

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Construction Skill Development Council of India

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Name and contact details of individual dealing with the submission

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List of documents submitted in support of the Qualifications File

1. Career Map of Quality Assurance and Quality Control Occupation - Annexure 1
2. QP CON/Q0403- Annexure 2

QUALIFICATION FILE SUMMARY

Qualification Title	Quality Technician - QP CON/Q0403		
Body/bodies which will assess candidates	<ul style="list-style-type: none"> • MCG • Star Projects 		
Body/bodies which will award the certificate for the qualification.	CSDCI		
Body which will accredit providers to offer the qualification.	CSDCI		
Occupation(s) to which the qualification gives access	Quality Assurance and Quality Control		
Proposed level of the qualification in the NSQF.	6		
Anticipated volume of training/learning required to complete the qualification.	1000 hrs		
Entry requirements / recommendations.	Preferably 12 th standard		
Progression from the qualification.	Engineer (QA&QC)		
Planned arrangements for RPL.	Work is under progress		
International Comparability	Comparable with Australia Standard		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
CON/N0407: Conduct testing of construction material as per IS standards/work method statement and compute test result	Mandatory	400	6
CON/N0408: Carry out inspection of construction material, work quality at site and conduct field test	Mandatory	160	6
CON/N0409: Maintain QA/QC documents as per Quality Management system	Mandatory	120	6
CON/N0410: Maintain construction site laboratory	Mandatory	160	6
CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace	Mandatory	80	6
CON/N9002: Manage workplace for safe and healthy work environment	Mandatory	80	6

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.

Give details of the document here:

1. QP CON/Q0403- Annexure 2

SECTION 1

ASSESSMENT

Name of assessment body:

If there will be more than one assessment body for this qualification, give details.

- MCG
- Star Projects

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

The RPL assessment will be carried out through screening, identifying the skills gaps, provide bridge training to cover the competency gap and then conduct final assessment of the candidates.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

Assessment is done through third parties who are affiliated to CSDCI as Assessment Body. Assessors are trained & certified by CSDCI through Training of Trainers program. The assessment involves two processes. The first process is gathering the evidence of the competency of individuals. The second part of the assessment process is the judgement as to whether a person is competent or not. The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgements and
- Where appropriate, any supplementary criteria used to make a judgement on the level of performance.

The assessment is conducted through theory, viva voce and practical.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

Not Applicable

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as per the assessment criteria. Insert the required number of rows.

CRITERIA FOR ASSESSMENT OF TRAINEES

Quality Technician

CON/Q0403

Construction Skill Development Council Of India

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	
Assessable Outcome	Assessment criteria	Total Marks	Out Of	Theory	Practical Skills
CON/N0407: Conduct testing of construction material as per IS	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

standards/work method statement and compute test result	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 subordinates		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		5	2.5	2.5

	plan				
	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
CON/N0410: Maintain construction site laboratory	PC1. Read, understand and ensure standard procedure is followed for storing, and tagging of construction test material sample	100	10	5	5
	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		10	5	5
	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	20	80
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
CON/N9002: Manage workplace for safe and healthy work environment	PC1. ensure proper housekeeping at workplace	100	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:		10	5	5
	• Head Protection (Helmets)				
	• Ear Protection				
	• Fall Protection				
	• Foot Protection				
	• Face and Eye Protection, • Hand &Body Protection • Respiratory Protection				
	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:		10	5	5
• 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			
	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

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Please refer to the attached list of job roles and occupations identified in construction sector. These job roles have been derived through extensive industry interactions facilitated from 10 workshops and various site visits conducted and interaction with 500+ representatives from different construction sector organizations all over the country.

What is the estimated uptake of this qualification and what is the basis of this estimate?

As per survey the incremental Manpower Gap between 2008 and 2022 found out to be 459000 under Quality Assurance and Quality Control Occupation

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

QPs for Job Roles of various related SSC's were studied to ensure that there is no duplicity.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

Standards department of CSDCI will do periodic review and monitor the industry feedbacks, Training Partners feedback on the qualification and will incorporate them appropriately at the designated revision time.

The revision of this qualification is scheduled after 2 years i.e. 23/08/2017

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. List of job roles

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Summary of Direct Evidence:

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

Generic NOS is/are linked to the overall authority attached to the job role.

Quality Technician QP CON/Q0403					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
<p>The job holder at this level is expected to carry out wide range of activities from conducting testing of incoming material in construction site and laboratory for their quality aspect, carrying out inspection of construction material and work quality at site and conducting field test for concrete, soil, bitumen, aggregate etc.</p> <p>The job holder is expected to maintain document related to material test certificate, incoming sample material, provide codes/tag/label to test sample, maintain test result register. Also the job holder is expected to maintain site laboratory by ensuring all the testing tools, equipments are up-to-date, calibrated and</p>	<p>The job holder is expected to possess factual and theoretical knowledge about quality norms and standard method for testing of construction material in site and in laboratory. The job holder should have knowledge how and what material can be accepted based on visual inspection . The job holder should know about the types of tools, equipments and material required for material to be tested.</p> <p>Job holder should possess knowledge about work quality in site and acceptance criteria for the work performed by others in terms of quality. He/she should know about preparation of test specimen, handling, testing of material and how to calculate result as per the standard method applicable.</p> <p>Considering all the above points, job holder can be placed at Level-6</p>	<p>The job holder at this level is expected to employ cognitive skill while performing day-to-day to functioning of construction material testing laboratory. The job holder is expected to perform work which requires practical skill for ensuring proper test specimen preparation, shifting of test specimen to laboratory and conducting testing based on the time schedule for different material. The job holder visits site for inspecting material, performing tests at site and checks work quality to identify and document deficiency along with checking necessary action are taken to clear snag points.</p> <p>The job holder is expected to maintain and QA/QC document by adopting suitable method, ensures all the tools, equipment are calibrated and kept ready for immediate use by utilising developed skills.</p> <p>Considering all the above points, job</p>	<p>The job holder is expected to provide instructions to subordinates verbally and in written to meet the work requirement. Individual in this job role read standard test procedure for material testing, read and record dial reading in a test register, record observation and fill test reports. The job holder applies mathematical skill to calculate test result, preparing graph for results etc.</p> <p>Job holder collect collects data from the site and update all the details on a system and in hard form along with managing resources by coordinating with concerned authorities. Therefore the job role is kept at Level-6</p>	<p>The job holder is at this level is responsible quality of own work. Job holder is responsible for managing overall day to day operation of material testing and quality in site and in site along with doing necessary documentation. The individual is also responsible for optimal utilization of resources. Further, the individual is responsible for work performed by his subordinates as he is expected to supervise and guide them to obtain desired work. Thus the job holder is placed at this Level -6</p>	6

<p>are at their place for ready to use</p> <p>The job holder is should be proficient in using computer system for generating testing reports. These overall operation requires clarity of knowledge and practice in broad range of activity, therefore the job role is kept as Level-6</p>		<p>holder can be placed at Level-6</p>			
<p>Level 6</p>	<p>Level 6</p>	<p>Level 6</p>	<p>Level 6</p>	<p>Level 6</p>	

OTHER EVIDENCE OF LEVEL [This need only be filled in where evidence other than primary outcomes was used to allocate a level] (**Optional**)

Summary of other evidence (if used): **Not applicable.**

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Please refer to attached career path as per annexure 1 which clearly define the clear career path.

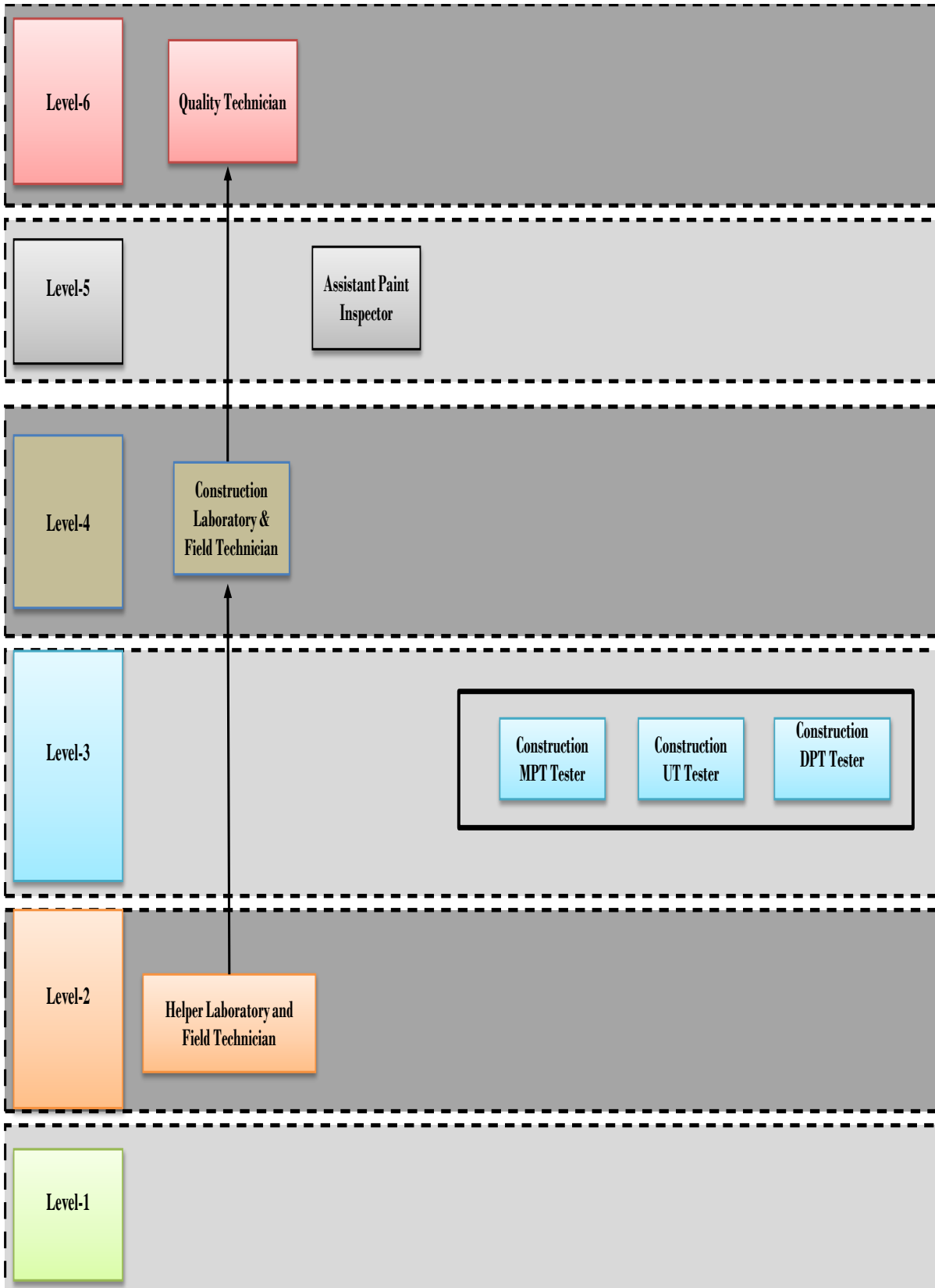
Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. Annexure 1
 - Overall Career map
 - Career map of Quality Assurance and Quality Control Occupation
2. QP CON/Q0403- Annexure 2

Annexure 1

Career Map



Annexure 2- QP CON/Q0403