

**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

**Address if different from above:**

*Same as above*

**Tel number(s):** +91-11-46584466

**E-mail address:** standards@csdcindia.org

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

1. Career Map of Pre Stressing Occupation - Annexure 1
2. QP CON/Q0801- Annexure 2

## QUALIFICATION FILE SUMMARY

<b>Qualification Title</b>	Assistant Technician Pre Stress - QP CON/Q0801		
<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>	Pre Stressing		
<b>Proposed level of the qualification in the NSQF.</b>	2		
<b>Anticipated volume of training/learning required to complete the qualification.</b>	350 hrs		
<b>Entry requirements / recommendations.</b>	Preferably 8th standard		
<b>Progression from the qualification.</b>	Technician - Pre Stress L-4		
<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/N0801: Identify, handle and store tools and construction materials for pre-stressing works	Mandatory	88	2
CON/N0802: Assist in uncoiling, cutting and placing of ducts and tendons	Mandatory	96	2
CON/N0803: Prepare grout mix and carry out pressure grouting	Mandatory	94	2
CON/N8001: Work effectively in a team to deliver results at a construction site	Mandatory	24	2
CON/N9001: Work according to personal health, safety and environment protocol at construction site	Mandatory	48	2

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/Q0801- 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

### Assistant Technician – Pre Stress

#### CON/Q0801

#### 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 50%. To pass the Qualification Pack, every trainee should score a minimum of 50% 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/N0801: Identify, handle and store tools and construction materials for pre-stressing works</b>	PC1. identify and select common materials/components used for pre-stressing works such as cement, additives, steel tendons, tendon ducts (sheathing pipes) etc.	<b>100</b>	7	1.5	5.5
	PC2. identify and select common hand/ power tools used for pipe and tendon laying operations such as hammer, spanner, drilling machine, circular power saw etc		7	1.5	5.5
	PC3. identify tendons to be used for pre-stressing works		8	1.5	6.5
	PC4. identify components of anchorage systems such as guides, bearing plates, grips & circlips, cones base on their size and specification		8	1.5	6.5
	PC5. identify different types of anchorage systems such as flat anchorage, blind end anchorage etc.		8	1.5	6.5
	PC6. identify different types of tendon ducts (sheathing) based on material (metallic or HDPE) and size		8	1.5	6.5

	PC7. identify spacers and supports which are required for placing and maintaining desired level of ducts		8	1.5	6.5
	PC8. identify blocks, inserts as applicable to the pre-stressing works		8	1.5	6.5
	PC9. shift and stack tendon coils at appropriate location as per specific storage norms		8	1.5	6.5
	PC10. shift and stack ducts, sleeves, anchorage components, inserts etc at specified locations as per specific storage norms		7	1.5	5.5
	PC11. shift and stack construction materials such as cement, sand, additives to appropriate storage locations as per instructions		7	1.5	5.5
	PC12. store tensioning jacks at appropriate location as per instruction		8	1.5	6.5
	PC13. erect protective covers to the stored materials and signage/ barricading as per instruction		8	2	6
		<b>Total</b>	<b>100</b>	<b>20</b>	<b>80</b>
<b>CON/N0802: Assist in uncoiling, cutting and placing of ducts and tendons</b>	PC1. prepare bed for laying uncoiled tendons/ strands as per instruction	<b>100</b>	6	1	5
	PC2. remove covers from tendon coils prior to de-coiling		6	1	5
	PC3. check tendons/ ducts visually for rust, moistures or any visual deviation in shape		6	1	5
	PC4. cut/ untie wires, protective systems provided with the tendon coils		7	1.5	5.5
	PC5. un-coil the tendon as per instruction and place on the suitably prepared base (free from soil/dust, smooth surfaced)		7	1.5	5.5
	PC6. place roller cradles to the suitable base for dragging tendons		7	1.5	5.5
	PC7. drag and place tendons on the specified base as per instruction		6	1	5
	PC8. hold the ducts/tendons in to position, firmly during cutting works		7	1.5	5.5
	PC9. make bundle by putting tendons of required number together if necessary		6	1	5
	PC10. apply suitable tying to the bundle of tendons for firm binding		7	1.5	5.5
	PC11. assist in placing of ducts through the marked supports as per instruction		7	1.5	5.5
	PC12. assist in pushing tendons/ bundles through the ducts		7	1.5	5.5
	PC13. apply anti moisture wraps to the exposed portion of the tendons before and after placing as per instruction		7	1.5	5.5
	PC14. fix grouting nozzle, vents to the duct as per instruction		7	1.5	5.5
	PC15. close the nozzle or open terminals of the duct by using suitable material		7	1.5	5.5
	<b>Total</b>	<b>100</b>	<b>20</b>	<b>80</b>	

<b>CON/N0803: Prepare grout mix and carry out pressure grouting</b>	PC1. collect suitable materials (such as cement, additives etc.) for grouting in mixing pan in required proportion	<b>100</b>	8	1.5	6.5
	PC2. add water to the mix in required proportion		8	1.5	6.5
	PC3. mix the grouting solution using appropriate hand/ power tools		8	1.5	6.5
	PC5. carry out visual checks to the grouting pump and its accessories to determine its usability		8	1.5	6.5
	PC6. install the grouting pump to the provided grouting nozzles, vents and ensure adequate water tightness		8	1.5	6.5
	PC7. fix grouting caps to the ducts, anchorages as per instructions		8	1.5	6.5
	PC8. operate hand operated grouting machine to pump grout mix to the tendon ducts		10	2.5	7.5
	PC9. continue grouting works as per instruction under specified gauge pressure		8	1.5	6.5
	PC10. read and analyze gauge reading to determine whether the pressure applied is as per specification or not		8	1.5	6.5
	PC11. clean grouting machine and its accessories after completion of grouting work		8	1.5	6.5
	PC12. cut grouting nozzles/ vents using appropriate cutting tools as per instruction		10	2.5	7.5
			<b>Total</b>	<b>100</b>	<b>20</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	2	8
	PC2. inform co-workers and superiors about any kind of deviations from work		5	1	4
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		5	1	4
	PC4. receive instructions clearly from superiors and respond effectively on the same		5	1	4
	PC5. communicate to team members/subordinates for appropriate work technique and method		5	1	4
	PC6. seek clarification and advice as per the requirement and applicability		10	2	8
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		30	6	24
	PC8. work together with co-workers in a synchronized manner		30	6	24
	<b>Total</b>	<b>100</b>	<b>20</b>	<b>80</b>	
<b>CON/N9001: Work according to personal health, safety and environment protocol at construction</b>	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority		5	1	4
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		5	1	4
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	2	8
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		5	1	4

<b>site</b>	PC5. identify near miss , unsafe condition and unsafe act	<b>100</b>	5	1	4
	PC6. use appropriate Personal Protective Equipment (PPE) as per work <ul style="list-style-type: none"> <li>• requirements including:</li> <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 and Body Protection</li> <li>• Respiratory Protection (if required)</li> </ul>		10	2	8
	PC7. handle all required tools, tackles , materials & equipment safely		5	1	4
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		5	1	4
	PC9. install and apply properly all safety equipment as instructed		15	3	12
	PC10.follow safety protocol and practices as laid down by site EHS department		15	3	12
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		10	2	8
	PC12.apply ergonomic principles wherever required		10	2	8
			<b>100</b>	<b>20</b>	<b>80</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 459000 under Pre Stressing 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.

<b>Assistant Technician – Pre Stress QP CON/Q0801</b>					
<b>Process required</b>	<b>Professional</b>	<b>Professional Skills</b>	<b>Core Skills</b>	<b>Responsibility</b>	<b>Level</b>



	Knowledge				
<p>The job holder performs task which are repetitive such as handling, storing of hand tools and construction materials used for pre-stressing work, assisting in placing of pre-stressing tendons, grouting of pre-stressing ducts as per instruction of seniors.</p> <p>These functions require little application of understanding and more of practice.</p>	<p>Job holder is expected to apply basic knowledge of operation of tools, equipments and materials for assisting in pre-stressing works. The job holder should have minimum understanding of standard working procedures related to uncoiling of strands, preparation of grout mix and grouting works.</p>	<p>The jobholder handles and uses hand tools and assist in pre-stressing works at construction sites by uncoiling tendons, holding tendons/ ducts for cutting, laying tendons and ducts close supervision as per expected quality outcome. The job holder should adhere to safety norms of the organisation while carrying out these works.</p> <p>The above functions require limited service skills in a limited context.</p>	<p>The jobholder applies basic knowledge of reading, writing and basic arithmetic to comprehend instructions orally and effectively at construction sites.</p> <p>The job holder adheres to environmental and safety guidelines and carries out proper storing and stacking practices while performing various tasks.</p>	<p>The Job holder is not directly responsible for the outcomes of the works as the works are carried out under instruction and close supervision of trade seniors</p>	2
<b>Level 2</b>	<b>Level 2</b>	<b>Level 2</b>	<b>Level 2</b>	<b>Level 2</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.

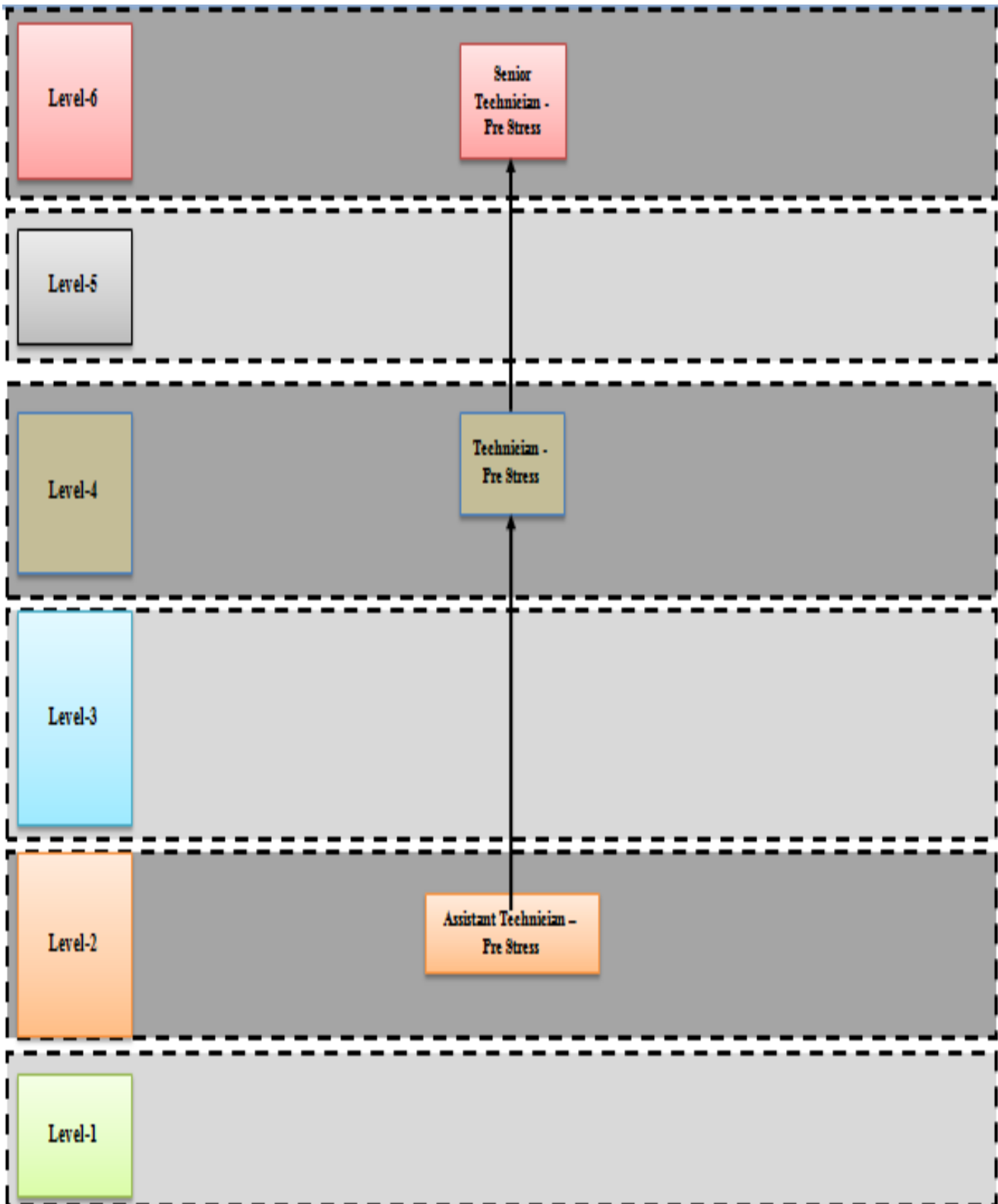
Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. Annexure 1
  - Overall Career map
  - Career map of Pre Stressing Occupation
2. QP CON/Q0801- Annexure 2

Annexure 1

Career Map



Annexure 2- QP CON/Q0801