site] employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA must have a minimum of five (5) years of experience in QC pavement |

# 150/5370-10G Versus 150/5370-10H
# Contractor Quality Control Program

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| | experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.<br>Additional qualifications for the Program Administrator shall include at least one of the following requirements:<br>(1) Professional Engineer with one (1) year of airport paving experience.<br>(2) Engineer-in-training with two (2) years of airport paving experience.<br>(3) An individual with three (3) years of highway and/or airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.<br>(4) Construction materials technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).<br>(5) Highway materials technician certified at Level III by NICET.<br>(6) Highway construction technician certified at Level III by NICET.<br>(7) A NICET certified engineering technician in Civil Engineering Technology with five (5) years of highway and/or airport paving experience. | construction with prior QC experience on a project of comparable size and scope as the contract. Included in the five (5) years of paving/QC experience, the CQCPA must meet at least one of the following requirements:<br>(1) Professional Engineer with one (1) year of airport paving experience.<br>(2) Engineer-in-training with two (2) years of airport paving experience.<br>(3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with three (3) years of airport paving experience.<br>(4) An individual with four (4) years of airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction. |
| 10 | b. Quality control technicians. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of two (2) years of experience in their area of expertise.<br>The quality control technicians shall report directly to the Program Administrator and shall perform the following functions: | b. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.<br>The QC technicians must report directly to the CQCPA and shall perform the following functions:<br>(1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.<br>(2) Performance of all QC tests as required by the technical specifications and paragraph 100-8. |

# 150/5370-10G Versus 150/5370-10H
## Contractor Quality Control Program

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| | (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by subsection 100-06.<br>(2) Performance of all quality control tests as required by the technical specifications and subsection 100-07.<br>(3) Performance of density tests for the Engineer when required by the technical specifications.<br>Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification. | (3) Performance of tests for the RPR when required by the technical specifications. Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification. |
| 11 | 100-04 Project progress schedule. The Contractor shall submit a coordinated construction schedule for all work activities. The schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified in the contract. As a minimum, it shall provide information on the sequence of work activities, milestone dates, and activity duration. | 100-4 Project progress schedule. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, Execution and Progress. |
| 12 | | 100-7 Contractor QC testing facility.<br>a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials:<br>• 8.1.3 Equipment Calibration and Checks;<br>• 8.1.9 Equipment Calibration, Standardization, and Check Records;<br>• 8.1.12 Test Methods and Procedures b. For projects that include P-501, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM C1077, Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation: |

# 150/5370-10G Versus 150/5370-10H
# Contractor Quality Control Program

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| | | • 7 Test Methods and Procedures<br>• 8 Facilities, Equipment, and Supplemental Procedures |
| 13 | 100-07 Quality control testing plan.<br>The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:<br>a. Specification item number (for example, P-401)<br>b. Item description (for example, Plant Mix Bituminous Pavements) | 100-8 QC testing plan.<br>The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:<br>a. Specification item number (e.g., P-401)<br>b. Item description (e.g., Hot Mix Asphalt Pavements) |
| 14 | a. Daily inspection reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:<br>(1) Technical specification item number and description<br>(2) Compliance with approved submittals<br>(3) Proper storage of materials and equipment<br>(4) Proper operation of all equipment<br>(5) Adherence to plans and technical specifications<br>(6) Review of quality control tests<br>(7) Safety inspection. | a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:<br>(1) Technical specification item number and description<br>(2) Compliance with approved submittals<br>(3) Proper storage of materials and equipment<br>(4) Proper operation of all equipment<br>(5) Adherence to plans and technical specifications<br>(6) Summary of any necessary corrective actions<br>(7) Safety inspection.<br><br>When QC daily test results are recorded and transmitted electronically, the results must be archived. |
| 15 | 100-10 Surveillance by the Engineer | 100-11 Inspection and/or observations by the RPR. |
| 16 | 100-11 Noncompliance.<br>a. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. | 100-12 Noncompliance.<br>a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. |
| 17 | | METHOD OF MEASUREMENT<br>100-13 Basis of measurement and payment. Contractor Quality Control Program (CQCP) is for the personnel, tests, facilities and documentation required to implement the CQCP. The CQCP will be paid as a lump sum with the following schedule of partial payments: |

# 150/5370-10G Versus 150/5370-10H
# Contractor Quality Control Program

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| | | [ a. With first pay request, 25% with approval of CQCP and completion of the Quality Control (QC)/Quality Assurance (QA) workshop.<br>b. When 25% or more of the original contract is earned, an additional 25%.<br>c. When 50% or more of the original contract is earned, an additional 20%.<br>d. When 75% or more of the original contract is earned, an additional 20%<br>e. After final inspection and acceptance of project, the final 10%. |
| 18 | | 100-14 Payment will be made under:<br>[ Item C-100 Contractor Quality Control Program (CQCP) ] |