Model Curriculum

1. Quality Technician

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Quality Assurance and Quality Control
REF ID: CON/Q0403
NSQF LEVEL: 6

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CONSTRUCTION SECTOR SKILLS COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Quality Technician' QP No. 'CON/Q 0403 NSQF Level 3'

Date of Issuance: January 31st, 2017

Valid up to: August 23rd, 2017

* Valid up to the next review date of the Qualification Pack

Authorised Signatory
(Construction Skill Development Council)

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Quality Technician

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Quality Technician", in the "Construction" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Quality Technician**		
Qualification Pack Name & Reference ID. ID	CON/Q0403, v1.0		
Version No.	1.0	**Version Update Date**	23-08-2017
Pre-requisites to Training	Preferably 12th standard with 8 years site experience in same occupation for Non trained worker/ 5 years site experience as a certified Construction Laboratory & Field Technician for Trained worker		
Training Outcomes	**After completing this programme, participants will be able to:** • **Conduct testing of construction material as per IS standards/work method statement and compute test result**– Develop understanding of standard test procedures for different construction materials, recording observation and computation of test result. • **Carry out inspection of construction material, work quality at site and conduct field test**– Learn to carry out inspection and perform standard test on construction materials at fields and able to get approval to the concerned superior/engineer • **Maintain QA/QC documents as per Quality Management System–** Learning and practicing about maintaining all documents/register/report/observation related to QA/QC activity • **Maintain construction site laboratory** – Learn and ensure all testing instruments, equipment's and materials are maintained and used properly in lab • **Supervise, monitor and evaluate performance of subordinates at workplace-** Learn and practice method of motivating and guiding subordinates to get the assigned task done as per desired quality and productivity norms • **Manage workplace for safe and healthy work environment-** Learn and observe applicable safe work practices and environmental norms, relevant to construction electrical works.		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of "Quality Technician" Qualification Pack issued by "Construction Skill Development Council of India".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction** **Theory Duration** (hh:mm) 08:00 **Practical Duration** (hh:mm) 08:00	**Introduction: -** • Role description/ functions of the job role • Expected personal attributes from the job role • Brief description about course content, mode of learning and duration of course • Future possible progression and career development provisions on completion of the course • Concept of organizational structure and reporting • Soft skills as applicable to communication, decision making and personal behavior **Theory and practical: -** • computer basics – MS Office, Internet, E-mail • Leadership development program • Model work schedule for installation and dismantling of critical construction equipments (Interpretation and preparation) • Installation guidelines for relevant equipments as provided by manufacturers (Interpretation and description)	infrastructural requirements 1. classroom having sitting capacity of 30 trainees 2. blackboard 3. LCD monitor 32'' 4. Laptop **Fully equipped laboratory for conducting test on Cement/Concrete/Aggregate/Bitumen/Soil/Brick and Block**
2	**Conduct testing of construction material as per IS standards/work method statement and compute test result** **Theory Duration** (hh:mm) 200:00 **Practical Duration- On job training** (hh:mm) 200:00 (On Job Training) **Corresponding NOS Code** CON/N0407	**Theory: -** • Detailed knowledge of testing of construction materials as per IS standard (Cement/Concrete/Aggregate/Bitumen /Soil/Brick and Block) • Standard method for tagging/coding/numbering on test sample • Standard method for sampling and different types of field test for construction materials • Concept of transporting for test sample from field to site laboratory • Concept of periodical testing of construction materials also follow standard procedure about storing and handling	**Testing instruments/Equipments:** 1. Trowel 2. Sampling accessories for field density test of soil 3. Dishes 4. Weighing dishes 5. Enameled trays 6. Desiccators 7. Vernier calipers 8. Straight edge 9. Vicat apparatus 10. Le-Chatelier apparatus 11. Le-Chatelier flask 12. cube moulds 13. Vibration machine

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Learn periodical maintenance of tools and equipment's including its repair • Learn about read dial gauge reading on testing instruments with least count • Concept about standard time periods for periodical calibration and maintenance of tools/equipment/machinery • Detailed concept of disposal/utilization of tested materials and also procedure of housekeeping in laboratory • Learn standards procedure about environment/health/safety related to his own work area • Knowledge of specifications of test materials and classification of materials based upon specifications • Knowledge of mathematics and computer as applicable to QA/QC • Concept about mix design process for concrete **Demonstration/ Practical (D/P):-** • Demonstrate standard test procedure carry out on construction materials and concrete in site laboratory • Demonstrate how to select materials for testing as per identification shown in laboratory • Perform and check necessary step to ensure tools/apparatus/instruments/equipment's are calibrated and are in safe working condition • Formulate and generalize sample preparation and instruments are operated as per required guideline load by sub-ordinates in laboratory • List out and fill the observation and dial gauge reading in an observation sheet during test in site laboratory • Compute and interpretation of result and take approval from concerned authority related to laboratory test	14. Standard cement cube moulds 15. Gauging trowel 16. Standard sieves for Fine aggregate tests 17. Standard sieves for coarse aggregate test 18. Pycnometer 19. calibrated volume measure for density test, 20. tamping rod 21. Brushes 22. Funnels 23. Graduated glass measuring cylinders 24. Concrete table vibrator 25. Slump cone Apparatus 26. Flow table test apparatus 27. Vee Bee test apparatus 28. Compression testing machine 29. Casagrande apparatus 30. Plastic limit test apparatus 31. Shrinkage limit test apparatus 32. Compaction test apparatus 33. Permeability test apparatus 34. cylindrical metal container 35. heating oven 36. flakiness gauge 37. elongation gauge 38. crushing value apparatus 39. impact value apparatus 40. abrasion value apparatus 41. rapid moisture content meter apparatus 42. mechanical sieve shaker

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			43. specific gravity bottle 44. bitumen compactor 45. flash and fire point test apparatus 46. Marshall stability test apparatus **<u>Measuring tools:</u>** 47. Measuring Tape 48. Metal- Tri-Square 49. Spirit level 50. Steel scale 51. Weighing balance 52. Thermometers 53. Stopwatch <u>PPEs & safety equipment's</u> 54. helmet 55. safety shoes 56. safety belt 57. cotton rubber gloves 58. ear plugs 59. reflective jackets 60. nose mask 61. lab coat 62. safety message boards 63. message board displaying Do's and Don'ts at construction sites 64. Fire extinguishers 65. Sand buckets
3	**Carry out inspection of construction material, work quality at site and conduct field test** **Theory Duration** (hh:mm) 80:00 **Practical Duration- On job training** (hh:mm)	**<u>Theory:</u>** • Detailed concept about site quality plan related to construction work and civil drawing • Detailed concept about types of field test for construction materials • Detail idea about how to carrying out and check quality of structural works, finishing works, waterproofing works, road laying works	**<u>Testing instruments/Equipments:</u>** 1. Trowel 2. Sampling accessories for field density test of soil 3. Dishes 4. Weighing dishes 5. Enameled trays 6. Desiccators 7. Vernier calipers

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	80:00 (On Job Training) **Corresponding NOS Code** CON/N0408	• Detailed idea about good and bad workmanship related to construction work at site • Detailed information of non-conformation repot • Detailed idea to tools, instruments and equipment's required to field testing also upkeep maintenance and upkeep of these • Detailed concept about EHS policies related to work • Maintenance of testing records, reports and other related documents • Standard method of housekeeping procedure **Demonstration/ Practical (D/P): -** • Demonstrate standard test procedures and method related to material testing of construction materials • Demonstrate visual/physical inspection on construction materials to assure quality as per standard procedure • Demonstrate reporting procedure about quality of materials to concerned authority • Conduct core cutting test on soil and compute its required result as per standard test procedure • Demonstrate and Conduct field test on fresh concrete as per standard test procedure • Carry out field testing by core cutting method on bitumen to determine bitumen content as per standard test procedure • Demonstrate and execute transportation of construction materials and other test materials to site laboratory as per test requirements • Develop and arrange how to facilitate third party agency for testing of soil, concrete, asphalt in field as per applicability	8. Straight edge 9. Vicat apparatus 10. Le-Chatelier apparatus 11. Le-Chatelier flask 12. cube moulds 13. Vibration machine 14. Standard cement cube moulds 15. Gauging trowel 16. Standard sieves for Fine aggregate tests 17. Standard sieves for coarse aggregate test 18. Pycnometer 19. calibrated volume measure for density test, 20. tamping rod 21. Brushes 22. Funnels 23. Graduated glass measuring cylinders 24. Concrete table vibrator 25. Slump cone Apparatus 26. Flow table test apparatus 27. Vee Bee test apparatus 28. Compression testing machine 29. Casagrande apparatus 30. Plastic limit test apparatus 31. Shrinkage limit test apparatus 32. Compaction test apparatus 33. Permeability test apparatus 34. cylindrical metal container 35. heating oven 36. flakiness gauge 37. elongation gauge 38. crushing value apparatus

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Examine and evaluate details from the drawing, work method statement to ensure works are as per quality norms • Conduct different methods of checks at site including testing and confirming compliances and also record all results carried out at site • Perform identify, communicate and closure of snag list at site • Perform Preparation of notes/reports after completion of construction works	39. impact value apparatus 40. abrasion value apparatus 41. rapid moisture content meter apparatus 42. mechanical sieve shaker 43. specific gravity bottle 44. bitumen compactor 45. flash and fire point test apparatus 46. Marshall stability test apparatus **Measuring tools:** 47. Measuring Tape 48. Metal- Tri-Square 49. Spirit level 50. Steel scale 51. Weighing balance 52. Thermometers 53. Stopwatch PPEs & safety equipment's 54. helmet 55. safety shoes 56. safety belt 57. cotton rubber gloves 58. ear plugs 59. reflective jackets 60. nose mask 61. lab coat 62. safety message boards 63. message board displaying Do's and Don'ts at construction sites 64. Fire extinguishers 65. Sand buckets
4	**Maintain QA/QC documents as per Quality Management system** **Theory Duration**	**Theory:** • Detailed concept about coding for documents as per quality management system	**Testing instruments/Equipments:** 1. Trowel 2. Sampling accessories for

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(hh:mm) 60:00 **Practical Duration- On job training** (hh:mm) 60:00 (On Job Training) **Corresponding NOS Code** CON/N0409	• Detailed concept and method of maintenance of register, documentation of method statements, quality plans inspection checklist, test report, bad workmanship in site • Detailed concept about documentation of test sample, third party inspection, material test certificate, calibration certificate, NCR • Concept of work approval from clients/superior and its related data **Demonstration/ Practical:** • Demonstrate and practice standard procedure for maintenance of QA/QC documents, register and file as per standard procedure • Practice and maintain method statements, standard testing procedures, site quality plans and site inspection checklist • Carry out and prevent test equipment manual, ISO quality manual, current records related to quality control activity and test have been performed	field density test of soil 3. Dishes 4. Weighing dishes 5. Enameled trays 6. Desiccators 7. Vernier calipers 8. Straight edge 9. Vicat apparatus 10. Le-Chatelier apparatus 11. Le-Chatelier flask 12. cube moulds 13. Vibration machine 14. Standard cement cube moulds 15. Gauging trowel 16. Standard sieves for Fine aggregate tests 17. Standard sieves for coarse aggregate test 18. Pycnometer 19. calibrated volume measure for density test, 20. tamping rod 21. Brushes 22. Funnels 23. Graduated glass measuring cylinders 24. Concrete table vibrator 25. Slump cone Apparatus 26. Flow table test apparatus 27. Vee Bee test apparatus 28. Compression testing machine 29. Casagrande apparatus 30. Plastic limit test apparatus 31. Shrinkage limit test apparatus 32. Compaction test apparatus 33. Permeability test apparatus

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			34. cylindrical metal container 35. heating oven 36. flakiness gauge 37. elongation gauge 38. crushing value apparatus 39. impact value apparatus 40. abrasion value apparatus 41. rapid moisture content meter apparatus 42. mechanical sieve shaker 43. specific gravity bottle 44. bitumen compactor 45. flash and fire point test apparatus 46. Marshall stability test apparatus **Measuring tools:** 47. Measuring Tape 48. Metal- Tri-Square 49. Spirit level 50. Steel scale 51. Weighing balance 52. Thermometers 53. Stopwatch PPEs & safety equipment's 54. helmet 55. safety shoes 56. safety belt 57. cotton rubber gloves 58. ear plugs 59. reflective jackets 60. nose mask 61. lab coat 62. safety message boards 63. message board displaying Do's and Don'ts at construction sites 64. Fire extinguishers 65. Sand buckets

Sr. No.	Module	Key Learning Outcomes	Equipment Required
5	**Maintain Construction site laboratory** **Theory Duration** (hh:mm) 80:00 **Practical Duration- On job training** (hh:mm) 80:00 (On Job Training) **Corresponding NOS Code** CON/N410	**Theory:-** • Detailed concept about storing and handling of test sample and construction materials • Detailed concept about safety norms for storing and handling of hazardous materials • Detailed idea about manufacturer guideline for storing and handling technique of testing tools, instruments and equipment's • Detailed concept about maintenance, repair and preservation of tools and equipment's from environmental condition • Concept about calibration of machines and equipment's • Detailed concept about EHS norms and policies related to quality site work • Concept about standard housekeeping procedure related to site laboratory **Demonstration/ Practical :-** • Demonstrate and performed to ensure standard procedure is followed for storing and tagging of construction test materials • Perform check to ensure proper functioning of testing tools, instruments and equipment's and easily available while testing • Demonstrate reporting procedure to concerned authority in case of instruments and equipment's • Demonstrate method to check periodical calibration of construction equipment's, tools and machine • Demonstrate prevention of instruments and equipment's from natural calamities • Demonstrate maintenance of tools, apparatus, machine and its accessories after test including storing of chemical, admixture and materials	**Testing instruments/Equipments:** 1. Trowel 2. Sampling accessories for field density test of soil 3. Dishes 4. Weighing dishes 5. Enameled trays 6. Desiccators 7. Vernier calipers 8. Straight edge 9. Vicat apparatus 10. Le-Chatelier apparatus 11. Le-Chatelier flask 12. cube moulds 13. Vibration machine 14. Standard cement cube moulds 15. Gauging trowel 16. Standard sieves for Fine aggregate tests 17. Standard sieves for coarse aggregate test 18. Pycnometer 19. calibrated volume measure for density test, 20. tamping rod 21. Brushes 22. Funnels 23. Graduated glass measuring cylinders 24. Concrete table vibrator 25. Slump cone Apparatus 26. Flow table test apparatus 27. Vee Bee test apparatus 28. Compression testing machine 29. Casagrande apparatus 30. Plastic limit test apparatus

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Demonstrate the disposal of waste as per EHS policies and care for cleaning of curing tank as per quality plan	31. Shrinkage limit test apparatus 32. Compaction test apparatus 33. Permeability test apparatus 34. cylindrical metal container 35. heating oven 36. flakiness gauge 37. elongation gauge 38. crushing value apparatus 39. impact value apparatus 40. abrasion value apparatus 41. rapid moisture content meter apparatus 42. mechanical sieve shaker 43. specific gravity bottle 44. bitumen compactor 45. flash and fire point test apparatus 46. Marshall stability test apparatus **Measuring tools:** 47. Measuring Tape 48. Metal- Tri-Square 49. Spirit level 50. Steel scale 51. Weighing balance 52. Thermometers 53. Stopwatch PPEs & safety equipment's 54. helmet 55. safety shoes 56. safety belt 57. cotton rubber gloves 58. ear plugs 59. reflective jackets 60. nose mask 61. lab coat 62. safety message boards

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			63. message board displaying Do's and Don'ts at construction sites 64. Fire extinguishers 65. Sand buckets
6	**Supervise, monitor and evaluate performance of subordinates at workplace** **Theory Duration** (hh:mm) 40:00 **Practical Duration- On job training** (hh:mm) 40:00 (On Job Training) **Corresponding NOS Code** CON/N8003	**Theory: -** • Setting up timelines for completion of activities as per resource deployed and productivity norms • Managing manpower and allocation of manpower as per deadline provided for assign task • Critical quality aspects to be checked in the ongoing/ completed test • How to provide timely instructions to the subordinates during ongoing works/checks • How to evaluate strengths and weakness of subordinate workers and utilize them appropriately as per job requirement • Method of supervising activities to increase productivity of workers and achieving set quality and safety standards for the laboratory works **Demonstration/ Practical (D/P): -** • Instruct subordinates for applicable working methods and safety norms for assigned works • Seek work related clarifications from subordinates and provide support/ guidance as per requirement of the job • Observe each subordinate as per their strength and weaknesses and deploy them as per criticality/ emergency of the job • Implement organisational/ quality / safety work methods while undertaking any job and ensure compliance to the same by subordinates	PPEs & safety equipment's 66. helmet 67. safety shoes 68. safety belt 69. cotton rubber gloves 70. ear plugs 71. reflective jackets 72. nose mask 73. lab coat 74. safety message boards 75. message board displaying Do's and Don'ts at construction sites 76. Fire extinguishers 77. Sand buckets infrastructural requirements 78. Classroom having sitting capacity of 30 trainees 79. Blackboard 80. LCD monitor 32'' 81. Laptop
7	**Manage workplace for safe and healthy work environments**	**Theory:-** • Housekeeping Standard procedures • Handling and stacking of materials at workplace/stores	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Theory Duration (hh:mm) 40:00 **Practical Duration- On job training** (hh:mm) 40:00 (On Job Training) **Corresponding NOS Code** CON/N9002	• Various kind of Hazards associated with laboratory work and in general in construction sites • Safety, its importance and protective measures • Correct uses of tools and tackles • Personal Protective Equipments (PPE's) ❖ Head protection (Helmets) ❖ Ear protection ❖ Fall protection ❖ Foot protection ❖ Face and Eye protection ❖ Hand & body protection ❖ Respiratory protection • Organizational Policies related to Health, environment and Safety: ❖ Methods of receiving or sourcing information ❖ Dealing with accidents and emergencies associated with the work and environment ❖ Reporting ❖ Emergency evacuation ❖ Fire risks and safe exit procedures • Reporting procedure to the concerned authority in emergency situations • Fire protection equipments, their type and uses based on requirement and type of fire **Demonstration/ Practical :-** • Demonstrate methods for safe handling and stacking of materials, fixtures, different equipment's/machinery along with its parts and consumables. • Selection of PPEs and their appropriately usage as per working need during test works. • Demonstrate safe handling of tools and tackles relevant to different works. • Analysis of hazards involved in there works or informing/reporting to seniors regarding hazardous conditions	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Identification of locations, situations/ circumstances, malpractices which can be hazardous for works • Reporting in case of emergency • Selection of fire extinguisher based on classification of fire, standard practice of storing & stacking firefighting equipment/ materials at work locations • Disposal of waste materials as per their nature and effects on weather Reporting in case of emergency	
	Total Duration **Theory Duration 508:00** **Practical Duration 08:00** **OJT-On job training 500:00**	**Unique Equipment Required:** **Testing instruments/Equipments:** Trowel , Sampling accessories for field density test of soil , Dishes, Weighing dishes ,Enameled trays, Desiccators, Vernier calipers, Straight edge , Vicat apparatus, Le-Chatelier apparatus, Le-Chatelier flask, cube moulds,Vibration machine, Standard cement cube moulds, Gauging trowel, Standard sieves for Fine aggregate tests, Standard sieves for coarse aggregate test, Pycnometer, calibrated volume measure for density test, , tamping rod , Brushes, Funnels, Graduated glass measuring cylinders, Concrete table vibrator, Slump cone Apparatus, Flow table test apparatus, Vee Bee test apparatus, Compression testing machine , Casagrande apparatus, Plastic limit test apparatus , Shrinkage limit test apparatus, Compaction test apparatus, Permeability test apparatus, cylindrical metal container, heating oven, flakiness gauge, elongation gauge, crushing value apparatus, impact value apparatus, abrasion value apparatus, rapid moisture content meter apparatus, mechanical sieve shaker, specific gravity bottle bitumen compactor, flash and fire point test apparatus, Marshall stability test apparatus **Measuring tools:** Measuring Tape , Metal- Tri-Square , Spirit level , Steel scale, Weighing balance, Thermometers, Stopwatch **PPEs & safety equipment's** helmet ,safety shoes , safety belt, cotton rubber gloves, ear plugs , reflective jackets, nose mask, lab coat, safety message boards, message board displaying Do's and Don'ts at construction sites, Fire extinguishers, Sand buckets **Infrastructural requirements** classroom having sitting capacity of 30 trainees, blackboard LCD monitor 32'', laptop	

Grand Total Course Duration: **1016 Hours, 00 Minutes**

*(This syllabus/ curriculum has been approved by **Construction Skill Development Council of India)***

Trainer Prerequisites for Job role: "Quality Technician" mapped to Qualification Pack: "CON/Q0403, v1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "CON/Q0403".
2	**Personal Attributes**	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field
3	**Minimum Educational Qualifications**	ITI/12th
4a	**Domain Certification**	Trainer/Assessor-80% in each NOS and Lead trainer/Lead Assessors-90% in each NOS
4b	**Platform Certification**	Trainer/Assessor-50% in each NOS & 80% overall, Lead trainer/ Lead Assessors- 50% in each NOS and overall 90%
5	**Experience**	. Technical Degree holder with minimum five years of Field experience and preferably two years of teaching experience, or, ii. In case of a Diploma Holder seven years of field experience and preferably two years of teaching experience or, iii. In case of ITI/12th minimum ten years of field experience and preferably two years of teaching experience.

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role	Quality Technician
Qualification Pack	CON/Q0403
Sector Skill Council	Construction

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8. After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity .
9. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified timeframe set by SSC.
10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

				Marks Allocation	
Assessment outcomes	Assessment Criteria for outcomes	**Total Mark**	**Out Of**	**Theory**	**Skills Practical**
CON/N0407: Conduct testing of construction material as per IS standards/work method statement and compute test result	PC1. Read and understand standard test procedure for testing of cement, aggregate, sand, bitumen, brick, concrete blocks, soil, concrete in the site laboratory	**100**	10	5	5
	PC2. Ensure right test sample is selected for testing as per tagging/coding/numbering		10	5	5
	PC3. Ensure instrument, equipments used for tests are calibrated as per schedule of calibration		10	5	5
	PC4. Ensure all tools, apparatus, instrument and equipments are available in the site laboratory and are in proper working condition		10	5	5
	PC5. Oversee sample preparation and test done by sub-ordinates		10	5	5
	PC6. ensure test instrument are operated and loads are applied for required test as per manufacturer's guideline confirming to IS standards for testing		10	5	5
	PC7. Read and record dial reading in a test register as shown by the test instruments in standard test performa		10	5	5
	PC8. Record observation while conducting test in an observation sheet		10	5	5
	PC9. Fill test report containing detail of test such as type of material, testing date, identification of sample, dial reading, observation during test, weight of material, average value of test, test method reference etc.		10	5	5
	PC10. Compute the result of test performed for cement, aggregate, sand, bitumen, brick, concrete blocks, soil, concrete for approval from Quality Engineer/Laboratory-Incharge		10	5	5
		Total	**100**	**50**	**50**
CON/N0408: Carry out inspection of construction material, work quality at site and conduct field test	PC1. Read and understand standard test procedures and methods related to material testing (cement, sand, aggregate, concrete, soil, bitumen, brick, blocks, asphalt)	**100**	5	2.5	2.5
	PC2. Check to assure only approved materials(cement, sand, aggregate, bitumen, steel, brick, blocks, admixtures, asphalt) are used at site		5	2.5	2.5
	PC3. Carry out visual/physical inspection of cement, bricks, blocks, sand, aggregate, concrete, bitumen in field		5	2.5	2.5
	PC4. Report to superior in case any substandard quality material is observed		5	2.5	2.5
	PC5. Conduct extraction of soil sample in field by core cutting method		5	2.5	2.5
	PC6. Conduct field testing of soil to determine water content, dry density of soil as per standard test procedure		6	3	3
	PC7. Conduct field testing of concrete to determine slump value and ensure concrete cubes are casted in field as per standard cube casting procedure		6	3	3
	PC8. Conduct extraction of bitumen sample in field by core cutting method		6	3	3

	PC9. Conduct field testing of bitumen to determine bitumen content as per standard test procedure		6	3	3
	PC10. Ensure extracted test sample of soil and bitumen, concrete cubes casted in field are transferred undisturbed to site laboratory case of test to be performed in laboratory as per test requirement		6	3	3
	PC11. Facilitate third party agency for testing of soil, concrete, asphalt in field as per applicability		5	2.5	2.5
	PC12. Read and interpret details from the drawing, work method statement to ensure works are as per quality norms		5	2.5	2.5
	PC13. Perform routine checks at site including testing and confirming compliances		5	2.5	2.5
	PC14. Document all results carried out at site as per Quality plan		5	2.5	2.5
	PC15. Carry out inspection and checking for all quality related procedures in the site and ensures activity at site are as per approved method statement and inspection test plan		5	2.5	2.5
	PC16. Identify, communicate, and document deficiencies in site related to work quality and check they are corrected		5	2.5	2.5
	PC17. Check that necessary action is taken for closure of snag list and get an approval from concerned Authority for snag list		5	2.5	2.5
	PC18. Get approval from the concerned superior/QAQC engineer/client for next succeeding activity		5	2.5	2.5
	PC19. Prepare notes/reports regarding completion of construction works for respective structures		5	2.5	2.5
		Total	**100**	**50**	**50**
CON/N0409: Maintain QA/QC documents as per Quality Management system	PC1. Read, understand and follow standard procedure for maintenance of QA/Qc documents in laboratory	**100**	12	6	6
	PC2. Provide suitable codes and title to the documents file as per the site quality plan of documentation		13	6.5	6.5
	PC3. Maintain register for incoming test material sample		15	7.5	7.5
	PC4. Maintain QA/QC documents such as method statements, standard testing procedures, site quality plans, site inspection checklist		15	7.5	7.5
	PC5. Maintain document related to test equipment manual, ISO quality manual		15	7.5	7.5
	PC6. Maintain current records providing factual evidence that required quality control activities and/or tests have been performed		15	7.5	7.5
	PC7. Maintain QA/QC documents including incoming test material sample register, test results , test certificates, equipments calibration reports, inspection requests, non-compliance reports and site instruction/observations, RMC reports, cube register and other QA/QC documents		15	7.5	7.5
		Total	**100**	**50**	**50**
CON/N0410:	PC1. Read, understand and ensure standard procedure is followed for storing, and tagging of construction test material sample	**100**	10	5	5

Maintain construction site laboratory	PC2. Check proper functioning of testing instrument and equipment		10	5	5
	PC3. Report to superior/manufactures in case of break down/non-functioning of test instruments and equipments		10	5	5
	PC4. Ensure instrument, equipments used for tests are periodically calibrated as per schedule of calibration				
	PC5. Prevent testing instrument and equipments from dust/moisture/ heat and other degrading agents when not in use		10	5	5
	PC6. Ensure cleaning of tools, apparatus, instrument, accessories and placing at appropriate location after use		8	4	4
	PC7. Ensure standard procedure is followed for storing of chemical, admixtures, inflammable material in site laboratory		10	5	5
	PC8. Ensure all tools, apparatus, instrument and equipments are readily available for testing in site laboratory		8	4	4
	PC9. Ensure all field testing instrument are readily available for testing		8	4	4
	PC10. Ensure tested material is kept at Laboratory for a specified duration as per applicability		10	5	5
	PC11. Ensure test sample material are disposed/utilized after testing as per standard practices keeping in view environmental norms at site		8	4	4
	PC12. Ensure curing tank is cleaned periodically as per site quality plan		8	4	4
		Total	**100**	**50**	**50**
CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace	PC1. fix expected targets for the respective gang as per site requirements and allocate work to subordinates	100	15	7.5	7.5
	PC2. establish expected performance standards and expectations for the respective gang of workers to meet the desired outcomes		15	7.5	7.5
	PC3. inspect assigned work to the respected gang of workers through progressive checking		20	10	10
	PC4. observe and verify the work activities performed by the subordinates at the construction site		20	10	10
	PC5. monitor overall performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority		15	7.5	7.5
	PC6. ensure adherence to the organizational policies and procedures for all relevant construction activities by the workmen subordinations		15	7.5	7.5
		Total	**100**	**50**	**50**
CON/N9002: Manage workplace for safe and healthy work environment	PC1. ensure proper housekeeping at workplace		5	2.5	2.5
	PC2. implement safe handling , stacking methods at workplace / store		5	2.5	2.5
	PC3. insure that health and safety plan is followed by all subordinates		5	2.5	2.5
	PC4. identify any hazard in workplace and notify them to appropriate authority		5	2.5	2.5

	PC5. ensure that all safety and protection installation are correctly placed & adequate		5	2.5	2.5
	PC6. ensure safe access is available at work place for movement of workers & materials		5	2.5	2.5
	PC7. ensure safe use of tools and tackles by the workmen as per applicability		5	2.5	2.5
	PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability: □ Head Protection (Helmets) □ Ear Protection □ Fall Protection □ Foot Protection □ Face and Eye Protection, □ Hand &Body Protection □ Respiratory Protection		10	5	5
	PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals.		5	2.5	2.5
	PC10. ensure organizational policies and procedures are followed for health , safety and welfare, in relation to: □ methods of receiving or sourcing information □ dealing with accidents and emergencies associated with the work and environment □ reporting □ stooping work □ evacuation □ fire risks and safe exit procedures		10	5	5
	PC11. follow procedures for accident recording and reporting as per organizational and statuary requirements		5	2.5	2.5
	PC12. ensure effective adherence to response to emergency procedures / protocols		7.5	3.75	3.75
	PC13. report any case of emergency / risks to the concern people at the construction site		7.5	3.75	3.75
	PC14. report any perceived risk hazards to the superiors / concerned EHS		7.5	3.75	3.75
	PC15. demonstrate the use of fire protection equipments for different type of fire hazard		7.5	3.75	3.75
	PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies		5	2.5	2.5
		Total	**100**	**50**	**50**