

## CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

West Bengal State Council of Technical & Vocational Education and Skill Development

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

Model Curriculum of **Junior Plumber (V 2.0)**



West Bengal State Council of Technical & Vocational Education

and Skill Development

Karigari Bhavan (5<sup>th</sup> Floor), Plot-B/7, Action Area-III

**New Town, Kolkata-700160**

# NSQF QUALIFICATION FILE GUIDANCE

## SUMMARY

1	Qualification Title	<b>Junior Plumber (V 2.0)</b>
2	Qualification Code, if any	Old Code: STC - PLM/NSQF -2018/ 801 New Code: STC - PLM/NSQF -2022/ 3002
3	NCO code and occupation	N.A
4	Nature and purpose of the qualification (Please specify whether the qualification is short term or long term)	<b>Short Term Certificate Course.</b> To train the trainees to become self-employed i.e. entrepreneurs or wage employed under MSME
5	Body/bodies which will award the qualification	West Bengal State Council of Technical & Vocational Education and Skill Development.
6	Body which will accredit provider to offer leading to the qualification	Recognition Committee under the West Bengal State Council of Technical & Vocational Education and Skill Development.
7	Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)	Board of assessment, examination and certification under the West Bengal State Council of Technical & Vocational Education and Skill Development.
8	Occupation(s) to which the qualification gives access	After completion of the course the trainees shall be qualified for following job role: <b>Junior Plumber</b>
9	Job description of the occupation	Installing, maintaining and repairing plumbing systems and fixtures. Fitting and repairing various household appliances. Cutting and assembling pipes, tubes, fittings, and fixtures. Inspecting and testing plumbing systems for safety and functionality.
10	Licensing requirements	N.A.
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)	N.A.
12	Level of the qualification in the NSQF	LEVEL 3
13	Anticipated volume of training / learning required to complete the training.	600 hours (including 150 hours of Apprenticeship and 60 Hrs of Employability Skill)
14	Indicative list of training tools required to deliver this qualification	Attached Annexure-II
15	Entry requirements and/or recommendations and minimum age	Class 10 Pass OR Class 9 pass and pursuing continuous regular schooling, OR Class 8 Pass with 2 year experience, OR Class 8 Pass NTC/NAC (2 yrs)in Plumber Trade OR previous relevant qualification of NSQF Level 2.5 with 1 yr experience
16	Progression from the qualification (Please show professional and academic progression)	Jr. Plumber --- Plumber Technician ----- Plumber Contractor
17	Arrangements for the Recognition of Prior learning (RPL)	RPL will consists of four stages: Counselling – To inform advice and guide the candidates regarding RPL. Pre-Assessment – To assess the present

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		competencies of the candidates and identify the gap between the complete qualification and current competencies. Bridge Training – To skill the candidates for bridging the gap. Final Assessment & Certification – To assess the candidate for comprehensive qualification and certify.
18	<b>International comparability where known (research evidence to be provided)</b>	N.A.
19	<b>Date of planned review of the qualification.</b>	Every 3 years (from the date of NSQC approval)
<b>20. Formal structure of the qualification</b>		

<b>Title of component and identification code.</b>	<b>Mandatory/ Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
1. Apply safe working Practices	Mandatory	30 Hrs. (T- 10+P- 20)	3
2. Identify Hand tools and fittings.	Mandatory	30 Hrs. (T- 10+P- 20)	3
3. Identify various types of taps, valves.	Mandatory	30 Hrs. (T- 10+P- 20)	3
4. Understand diagrams and drawings used for plumbing and sanitary works	Mandatory	30 Hrs. (T- 10+P- 20)	3
5. Identify different layout of plumbing and sanitary pipe networks.	Mandatory	30 Hrs. (T- 10+P- 20)	3
6. Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair	Mandatory	60 Hrs. (T- 20+P- 40)	3
7. Install the pipe connection to Septic Tanks and well type toilet.	Mandatory	60 Hrs. (T- 20+P- 40)	3
8. Construct septic tank, soak well, well type's toilets as per drawing.	Mandatory	60 Hrs. (T- 10+P- 50)	3
9. Perform gas welding in metal pipes.	Mandatory	60 Hrs. (T- 10+P- 50)	3
10. Work in a real job situation with special emphasis on basic safety and hazards in this domain.	Mandatory	150Hrs.(T-0+P-150)	3
11. Employability Skills (60 Hrs)	Mandatory	60 Hrs.	3
		600 Hrs.	

<b>Title of component and identification code.</b>	<b>Mandatory /Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
<p><b><u>I. Theory</u></b>                      (a) Theory component of the course is to develop relevant basic technical information &amp; knowledge about plumbing and sanitary works. Awareness of tools and equipment required to complete the job. They will apply the welding and plumbing technique in the work. They will also work on construction of septic tank, soak wells and well type toilets, installation of plumbing components accessories and fixture.</p>	Mandatory	110	3
<p><b><u>II. Practical</u></b>                      (b) Institutional component of Practical training of the course is to impart relevant basic technical skills to perform plumbing and laying of sanitary pipe, domestic water supply , sanitary accessories installation, installation of tube wells, deep tube wells, domestic water supply, using various tools &amp; instruments maintaining basic safety.</p>	Mandatory	280	3
<p>(c) OJT component of Practical training of the course is to develop competency in the real job situation with special emphasis on basic safety and hazards.</p>	Mandatory	150	3
<p><b><u>III. Employability Skills</u></b>                      Employability Skills component of the course is to impart Soft skills which include Communication Skills, Digital skill, Financial, Entrepreneurship etc.</p>	Mandatory	60	3
<b>Total (I+II+III)</b>		<b>600</b>	

# NSQF QUALIFICATION FILE GUIDANCE

## SECTION 1

### ASSESSMENT

21	<p><b>Body/Bodies which will carry out assessment:</b></p> <p>Board of assessment, examination and certification under West Bengal State Council of Technical &amp; Vocational Education &amp; Skill Development constituted under the ACT XXVI of 2013 under Department of Technical Education, Training &amp; Skill Development, Govt. of West Bengal.</p>
22	<p><b>How will RPL assessment be managed and who will carry it out?</b></p> <p>RPL arrangement will be for existing uncertified experienced workforce and will consist of four stages</p> <p>Counseling- To inform, advise and guide the candidates regarding RPL Pre-Assessment- To assess the current competencies of the candidates and identifying the gap between the full qualification and current competencies. Bridge Training- To train the candidates for bridging the gap. Final assessment &amp; Certification- To assess the candidate for full qualification and certify.</p> <p>RPL assessment will be managed by WBSCT&amp;VE&amp;SD</p>
23	<p><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></p> <p>Assessment will be carried out by Board of assessment, examination and certification under West Bengal State Council of Technical &amp; Vocational Education &amp; Skill Development, under Department of Technical Education, Training &amp; Skill Development, Govt. of West Bengal.</p> <p>The Council has all necessary infrastructure and a pool of qualified Assessors/ Examiners to carry out such assessments. Presently the Council is conducting all examinations for all courses which include Diploma Courses, NQR enlisted Short Term Courses, NSQF compliant Short Term Courses, Vocational Courses under Higher Secondary (Vocational) level &amp; all other short-term Courses in the state of West Bengal. Council also conducts all State Level Entrance tests like JEXPO for admission to Diploma Courses in Polytechnics, VOCLET for lateral entry to Diploma Courses in Polytechnics and CET (Common Entrance Test) for admission to NCVT courses in ITIs. This Council has been recognized as an assessing body for NSQF aligned courses by NCVET under MSDE, GOI.</p> <p>Council conducts Training of Assessors (TOA) for prospective Assessors for NSQF compliant courses through certified Master Trainers / experts.</p>

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## 24. ASSESSMENT EVIDENCE

### Title of Component:

Outcomes to be assessed	Assessment criteria for the outcome
1. Apply safe working Practices	<p>(1.1) Maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements according to site policy.</p> <p>(1.2) Recognize any unsafe situations according to site policy, and assess his report accordingly.</p> <p>(1.3) Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.</p> <p>(1.4) Report/record the in the event of accident or sickness of any staff, including accident details according to site accident/injury procedures</p> <p>(1.6) Demonstrate Personal Productive Equipment (PPE) and use the same as per related working environment.</p> <p>(1.7) Demonstrate basic first aid &amp; CPR and use them under different circumstances.</p>
2. Identify Hand tools and fittings.	<p>(2.1) Identify various types of tools and select for proper uses.</p> <p>(2.2) Identify Hand Tools for Plumber work.</p> <p>(2.3) Identify the pipe fittings.</p> <p>(2.5) Identify tools for pipe fittings.</p> <p>(2.6) Prepare the Pipe line circuit with fittings as per drawing.</p> <p>(2.7) Identify different Sanitary and Plumbing fittings by showing them.</p> <p>(2.8) Demonstrate care of hand tools.</p>
3. Identify various types of taps, valves.	<p>(3.1) Recognize different taps and valves by showing them.</p> <p>(3.2) Suggest valves /taps as per their location in pipelines.</p> <p>(3.3) Identify tools for fitting the valves</p> <p>(3.4) Identify the problems with the taps and valves and resolve it.</p>
4. Understand diagrams and drawings used for plumbing and sanitary works	<p>(4.1) Familiarize with an existing sanitary and plumbing drawing.</p> <p>(4.2) Identify different symbol used in the drawings of sanitary and plumbing works</p> <p>(4.3) Draw a free hand sketch of a sanitary /plumbing pipeline network.</p> <p>(4.4) Label the free hand sketch drawn .</p>

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<p>5. Identify different layout of plumbing and sanitary pipe networks.</p>	<p>(5.1) Recognize the type of pipe network used in an existing building.            (5.2) Recognize an existing Sanitary network            (5.3) Identify the leakage of the sanitary pipe.            (5.4) Remove and replace the pipe with exact specification and test it.</p>
<p>6. Detect damage in taps, pipelines, sanitary pipe, plumbing pipe and suggest rectification /repair</p>	<p>(6.1) Identify fault in a damaged pipe network.            (6.2) Select the proper tap for replacement.            (6.3) Check the performance after repair.            (6.4) Calculate the actual cost.            (6.5) Install pipeline in building wall or underground.            (6.6) Demonstrate pipe joints.            (6.7) Test if there is any leakage in pipelines.</p>
<p>7. Install the pipe connection to Septic Tanks and well type toilet.</p>	<p>(7.1) Plan and identify the tools and equipments required for the given job.            (7.2) Draw the rough diagram before given connection.            show the pipe connection in a dummy septic tank and soak pit.            (7.3) Identify and name different components of septic tank.            (7.4) Install the pipe connection as per drawing.            (7.5) Test the connection for any leakage.            (7.6) Observed safety precaution for the given septic tanks and suggest precautionary safety measures.</p>
<p>8. Construct septic tank, soak well, well types toilets as per drawing.</p>	<p>(8.1) Plan and identify tools and equipments required for desired purpose.            (8.2) Select raw materials required            (8.3) Construct the septic tank, soak well, well types toilets as per drawing with proper safety precautions.            (8.4) Measure all dimensions as per drawing.</p>
<p>9. Perform gas welding in metal pipes.</p>	<p>(9.1) List the tools and equipment required for welding in metal pipes.            (9.2) Select the iron pipes to join.            (9.3) Join two iron pipes by gas welding.            (9.4) Identify defects in welding and their prevention.</p>
<p>10. Work in a real job situation with special emphasis on basic safety and hazards in this domain.</p>	<p>(10.1) Check the report prepared for this component of training of the course</p>

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	and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace for 150 Hours.)
11. Employability Skills (60 Hrs)	As per NCVET guided course module
<b>Means of assessment</b>  i) Theory component 200 marks ii) Practical Test & Viva voce for Practical Component 800 marks	
<b>Pass/Fail</b> Passing criteria is based on marks obtained in Formative and Summative Assessment taken together as mentioned in Annexure No-1 i) Minimum Marks to pass Theory component- 60% ii) Minimum Marks to pass practical component- 70% iii) Minimum attendance required to appear in the final examination- 75%	



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### SECTION 2

#### EVIDENCE OF LEVEL

Title/Name of qualification/component: Junior Plumber		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	Job holder will be able to install or repair plumbing work or sanitary work while maintaining occupational health & safety parameters.	Job holder will understand and comply with safety practices while undertaking works in basic plumbing work. The nature of work involved is repetitive and routine.	Level 3
Professional knowledge	Job holder will be able to <ul style="list-style-type: none"> <li>● Understand sketches of plumbing network</li> <li>● Use different tools &amp; equipments</li> <li>● Understand a given drawing for plumbing work and sanitation work.</li> </ul>	Job holder will understand the processes in relation with plumbing work. It is also expected that the job holder will be able to comprehend with basic of Plumbing works .	Level 3
Professional skill	The user/individual will know and understand how to: <ul style="list-style-type: none"> <li>● Make pipe connection for plumbing / sanitation work.</li> <li>● decide defects in welding</li> <li>● decide whether workplace is safe for working and also relevant task is not creating hazardous condition</li> </ul>	The job holder will demonstrate use of various tools and materials, different types of layout and also ensure proper piping connection. He/ she will be also able to demonstrate the work involved. The range of application of practical skill is narrow and repetitive.	Level 3
Core skill	The job holder will be able to <ul style="list-style-type: none"> <li>● read at least two languages, preferably in the local language of the site and basic English</li> <li>● read and interpret safety sign boards, signage, tags etc. provided at workplace</li> <li>● speak in at least one language, preferably in one of the local</li> </ul>	The job holder will be able to communicate clearly, both in writing and orally, with co-workers, supervisors and customers. He will be able to use basic arithmetic calculations for his work and use basic banking services both on professional and personal level.	Level 3

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Title/Name of qualification/component: Junior Plumber		Level: 3	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>languages of the site</p> <ul style="list-style-type: none"> <li>• listen and interpret instructions / communication by co-workers</li> <li>• listen and follow instructions given by supervisor</li> <li>• orally and effectively communicate with team members</li> <li>• engage in basic financial and banking transactions</li> <li>• Understand principles of time management and entrepreneurship</li> </ul>		
Responsibility	<p>The job holder will work under the close supervision of supervisor and he will be responsible for</p> <ul style="list-style-type: none"> <li>• Understanding safety compliance while engaging in fixing of pipes and fittings.</li> <li>• Preventing any loss of human life by use of appropriate precaution and safety devices</li> <li>• Sanitation work in the rural area for any structures and fix all types of taps, fittings, toilet arrangement, septic tank installation and drainage work</li> </ul>	<p>Job holder is required to carry out functions while job holder is doing the tasks independently, with supervision in certain risky jobs.</p>	Level 3

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### **SECTION 3**

#### **EVIDENCE OF NEED**

##### **26. What evidence is there that the qualification is needed?**

Govt. of West Bengal offers 50 numbers of courses under 20 groups in Higher Secondary Vocational category and trains approximately 40,000 beneficiaries per year through its 1200 (approx.) approved VTCs since last 15 years. Assessment and certification are done by West Bengal State Council of Technical & Vocational Education & Skill Development, under Department of Technical Education, Training & Skill Development, Govt. of West Bengal for these courses. Hi-value crop cultivator is one of these courses which can be successfully conducted by Govt. of West Bengal.

India is one of the important and promising producers in agricultural as well as horticultural crops. In horticultural crops there is a scope for increasing the productivity and profitability. With the decreasing land holding capacity and cultivable land, it is time to think now to produce more and to profit more per unit area or space, here hi-tech horticulture is the pre-requisite. With Proper green house management, utilization of quality planting material and exact micro-irrigation systems along with ultra modern cultivation technology, this goal of more income per unit area can be achieved.

**Industry Relevance** - West Bengal State Council of Technical & Vocational Education and Skill Development has proposed this course after receiving multiple feedback from industries regarding need of the qualification.

##### **27. What is the estimated uptake of this qualification and what is the basis of this estimate?**

There has been significant opportunities for the particular course as the course is operational for more than 10 years.

##### **28. What steps were taken to ensure that the qualification does not duplicate already existing or planned qualifications in the NSQF?**

This qualification is being conducted under the West Bengal State Council of Technical & Vocational Education & Skill Development, under Department of Technical Education, Training & Skill Development, Govt. of West Bengal since the academic year 2005 (modified in 2015) in vocational training centres spread all over West Bengal for Class VII pass youths. In the state of West Bengal, the Council is an affiliating and awarding body for this qualification. Thus, there is no other existing or planned similar qualification in the state aligned with NSQF.

##### **29. 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 council has three well defined sub-committees namely Board of Studies and Skilling, Board of assessment, examination and certification and Recognition Committee. These committees monitor and review the progress of all qualifications under its purview on a regular basis.

This qualification will be reviewed and revised at an interval of three years on the outcome of the trainees, placement, self-employment data and feedback from industries/ employers.

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### SECTION 4

#### EVIDENCE OF PROGRESSION

**30. 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?**

The trainee on completion of the course does not immediately qualify to work as an independent authority. The trainee has to gain at least 2 years of field experience, should be of 21 years of age or older and should necessarily an Indian citizen, when he will become eligible. Thereafter, he becomes eligible to work as an independent. From there, he can become either an employee of an organization or become self-employed. In case of employment under an employer, he can progress to various level-wise designations, based on either experience or on obtaining subsequent qualifications. This is as shown below.

