

Revised Application Documentation: Version 5 /22 May, 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Construction Skill Development Council of India

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List of documents submitted in support of the Qualifications File

1. Career Map of Bar Bender and Steel Fixer- Annexure 1
2. QP CON/Q0203- Annexure 2

QUALIFICATION FILE SUMMARY

Qualification Title	Bar Bender & Steel Fixer-QP CON/Q0203		
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	Bar Bender & Steel Fixer		
Proposed level of the qualification in the NSQF.	3		
Anticipated volume of training/learning required to complete the qualification.	400 hours		
Entry requirements / recommendations.	5th Standard		
Progression from the qualification.	Reinforcement Fitter		
Planned arrangements for RPL.	Work is under progress		
International Comparability	Compared with UK NOS		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
CON/N0204:Read and understand routine drawings / sketches and Bar Bending Schedule	Mandatory	48	3
CON/N0205:Use hand and power tools for cutting and bending of reinforcement	Mandatory	48	3
CON/N0206:Prepare, fabricate, place and fix reinforcement for RCC structures	Mandatory	240	3
CON/N8001:Work effectively in a team to deliver desired results at the workplace	Mandatory	24	3
CON/N8002:Plan and organize work to meet expected outcomes	Mandatory	16	3
CON/N9001:Work according to personal health, safety and environment protocol at construction site	Mandatory	24	3

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/Q 0203- 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:

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

Bar Bender & Steel Fixer

CON/Q0203

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 theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in theory and practical for every NOS.
6. The trainee should score 100% marks individually in theory and practical for safety related NOS and performances criteria as and where applicable in each qualification pack.
7. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome
8. 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.
9. After the certain number of iteration the trainee is marked as fail, scoring zero marks for the procedure in the activity (practical's)
10. 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.

Assessable Outcome	Assessment criteria	Total Mark	Marks Allocation		
			Out Of	Theory	Practical Skills
CON/ N 0204: Read and understand routine drawings/sketches and Bar Bending Schedule	PC1. read and interpret basic detail from the sketches / drawings	100	10	2	8
	PC2. understand fixing/insertion sequence from the drawings		5	1	4
	PC3. find out the direction and position of rebars from the drawing		5	1	4
	PC4. calculate number of chairs, spacer bars requirement to be used		10	2	8
	PC5. find out the size and type of cover block to be used from the drawing		5	1	4
	PC6. calculate cutting length required for basic works from the sketches		10	2	8

	PC7. plan for cutting of rebars as per instructions		5	1	4
	PC8. read & interpret correct detail from Bar bending schedule including types, diameter, shape, cutting length, number of rebars		10	2	8
	PC9. calculate the cutting length of rebar from the provided BBS		15	3	12
	PC10. understand terms used in bar bending schedule		5	1	4
	PC11. estimate quantities of work from bar bending schedule		15	3	12
	PC12. plan for cutting of rebars as per instructions, considering minimum wastage and cutting length		5	1	4
	Total		100	20	80
CON/ N 0205: Use hand and power tools for cutting and bending of reinforcement	PC1. select hand tools/power tools for cutting rebars as per requirement / instruction		10	2	8
	PC2. select cutting blade for cutting of rebar as per requirement / instruction		5	1	4
	PC3. make use of measurement and marking tool to mark on rebars for cutting as per specified length in the BBS		10	2	8
	PC4. place rebars properly for cutting, as per requirement and instruction		5	1	4
	PC5. ensure adequate number of rods are placed for cutting to avoid damage to machine		5	1	4
	PC6. maintain correct body posture while cutting rebars manually or mechanically		10	2	8
	PC7. tag and stack rebars after cutting as per standards practices		5	1	4
	PC8. select hand/power tools for bending rebars with respect to the work		5	1	4
	PC9. select accessories for bending with respect to the diameter of rebar used & machine used		5	1	4
	PC10. mark on rebar and place & fix rods on correct position for bending		10	2	8
	PC11. maintain correct body posture while bending rebars manually or mechanically		5	1	4

	PC12. bend rebars as per the shape and dimensions given in the BBS, including hooks		10	2	8
	PC13. check for length, shape of rebars to ensure they are within the tolerance limit		10	2	8
	PC14. tag and stack rebars after bending as per standard practices		5	1	4
	Total		100	20	80
CON/ N 0206: Prepare, fabricate, place and fix reinforcement for R.C.C structures	PC1. read & understand relevant specification given in the sketches/drawing	100	5	1	4
	PC2. follow correct method for insertion/ fixing of rebars as per the types of structure		5	1	4
	PC3. select rebars for placement as per the drawing		5	1	4
	PC4. mark and place rebars, fabricate cage and fix on its position as per the drawing		10	2	8
	PC5. maintain uniform spacing between the bars, stirrups, link rod as per the drawing		10	2	8
	PC6. stagger the lap to avoid more than 50% of splicing		10	2	8
	PC7. place and fix mechanical coupler in case of higher diameter rebars used		5	1	4
	PC8. tie reinforcement with approved binding wires as per drawing with specified spacing		5	1	4
	PC9. ensure cover blocks and spacers are placed to maintain appropriate covers & spacing		5	1	4
	PC10. place and fix chairs at specified spacing to maintain correct thickness		10	2	8
	PC11. ensure that location and position of reinforcement and fixing ties to reinforcement are checked for accuracy		5	1	4
	PC12. follow sequence of tying as per method statement		10	2	8
	PC13. provide suitable stiffeners for lifting in case of prefabricated cage		5	1	4

	PC14. check quality of reinforcement work with reference to spacing, placement of rebars		5	1	4
	PC15. report to superior for checking of work executed and take corrective action if any error or issue is found		5	1	4
	Total		100	20	80
CON/ N 8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	100	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 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 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
	Total			100	20
CON/ N 8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	100	10	2	8
	PC2. plan activities as per schedule and sequence		10	2	8
	PC3. provide guidance to the subordinates to obtain desired outcome		10	2	8
	PC4. plan housekeeping activities prior to and post completion of work		10	2	8
	PC5. list and arrange required resources prior to commencement of work		10	2	8
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	2	8
	PC7. complete the work with allocated resources		10	2	8

	PC8. engage allocated manpower in an appropriate manner		10	2	8
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		5	1	4
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		5	1	4
	PC11. organize work output, materials used, tools and tackles deployed,		5	1	4
	PC12. processes adopted to be in line with the specified standards and instructions		5	1	4
		Total	100	20	80
CON/ N 9001: 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 authoritys	100	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
	PC5. identify near miss , unsafe condition and unsafe act		5	1	4
	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection • Respiratory Protection (if required)		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
Total	100	20	80

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 as per the attachment and their career paths as per Annexure 1, which have been derived through extensive industry interactions facilitated from 10 workshops and site visits conducted and interaction with 500+representatives from different organizations all over the country

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

The incremental Manpower Gap between 2008 and 2022 is 14,19,000 under Bar Bending 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?

The comments, feedback and suggestions were collected through interaction with industry during August'14 to Feb'15. The same will be compiled and justifiable changes will be incorporated in the next/updated version of the QP. This QP is set to be revised post 23rd March 2017.

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

Give details of the document(s) here:

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.

OTHER EVIDENCE OF LEVEL [This need only be filled in where evidence other than primary outcomes was used

Bar Bender & Steel Fixer- CON/Q0203					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
<p>The Bar Bender and Steel Fixer execute activities which include operating cutting and bending machines, fabricating, placing and fixing the re-bars in position. The above mentioned activities are very routine and repetitive in nature and the scope of the same is very limited in context of the occupation</p>	<p>The job holder is expected to demonstrate the knowledge of basics of the process involved in the bar bending work</p> <p>He is also expected to know and understand the sequence, position, orientation of the re-bars by correctly interpreting the specifications provided in the bar bending schedule and reinforcement drawings for correct fabrication (which includes cutting, bending, installing mechanical couplers etc.), placing and fixing (tying) of re-bars.</p> <p>The bar bender and fixer also utilises machines and hand tools which require certain amount of knowledge of the working principles and procedures of operation</p>	<p>The job holder is mostly engaged in the operations like cutting, bending, positioning and fixing the re-bars according to the drawings.</p> <p>The job holder is also expected read, understand and interpret technical details provided in the bar bending schedule and drawings</p> <p>The job holder is also expected to operate hand and power tools which have a limited area of application but the process of operation of which is repetitive in nature</p>	<p>The job holder requires basic knowledge of arithmetic and geometry to interpret the Bar bending schedule and drawings to identify cut lengths and bends of re-bars etc. and sufficient knowledge of local language for receiving and giving instructions and other information.</p> <p>job holder is also expected to read and follow safety guidelines, signage, and other general safety instructions given out during pep talks, tool box talks etc.</p>	<p>The workman is expected to perform assigned task under close supervision of a trade superior with higher skills and grater experience in execution of work who ensures quality and timely completion of the task.</p> <p>Moreover, he will be responsible for cutting, bending and forming re-bars in desired shape by employing desired tools and machineries such as cutting machine, bending machine etc. as per bar bending schedule, placing and fixing of re-bars as per drawings</p>	3
Level-3	Level-3	Level-4	Level-3	Level-3	

to allocate a level] (**Optional**)

Summary of other evidence (if used):

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 defines the career path.

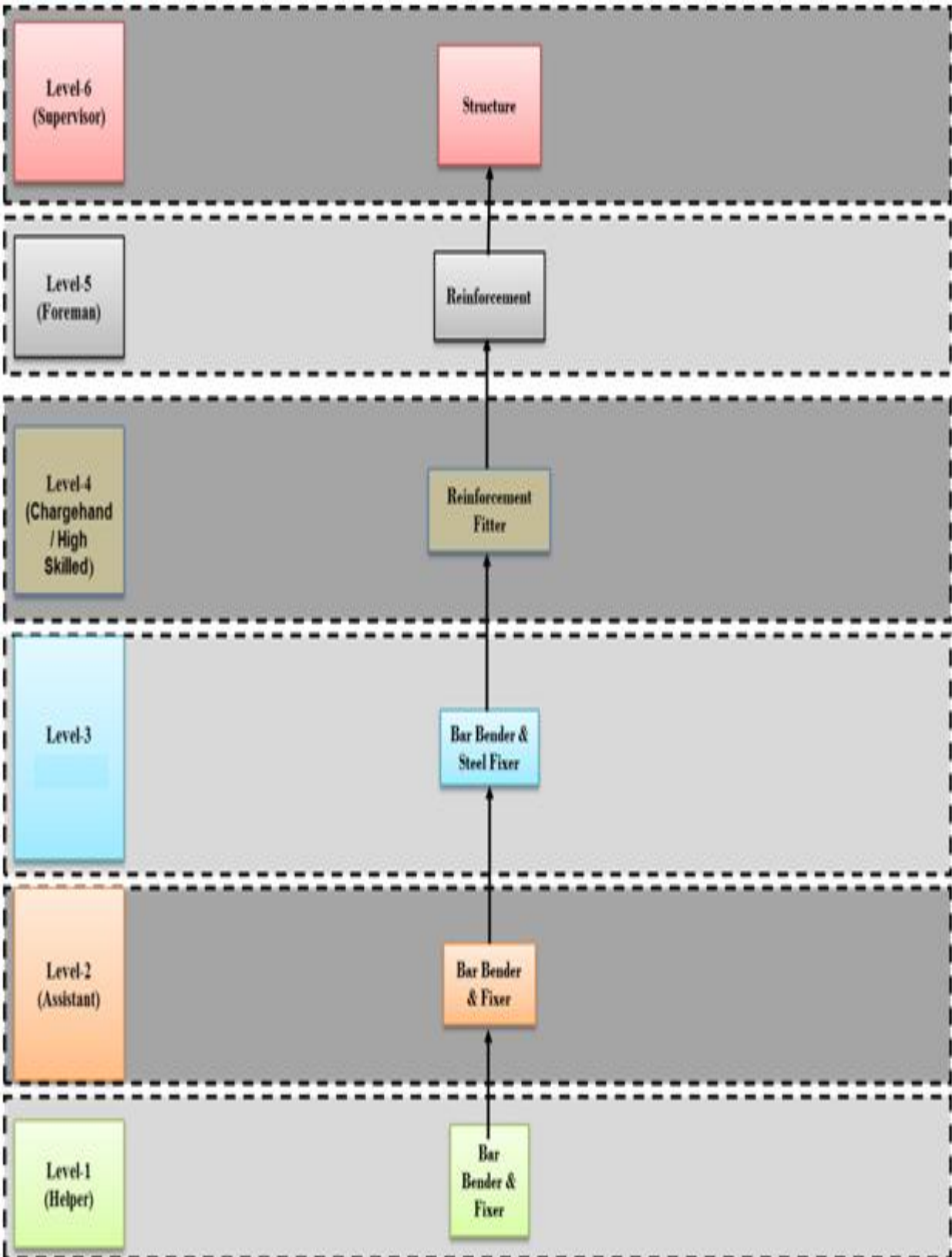
Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

1. Career Map of Bar Bender and Steel Fixer- Annexure 1
2. QP CON/Q 0202- Annexure 2

Annexure 1

Career Map



Annexure 2- QP CON/Q 0203 Attached