

## **NSQC QUALIFICATION FILE**

**Approved in 24<sup>th</sup> NSQC Meeting, 27<sup>th</sup> February 2020**

**NSDA Code**

**2020/CON /CSSDA/03771**

### **CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE**

**Chhattisgarh State Skill Development Authority, Chhattisgarh  
Old PHQ (Police Head Quarter), Near Raj Bhawan, Civil Line, Raipur -  
492001, Chhattisgarh  
Phone :0771-4264020, 0771-2424562, 0771-4099953  
Email: cssda.cg@gov.in**

#### **Name and address of submitting body:**

**Chhattisgarh State Skill Development Authority, Chhattisgarh  
Old PHQ (Police Head Quarter), Near Raj Bhawan, Civil Line, Raipur -  
492001, Chhattisgarh  
Phone :0771-4264020, 0771-2424562, 0771-4099953  
Email:cssda.cg@gov.in**

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

**Name: Meemo Prasad**

**Position in the organisation: Dy .CEO (Skill Training)**

**Address if different from above:**

**Tel number(s): 9109181905**

**E-mail address: cssda.cg@gov.in**

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

1. Tools and Equipment List (Annexure - A)
2. Course Curriculum (Annexure – B)
3. Lab Area Requirement (Annexure – C)
4. Trainer, Assessor and Trainee Qualification (Annexure – D)
5. Industry validation- Need of the course (Annexure – E)
6. Guideline for Training and Centre Accreditation (Annexure- F)

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### SUMMARY

1	<b>Qualification Title</b>	<b>Rain Water Harvester</b>
2	<b>Qualification Code, if any</b>	CG/RWH001
	<b>Sector</b>	- Construction
3	<b>NCO code and occupation</b>	- -
4	<b>Nature and purpose of the qualification (Please specify whether qualification is short term or long term)</b>	- Short term skill training
5	<b>Body/bodies which will award the qualification</b>	Chhattisgarh State Skill Development Authority, Chhattisgarh
6	<b>Body which will accredit providers to offer courses leading to the qualification</b>	Chhattisgarh State Skill Development Authority, Chhattisgarh
7	<b>Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)</b>	Yes
8	<b>Occupation(s) to which the qualification gives access</b>	Rain water Harvesting, Masonry work, plumbing work
9	<b>Job description of the occupation</b>	The job role will provide the understanding of construction of rainwater harvesting systems in the households as well as at the commercial spaces. It will cover the construction of Surface runoff harvesting as well as Roof top rainwater harvesting. The job role will enable to acquire the knowledge about plastering, bricklaying, flooring, installation of pipe work, fitting of pipes and joints, repair and maintenance activities in the context of masonry and plumbing. It also allow to understand the drawing of the construction area.
10	<b>Licensing requirements</b>	NA
11	<b>Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)</b>	NA
12	<b>Level of the qualification in the NSQF</b>	4

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13	Anticipated volume of training/learning required to complete the qualification	400 Hrs.
14	Indicative list of training tools required to deliver this qualification	As attached in Annexure – “A”
15	Entry requirements and/or recommendations and minimum age	Minimum 10 <sup>th</sup> Minimum age- 18 years
16	Progression from the qualification (Please show Professional and academic progression)	The job role enables to grow professionally from a worker to the contractor.
17	Arrangements for the Recognition of Prior learning (RPL)	RPL can be done as many people are already performing the activities under civil contractors.
18	International comparability	NA

	Where known (research evidence of be provided)		
19	Date of planned review of the qualification – 27 Feb 2022		
20	Formal structure of the qualification - As attached in annexure “B”		
	Mandatory components –		
	Title of component and identification code/NOSs/Learning outcomes	Estimated Size Level (learning hours)	Level
(i)			
	Sub Total (A)		
	Optional components		
	Title of component and identification code/NOSs/Learning outcomes	Estimated Size Level (learning hours)	Level
(ii)			
	Sub Total (B)		
	<u>Total (A+B)</u>		

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### SECTION 1 ASSESSMENT

21	<b>Body/Bodies which will carry out assessment: DGET or SSC recognized Assessment Bodies Empanelled with Chhattisgarh State Skill Development Authority</b>
22	<b>How will RPL assessment be managed and who will carry it out?</b> The Refresher training will be organised at the registered training for the particular course and the empanelled assessment agencies will carry out the assessment, upon successful completion of the assessment comprising of both theoretical and practical knowledge, the RPL candidate can be certified by Chhattisgarh State Skill Development Authority.
23	<b>Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.</b>  The assessment is carried out with the empanelled assessment agencies (currently 69 for different course) through their registered assessors. The assessors are qualified enough to judge the course assessment before their registration with the Chhattisgarh State Skill Development Authority. The assessors are to be TOA Qualified before going for the assessment. The assessment comprises of both theory and practical. The marks in both segment are weighted as average 30:70 respectively depending on the jobrole/course. The assessment agencies to perform the assessment are selected by the computer based method, which is random and cyclic as well hidden from manual interference. The allotment of each batch is shown to all the assessment agencies for the transparency in the work. Only the trainees securing 75% of attendance are allowed to appear in the assessment. Also, minimum two inspections from the District Authority under supervision of District Collector (Chairman of District Skill Development Authority) is mandatory prior to assessment. After the assessment the certificate is awarded within 7 days of Assessment.

Please attach most relevant and recent documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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### ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the the qualification” in the Summary.

#### 24. Assessment evidences

Title of Component: Rain

Water Harvesting

Outcomes to be assessed/NOSs to be assessed	Assessment criteria for the outcome		
	Max. Marks	Theory Marks	Practical Marks
The trainee			
- Should be able to identify, select and practically use the plumbing tools.	4	1.2	2.8
- Should be able to identify, select and know the use of plumbing materials and fittings.	4	1.2	2.8
- Should be well versed with the safety procedures with selection and use of safety tools and equipment.	6	1.8	4.2
- Should have knowledge of good housekeeping practices, Handling of materials and waste disposal.	5	1.5	3.5
- Should be able to fix Taps and Valves.	7	2.1	4.9
- Should be able to perform cutting, threading, bending and jointing of GI pipes on ceiling and walls.	7	2.1	4.9
- Should be able to perform cutting, bending and jointing of PVC pipes on floors, walls. & ceiling.	7	2.1	4.9
- Should be able to install water pumps and connect to supply lines.	6	1.8	4.2
- Should be able to construct civil structure. Perform bricklaying and plastering work	7	2.1	4.9
- Should be able study do site specific rainwater harvesting audit based on client's requirements.	7	2.1	4.9
- Should be able to calculate the quantity of possible rainwater collection in the given site.	7	2.1	4.9
- Should be able collect and study the rainfall pattern of the given region (minimum past 20 years of rainfall pattern)	10	3	7
- Should be able to prepare the cost effective and site specific rainwater harvesting system design plan.	10	3	7
- Should be able to assess the requirement of materials for a specific work.	6	1.8	4.2
- Should be able to calculate the quantum of work done	7	2.1	4.9
<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>

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### SECTION 2

#### 25. EVIDENCE OF LEVEL

Title/Name of Qualification/Component : Rain Water Harvesting			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level	NSQF level
<b>Process required</b>	<ul style="list-style-type: none"><li>- The trainee will be able to Identify of cost effective and best possible rainwater harvesting components and rainwater harvesting structures to The given site.</li><li>- The trainee will also be able to study The hydro geological aspects, already available water structures such as water storage tanks, bore well, open well, challenges if any , and The client requirement of The given site.</li></ul>	Work in Familier, predictable, routine, situation of clear choice.	4
<b>Professional knowledge</b>	<ul style="list-style-type: none"><li>- Working principles and methods of testing. Use of basic tools and bench vice. Safe handling of tools and fittings. Types of gland packing.</li><li>- Use of hand tools, Marking out for bending. Use of blowlamp and flame control. Uniform heating. Avoidance of burning. Bending on former.</li><li>- Use of hand tools, beveling reamer, applying heat with blow lamp. Preparation of Socket, Cleanliness. Application of solvent cement assembly methods.</li><li>- Working principles of water pump and foot valve. Methods of connection.</li><li>- Selection and preparing filter media to be used in sand bed filter Sponge traps method, First flush system, Silt trap, Sand bed filter, using commercially available rainwater filters.</li><li>- Calculating and designing rainwater storage structure in the available space, design should include all safety precaution, position of maintenance lids, air vent, rainwater inlet location.</li></ul>	Factual knowledge of field	4

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	<p>- Percolation pit, Bore- well recharge pit, gravity feed system, Recharge well, Barrel method, recharge trench, check dams, sub surface dykes, injection wells.</p>		
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NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level	NSQF level
Professional skill	<p><b>- Taps &amp; Valves</b> Given a selection of taps and valves and following demonstration by instructor the trainee will dismantle taps &amp; Valves, inspect packing glands and washers, replace packing gland and washers, adjust locking nuts ensuring no leaks when tested.</p> <p><b>- P.V.C. Pipe Bending</b> From a given sketch, calculate and measure length &amp; size of pipe, fittings, &amp; fixtures required, mark out and cut to size. Bend P.V.C. pipe to 5 times diameter of pipe:- Pipe diameter to be maintained no distortion. Free from abnormal marks.</p> <p><b>- P.V.C. Jointing</b> From a given sketch and with necessary tools join p.v.c. pipe with socket joints so that joint length is not less 1.5 time pipe diameter. Assemble exercise and secure with solvent cement to tolerance of <math>\pm 2\text{mm}</math> &amp; square to <math>\pm 1^\circ</math>.</p> <p><b>- Installing Water Pump, Connecting Supply Pipe</b> Position, level, fix and secure pump to pump base. Connect supply pipes, foot valves etc to ensure air tight connections. Test to meet by-laws in local authority.</p> <ul style="list-style-type: none"> <li>- Prepare a rainwater harvesting site audit report</li> <li>- Preparing the rainwater harvesting system design plan</li> <li>- Preparing site specify and need specific filter design and filter media</li> <li>- Understanding and preparing need specific rainwater storage structure</li> <li>- Preparing site specify and need specific artificial ground water recharge structure design.</li> </ul>	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts.	4

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NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relate to the NSQF level	NSQF level
<b>Core skill</b>	<p>The trainee</p> <ul style="list-style-type: none"><li>- should be able to communicate with the client. He/ She should possess the knowledge of time management.</li><li>- Should be able to make planning on paper.</li><li>- Should be able to work in the team.</li><li>- Should be able to maintain the good relationship with subordinates, peers and client.</li><li>- Should be able to maintain accounting and perform financial management.</li></ul>	Language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social political and natural environment.	4
<b>Responsibility</b>	<p>The trainee during the work will be responsible for his own work and for client's satisfaction.</p>	Responsibility for own work and learning.	4

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**SECTION 3 EVIDENCE OF NEED**

26	<p><b>Need of qualification:</b></p>	<p>Chhattisgarh receives an average rainfall of 1200 mm, but does not harvest more than 10 percent of the rooftop water for drinking purposes. As per Census 2011, the urban households in the Chhattisgarh State reported was 12,38,738 units. Therefore, more than 10,00,000 households have not installed the rain water harvesting system. Also, in urban areas 1 out of 5 households have their own borewell, being the reason for the shortage of ground water. During the summer season many of them get zero water. Thus it is quite important to construct the rain water harvesting systems especially in the urban areas. The Hon'ble Chief Minister of the State has announced that all the urban households to be equipped with rain water harvesting system and the departments of urban development and municipal corporation has to accomplish this. Thus, also the trained manpower in sufficient number is required to cope up with target of constructing more than 10,00,000 units of Rain Water Harvesting system in mission mode in the state alone. This target will pull the requirement of more than 16000 skilled manpower in the year (if two persons are engaged in the construction activity and get 10 jobs in the month). The construction will require of 1-2 days for the system. Therefore, with average market based wage of Rs. 500-800 per person per day, the manpower will earn around Rs. 10,000 to 16,000 per month at the early stage.</p>
	<p><b>Industry Relevance:</b></p>	<p>Same as above</p>
	<p><b>Usage of qualification:</b></p>	<p>Nil (New Course)</p>
	<p><b>Estimated uptake:</b></p>	<p>16000 youth will be trained in the course.</p>

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### SECTION 4

#### EVIDENCE OF PROGRESSION

30	<p>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? <i>Show the career map here to reflect the clear progression</i></p> <p><i>Step one - Skilled Worker</i> <i>Step two – Supervisor</i> <i>Step three - Contractor</i></p>
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