

**QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY**

**Name and address of submitting body:**

**Construction Skill Development Council of India**

**Address:-** 204, Aashirwad Complex, D-1, Green Park, New Delhi - 110016

**Tel:** +91-11-46584466

**Name and contact details of individual dealing with the submission**

**Name:** Ms. Jancy Mathew

**Position in the organisation:** Head Standards and Research

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*Same as above*

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**List of documents submitted in support of the Qualifications File**

1. Career Map of Roads & Runway Construction Occupation - Annexure 1
2. QP CON/Q1003- Annexure 2

## QUALIFICATION FILE SUMMARY

<b>Qualification Title</b>	Foreman Roads & Runways - QP CON/Q1003		
<b>Body/bodies which will assess candidates</b>	<ul style="list-style-type: none"> <li>• MCG</li> <li>• Star Projects</li> </ul>		
<b>Body/bodies which will award the certificate for the qualification.</b>	CSDCI		
<b>Body which will accredit providers to offer the qualification.</b>	CSDCI		
<b>Occupation(s) to which the qualification gives access</b>	Roads & Runway Construction		
<b>Proposed level of the qualification in the NSQF.</b>	5		
<b>Anticipated volume of training/learning required to complete the qualification.</b>	800 hrs		
<b>Entry requirements / recommendations.</b>	Preferably 12th standard		
<b>Progression from the qualification.</b>	Supervisor Roads & Runways L-6		
<b>Planned arrangements for RPL.</b>	Work is under progress		
<b>International Comparability</b>	Comparable with UK Standard and Australia Standard		
<b>Formal structure of the qualification</b>			
<b>Title of unit or other component</b> (include any identification code used)	<b>Mandatory/ Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
CON/N1007: Organise and allocate resources for pavement construction work	Mandatory	184	5
CON/N1008: Conduct laying of base and sub- base course of pavements	Mandatory	192	5
CON/N1009: Conduct laying of binding and wearing course of pavements	Mandatory	168	5
CON/N1010: Conduct laying of pipes for drainage works/ service lines	Mandatory	160	5
CON/N8001 Work effectively in a team to deliver desired results at the workplace	Mandatory	40	5
CON/N9002: Manage workplace for safe and healthy work environment	Mandatory	56	5

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/Q1003- 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

### Foreman Roads & Runways

#### CON/Q1003

#### 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
<b>CON/N1007: Organise and allocate resources for pavement construction work</b>	PC1. Confirm work targets from superior or concerned authority to be achieved in a day/ week as per applicability	<b>100</b>	6	2.4	3.6
	PC2. Read and interpret drawings and relevant specifications to determine type and quantity of required material		6	2.4	3.6
	PC3. Communicate to superior regarding requirement of material for daily construction work such as aggregates, fines, bitumen etc.		6	2.4	3.6
	PC4. Communicate to superior regarding requirement of vehicle/ equipment relevant to construction work and for		6	2.4	3.6

	resource mobilization			
	PC5. Communicate to superior regarding requirement of manpower as per work target	7	2.8	5.2
	PC6. Conduct storing and stacking of materials and tools at work locations following standard practice of storing	7	2.8	5.2
	PC7. Conduct erection of protective and safety cover/ barrication for material and equipment to prevent wastage or unauthorized access	7	2.8	5.2
	PC8. Conduct erection of barrication, dividers, safety signage as per applicable safe work methodology	6	2.4	3.6
	PC9. Assign specific tasks to respective workmen groups	7	2.8	5.2
	PC10. Brief safe work methods and parameters to be followed by subordinates while handling/ storing materials, carrying out earthwork or laying layers of pavements	7	2.8	5.2
	PC11. Ensure required tools are available at worksite prior to commencement of relevant activity	7	2.8	5.2
	PC12. Monitor consumption and wastage of construction material	7	2.8	5.2
	PC13. Dispose waste to specified location and recycle usable wastes	7	2.8	5.2
	PC14. Confirm that the equipments to be used for compaction, material shifting, grading, surfacing are properly functioning	7	2.8	5.2
	PC15. Confirm that the material shifting vehicle operators have valid driving license	7	2.8	5.2
	<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N1008: Conduct laying of base and sub- base course of pavements</b>	PC1. Coordinate with surveyor for lay-outs, marking of level and edges prior to preparation of sub-grade for pavement	5	2	3
	PC2. Check level/ slope of earthwork in sub-grade by conducting checks and ensure it is as per drawing/ specification	5	2	3
	PC3. Conduct repair to the potholes, unstable/ loose soil by suitable methods as instructed by superior or quality department	5	2	3
	PC4. Conduct cleaning of surface of every pavement layers as per specification, prior to lay next layer	5	2	3
	PC5. Ensure derbies or wastes are disposed/ dumped to specified location as per work plan	5	2	3
	PC6. Carry out analysis of hazards conditions at work sites due to movement of vehicles or equipments, handling of hot asphalt for pavements, vehicular traffic and report to concerned authority	6	2.4	3.6
	PC7. Coordinate with superior or concerned departments to arrange safety measures, electrical connections and quality checks for progression of works	6	2.4	3.6
	PC8. Fill up permits, checklists, labour report formats as per organizational procedure and take approval from superior	6	2.4	3.6
	PC9. Read and interpret drawing, material specification prior to start pavement laying operation and as per requirement thereafter	6	2.4	3.6
	PC10. Check construction materials, pipe segments visually for their usability as per material specification	5	2	3
	<b>100</b>			

	PC11. Monitor and check filling work to construct sub grade by using suitable material and ensure impurities are cleared and disposed to the specified location		6	2.4	3.6
	PC12. Check that aggregates are raked properly, spread along the width and stretch maintaining uniform thickness and edge within the acceptable tolerance limit		6	2.4	3.6
	PC13. Monitor and conduct compaction of sub-base/ base course layer using roller of specified weight as per applicable/ standard work methodology		6	2.4	3.6
	PC14. Monitor void filling by finer materials (sand/ morrum/ stone dust), application of water and further rolling		6	2.4	3.6
	PC15. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process		5	2	3
	PC16. Conduct application of prime coating using specified compounds by specified application methods		6	2.4	3.6
	PC17. Carry out necessary measurements using appropriate measuring instruments		6	2.4	3.6
	PC18. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the penetration of prime coat compound in to the laid base course layers		5	2	3
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N1009: Conduct laying of binding and wearing course of pavements</b>	PC1. Monitor preparation of asphalt mix by checking proportion of construction materials and heating arrangement if done manually	<b>100</b>	5	2	3
	PC2. Supervise and monitor asphalt spreading both by mechanically or manually		5	2	3
	PC3. Ensure that the hot asphalt is handled, placed and spread safely (if spread manually)		4	1.6	2.4
	PC4. Ensure uniformity in thickness and area of coverage by binding layer (asphalt mix)		5	2	3
	PC5. Monitor motion of paver and asphalt feeding to the paver at required interval		5	2	3
	PC6. Monitor and conduct compaction of binding course layer using roller of specified weight as per applicable/ standard work methodology		5	2	3
	PC7. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process		5	2	3
	PC8. Monitor application of tack coats to completed binding course surface or existing pavement surface by manual means or by equipments		5	2	3
	PC9. Conduct application and spreading of wearing course asphalt by mechanical means or manually		4	1.6	2.4
	PC10. Conduct final rolling till required profile and compactness is achieved by suitable roller		5	2	3
	PC11. Conduct surfacing of pavements as per specification using suitable surface materials		5	2	3
	PC12. Ensure level, slopes, curves are constructed as per drawing by conducting repetitive survey at required interval throughout the pavement laying process		5	2	3
	PC13. Ensure erection of barrication, safety signage and installation of proper illumination systems at workplace		5	2	3
	PC14. Check cleanliness of bed of pavement prior to lay reinforcement bars		4	1.6	2.4

	PC15. Check diameter, number, cleanliness and completion of tying of reinforcement bars as per instruction		4	1.6	2.4
	PC16. Check location of expansion joints by carrying out suitable measurements and ensure their location is as per relevant drawing		5	2	3
	PC17. Carry out marking and measurements to ensure location of shuttering arrangements, supporting arrangements, expansion joints and utility drainage structures are as per drawing/ schematics		5	2	3
	PC18. Monitor paving activity when paver is used for laying wearing course		5	2	3
	PC19. Monitor concreting work when wearing course is laid manually		5	2	3
	PC20. Ensure poured concrete is finished within the specified time limit as per specification		4	1.6	2.4
	PC21. Allocate labour for curing of concrete, organize curing arrangements and ensure curing is as per specification		5	2	3
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N1010: Conduct laying of pipes for drainage works/ service lines</b>	PC1. Ensure that the pipe segments are handled properly by labours or equipments and stored/stacked as per standard practise	<b>100</b>	10	4	6
	PC2. Measure pipe dimension and perform visual checks and confirm with relevant drawing		10	4	6
	PC3. Confirm that the level of the base of the pipe trench is in appropriate profile and centre line matches with specification		10	4	6
	PC4. Monitor lowering and placement of pipes in to their specified location by instructing equipment operators		10	4	6
	PC5. Carry out necessary measurements to check orientation and levels of laid pipes		10	4	6
	PC6. Conduct necessary adjustments to pipelines and provide supports to the assembly by using appropriate supporting system		10	4	6
	PC7. Ensure pipe segments are locked properly and joints are provided with specified sealants		10	4	6
	PC8. Ensure proper joining of pipelines with drainage structure like manholes, storm water cat pits etc.		10	4	6
	PC9. Offer pipelines for quality tests as per proposed quality plan		10	4	6
	PC10. Carry out remedial/ repairing works as per agreed work method		10	4	6
	<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>	
<b>CON/N8001: Work effectively in a team to deliver desired results at the workplace</b>	PC1. pass on work related information/ requirement clearly to the team members	<b>100</b>	10	4	6
	PC2. inform co-workers and superiors about any kind of deviations from work		10	4	6
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		20	8	12
	PC4. receive instructions clearly from superiors and respond effectively on the same		10	4	6
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	4	6
	PC6. seek clarification and advice as per the requirement and applicability		10	4	6
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		15	6	9

	PC8. work together with co-workers in a synchronized manner		15	6	9	
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>	
<b>CON/N9002: Manage workplace for safe and healthy work environment</b>	PC1. ensure proper housekeeping at workplace	<b>100</b>	5	2	3	
	PC2. implement safe handling , stacking methods at workplace / store		5	2	3	
	PC3. insure that health and safety plan is followed by all subordinates		5	2	3	
	PC4. identify any hazard in workplace and notify them to appropriate authority		5	2	3	
	PC5. ensure that all safety and protection installation are correctly placed & adequate		5	2	3	
	PC6. ensure safe access is available at work place for movement of workers & materials		5	2	3	
	PC7. ensure safe use of tools and tackles by the workmen as per applicability		5	2	3	
	PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability: <ul style="list-style-type: none"> <li>• Head Protection (Helmets)</li> <li>• Ear Protection</li> <li>• Fall Protection</li> <li>• Foot Protection</li> <li>• Face and Eye Protection,</li> <li>• Hand &amp;Body Protection</li> <li>• Respiratory Protection</li> </ul>		10	4	6	
	PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals.		5	2	3	
	PC10. ensure organizational policies and procedures are followed for health, safety and welfare, in relation to: <ul style="list-style-type: none"> <li>• methods of receiving or sourcing information</li> <li>• dealing with accidents and emergencies associated with the work and environment</li> <li>• reporting</li> <li>• stooping work</li> <li>• evacuation</li> <li>• fire risks and safe exit procedures</li> </ul>		10	4	6	
	PC11. follow procedures for accident recording and reporting as per organizational and statutory requirements		5	2	3	
	PC12. ensure effective adherence to response to emergency procedures / protocols		7.5	3	4.5	
	PC13. report any case of emergency / risks to the concern people at the construction site		7.5	3	4.5	
	PC14. report any perceived risk hazards to the superiors / concerned EHS		7.5	3	4.5	
	PC15. demonstrate the use of fire protection equipments for different type of fire hazard		7.5	3	4.5	
	PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies		5	2	3	
			<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>



## 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 946000 under Roads & Runway Construction 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.

### Foreman Roads & Runways QP CON/Q1003

Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
<p>Job holder performs works which require well developed skills and follows defined procedures of laying pavements both flexible and rigid. Works include allocation of resources, laying base course of pavement, laying surface course of pavement and laying pipelines for drainage works/ service lines which require clear choice of procedures in familiar context.</p>	<p>The jobholder is expected to know the specification of materials/ work drawings and work methods applicable to manual construction of pavements. Individual should know the sequence of pavements construction and laying of drainage works, function of complex paving equipments, applicable quality norms and tolerance limit as applicable to construction of pavement.</p> <p>The job holder should have knowledge of safe working procedures and work hazards related to construction of pavements</p>	<p>The job holder is expected to have a range of practical and cognitive skills such as organising and allocating resources to the construction works, conducting construction of base and surface layer of pavements and conducting laying of pipelines for drainage works. Individual should be able to check completed/ ongoing works and detect faults if any, troubleshoot and ensure that remedial measures have been taken to rectify the defects as per applicable quality norms and work method statements.</p> <p>The job holder should be able to implement safe working practices and ensure erection of safety signage's at workplace.</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 seeks inputs from superior and subordinates, plans activities in sequential manner and organise resources by coordinating with concerned authorities, as per agreed plan. The job holder carries out arithmetical and geometrical calculations relevant to road construction works, material requirement as and when necessary.</p>	<p>The job holder is responsible for own work (ref. Responsibilities in professional skills column) by confirming the quality of outcome and timely execution of the task assigned within specified limit of tolerance.</p> <p>Individual in the job role heads a crew of domain specific workers being responsible for outcome of works by subordinates.</p>	5
<b>Level 5</b>	<b>Level 5</b>	<b>Level 5</b>	<b>Level 5</b>	<b>Level 5</b>	

**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 Roads & Runway construction Occupation
2. QP CON/Q1003- Annexure 2

Annexure 1

Career Map

