

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 Fabrication Occupation - Annexure 1
2. QP CON/Q01206- Annexure 2

QUALIFICATION FILE SUMMARY

Qualification Title	Fabricator- QP CON/Q01206		
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	Fabrication		
Proposed level of the qualification in the NSQF.	4		
Anticipated volume of training/learning required to complete the qualification.	600 hrs		
Entry requirements / recommendations.	Preferably 12 th standard		
Progression from the qualification.	Foreman Fabrication- L-5		
Planned arrangements for RPL.	Work is under progress		
International Comparability	Comparable with UK Standard and 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/N1210: Inspect and check the fabrication materials and their preparation	Mandatory	100	4
CON/N1211: Oversee fabrication activities	Mandatory	300	4
CON/N0717: Erect structural steel assemblies at construction sites	Mandatory	128	4
CON/N8001: Work effectively in a team to deliver results at a construction site	Mandatory	24	4
CON/ N9001: Work according to personal health, safety and environment protocol at construction site	Mandatory	48	4

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/Q01206- 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

Fabricator

CON/Q 01206

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/N1210: Inspect and check the fabrication materials and their preparation	PC1. locate and identify correct sections for processing as per requirement	100	5	2	4
	PC2. check the stampings on the sections to confirm its dimensions		3	1	2
	PC3. confirm that quality inspection has been conducted for required materials		5	2	4
	PC4. check the materials for any physical damage like distortion, bending, cracks etc.		3	1	2
	PC5. notify superiors in case of any damaged materials		3	1	2

	PC6. ensure that material shifting is done safely and following standard practices		3	1	2
	PC7. inspect the surface of the material to identify the types of impurities on it		5	2	4
	PC8. obtain approval for employing different methods of cleaning form concerned authority		3	1	2
	PC9. identify the materials required for cleaning and estimate their quantities		5	2	4
	PC10. initiate indent procedures by informing the superior of the need for materials		5	2	4
	PC11. oversee the application of procedures like heating, chemical cleaning, scrubbing, water jet etc. as per requirements		5	2	4
	PC12. ensure that correct ID is marked on the section as per organisational norms		5	2	4
	PC13. oversee the measuring and mark of the sections as per provided technical details or instructions and standard procedures		5	2	4
	PC14. inspect instruments visually for their working conditions		5	2	4
	PC15. check the markings prior to commencing for the edge preparation		5	2	4
	PC16. identify the method for scalloping and bevelling such as Punch and Nibble Method, Peeling and Shearing Method or Milling and Routing Method as required		5	2	4
	PC17. identify the method for drilling as required		5	2	4
	PC18. identify the consumables, tools and equipments required for edge preparation, estimate their quantities and confirm the availability of the same		5	2	4
	PC19. confirm the orientation of sections before commencing the edge preparation activities		5	2	4
	PC20. confirm the compliance of prepared surface with technical details or instructions.		5	2	4
	PC21. ensure that safety norms are being followed by subordinates		5	2	4
	PC22. ensure that work is completed in proper sequence with required quality within specified time limit		5	2	4
		Total	100	30	70
CON/N1211: Oversee fabrication activities	PC1. identify the components of the assemblies as per drawings or instructions	100	3	1	2
	PC2. customize suitable jigs and fixtures for smooth execution of work		3	1	2
	PC3. inspect instruments, consumables, tools and equipment visually for their working conditions		3	1	2
	PC4. inspect materials before placing on fabrication platform for any distortions or deformities		3	1	2
	PC5. perform calculations for computation of dimensions from drawings if required		5	2	4
	PC6. ensure that allowance for shrinkage is maintained for joints that are to be welded		3	1	2

	PC7. measure the sections to identify the locations fixtures		3	1	2
	PC8. identify the locations for clamping the sections to the bed in order to restrict their movement during the process		5	2	4
	PC9. inspect the clamping and anchoring arrangements		3	1	2
	PC10. inspect the root gaps of the joints as required		3	1	2
	PC11. identify the locations for tack welding		3	1	2
	PC12. oversee cleaning of joints to remove any irregularities or impurities before further operations		5	2	4
	PC13. offer the prepared joints for inspections by superiors		3	1	2
	PC14. ensure that joints for connections of different components of assemblies are complying with the specifications and drawings		5	2	4
	PC15. inspect the proposed component/ assemblies for distortions, change in dimensions or other defects		5	2	4
	PC16. identify the most suitable method for correcting the defects encountered		3	1	2
	PC17. estimate the time required for competing the repair activity		3	1	2
	PC18. estimate roughly the quantity and type of manpower, materials, consumables, tools and equipment required for completing the repair work		5	2	4
	PC19. confirm the availability of required materials and tools		3	1	2
	PC20. acquire approval from superiors for carrying out repairs with estimated resources		3	1	2
	PC21. allocate work and work targets to subordinates as per requirement		5	2	4
	PC22. oversee the operations like grinding, welding, heating jacking etc. as per the requirement of identified process of corrections		5	2	4
	PC23. recheck the repaired work prior to submitting the same for quality inspections		4	1	3
	PC24. motivate the subordinates to participate in the tool box talks and other safety related activities organised at site		3	1	2
	PC25. ensure that the work is completed within estimated time without compromising the safety of workman		5	2	4
	PC26. ensure that the tools and equipment are correctly used, maintained and stored.		3	1	2
	PC27. find other defects caused by welding and their remedy		3	1	2
		Total	100	30	70
CON/N0717: Erect structural steel assemblies	PC1. check for proper access is available to the location of erection		2	0.5	1
	PC2. check for survey marks and reference points and		3	1	2

at construction sites	carry out necessary measurement to ascertain exact location of erection			
	PC3. check for availability of base plates or other level correction provisions are provided to the base of erection as per requirement	3	1	2
	PC4. check for provisions for bolting, welding, post-tensioning connections are available as per drawing	3	1	2
	PC5. ensure designed area of bearing in the platform or support is available for efficient erection of the components	3	1	2
	PC6. check the area of erection for desired accessibility of load lifting equipments, otherwise report to concerned authority	3	1	2
	PC7. check for hazardous situations at erection site, such as presence of live electrical cables, absence of proper barricading, excessive wind speed and report it to the concerned authority promptly as per requirement	3	1	2
	PC8. check availability of all materials and support equipment (identified by the seniors and required to proceed with the work) and report any shortages	3	1	2
	PC9. install shoring, bracing and guying materials as directed by the foreman/ supervisor or specified by erection drawings and details considering local conditions	5	1.5	3
	PC10. pull, push and hold suspended structural steel assemblies/ components approximately to their exact location by hand or suitable means during lowering of load	5	1.5	3
	PC11. communicate efficiently to the signalman or operator for precise movements required to place the object at accurate location.	3	1	2
	PC12. supervise and monitor activities by subordinates in order to guide the units to their location	5	1.5	3
	PC13. place the steel assemblies/ components to its accurate location efficiently and make required adjustments as per erection requirement	5	1.5	3
	PC14. ensure proper alignment of the erected steel assembly/ component by carrying out required measurement and checks using appropriate measuring tools and instruments.	5	1.5	3
	PC15. confirm orientation of the erected assembly/ component as per instruction or drawings	5	1.5	3
	PC16. ensure installation of temporary connections using appropriate tools prior to final positioning of precast units	7	2	5
	PC17. check temporary supports and connections to ensure stabilization of units in its position until final connections are made	3	1	2
	PC18. tighten bolted connections to the specified tolerance and torque using appropriate torque wrench wherever required	7	2	5

	PC19.check bolt tightness in case of units having slotted connections		7	2	5
	PC20.install special steel washers to ensure that the specified tension has been developed in the bolt		3	1	2
	PC21.check location of shims, bearing pads for their proper positioning		3	1	2
	PC22.install expansion bolts using prescribed installation procedures and quality control specifications		3	1	2
	PC23.report superior for completion or difficulties faced promptly and efficiently		3	1	2
	PC24.report concerned authority promptly in case of any safety violation		3	1	2
	PC25. supervise observation of applicable safety practices by subordinates at workplace		2	0.5	1
		Total	100	30	70
CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members		7	2	5
	PC2. inform co-workers and superiors about any kind of deviations from work		7	2	5
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		10	3	7
	PC4. receive instructions clearly from superiors and respond effectively on same		7	2	5
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	3	7
	PC6. seek clarification and advice as per requirement and applicability		7	2	5
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		27	8	19
	PC8. work together with co-workers in a synchronized manner		25	7.5	17.5
		Total	100	30	70
CON/N9001: Work according to personal health, safety and environment protocol at construction site	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority		7	2	5
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		7	2	5
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	100	10	3	7
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		7	2	5
	PC5. identify near miss , unsafe condition and unsafe act		7	2	5

PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: <ul style="list-style-type: none"> • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection • Respiratory Protection (if required) 		10	3	7
PC7. handle all required tools, tackles , materials & equipment safely		7	2	5
PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		7	2	5
PC9. install and apply properly all safety equipment as instructed		13	4	9
PC10. follow safety protocol and practices as laid down by site EHS department		13	4	9
PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		7	2	5
PC12. apply ergonomic principles wherever required		7	2	5
	Total	100	30	70

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 Fabrication 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. 14/08/2017

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.

Fabricator QP CON/Q01206					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
<p>The job holder is expected to perform works in routine, situation of clear choice such as identification and shifting of material required for fit up of assemblies, identification of tools and consumables required for fabrication works and roughly estimate their required quantity. It is also expected to undertake activities of surface preparation and joint preparation. These works are routine and repetitive in nature which involve following of laid down procedures.</p>	<p>Job holder is expected to have factual knowledge of various procedures involved in fabrication like bevelling, drilling, scalloping, grinding, cutting, jacking etc. It is also expected to possess factual knowledge of operation of various tools and equipment such as lifting gears, anchors, cutting and heating machines etc. used for fit-up and for erection activities. The job holder should also be aware of the safety rules and regulations to be observed in the fabrication yard and emergency procedures laid down at site</p>	<p>The job holder is expected to have skills that demonstrate quality awareness such as skills required for inspection of material before and during fabrication process, identifying locations for anchoring and tack welding etc. while carrying out routine and repetitive works. These skills are acquired over a period of time and find applications over a narrow range of activities that are repeated multiple times in a single project.</p>	<p>The job holder is expected to have command in at least one language for reading and writing. The job holder must be able to read fabrication drawings and interpret required technical details like orientation and placing of components, dimensions of required assemblies etc. from drawings. It is also expected to listen and clearly interpret work instructions and other communications and pass on the same to co-workers.</p> <p>The job holder should be able to apply arithmetic principles for computing material and manpower requirements and plan for self work</p>	<p>The job holder is responsible for ensuring the completion of own work in expected time and with required quality. The job holders is responsible for conducting simple checks at their own level and communicate any discrepancies to their seniors. The job holder is also responsible for offering the completed work for quality inspections and carrying out any repair works if required.</p>	4

Level 4	Level 4	Level 4	Level 4	Level 4	
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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 Fabrication Occupation
2. QP CON/Q 01206- Annexure 2

Annexure 1

Career Map



