

**NSDA Reference**

*To be added by NSDA*

**QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY**

**Name and address of submitting body:**

**IPSC**

**Indian Plumbing Skills Council**

**B-168/169, Ground Floor,**

**Okhla Indl. Area Phase 1,**

**DDA Sheds, New Delhi-110020.**

**T:+91 11 41513580,41400556**

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

**Name: Harpreet Singh**

**Position in the organisation: Vice President**

**Address if different from above**

**Tel number(s) M:- 9555377055 T:+91 11 41513580,41400556**

**e-mail address: harpreet@ipssc.in**

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

- 1 Composition of the Technical Committee
- 2 RFP for development of Occupational Standards
- 3 Selection process of the Consultants to develop Occupational Standards
- 4 Occupational Map
- 5 Draft MoU with Industry
- 6 Qualification Pack annexure-I
- 7 Career map annexure –II
- 8 List of assessment bodies-Annexure -III

## 1. QUALIFICATION FILE SUMMARY

<b>Qualification Title</b>	Groundwater Engineer/Q0202		
<b>Body/bodies which will assess candidates</b>	IPSC		
<b>Body/bodies which will award the certificate for the qualification.</b>	IPSC		
<b>Body which will accredit providers to offer the qualification.</b>	IPSC		
<b>Occupation(s) to which the qualification gives access</b>	A Plumbing Draftsman is responsible for preparation of drawings related to plumbing projects as per instructions.		
<b>Proposed level of the qualification in the NSQF.</b>	Level-7		
<b>Anticipated volume of training/learning required to complete the qualification.</b>	480Hrs		
<b>Entry requirements / recommendations.</b>	Diploma in Civil / Mech. Engg.		
<b>Progression from the qualification.</b>	Level -8 Public Health Systems Design Engineer, Wastewater Systems Design Engineer		
<b>Planned arrangements for RPL.</b>	RPL arrangements and policies are under development		
<b>International Comparability</b>	The Technical parts of the NOSs are comparable to Canadian, British and Australian standards. However Numeracy, literacy and basic science levels are lower to match with the existing Indian conditions. Apart from this the Qualification pack, as per the NSDC policy for our country, is for a job role and on a trade or occupation. Following the same there cannot be qualification pack comparability.		
<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>

1.	PSC/ N 0215 (Design of groundwater extracting and recharging systems)	<b>Mandatory</b>	<b>384 Hrs</b>	<b>7</b>
2.	PSC/ N 0211 (Work effectively with colleagues)	<b>Mandatory</b>	<b>40 Hrs</b>	<b>Common across level 3,5,6-8</b>
3.	PSC/ N 0212 (Keep the working environment healthy, safe and secure)	<b>Mandatory</b>	<b>56 Hrs</b>	<b>Common across level 3,5,6-8</b>

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:

## **SECTION 1**

### **ASSESSMENT**

#### **Name of assessment body:**

If there will be more than one assessment body for this qualification, give details.

[http://ipsc.in/training\\_assesment\\_partners.php](http://ipsc.in/training_assesment_partners.php) -Annexure -III

#### **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.**

RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack.

The process of RPL assessment is under development.

#### **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:**

#### **PURPOSE OF ASSESSMENT**

The purpose of the assessment is to identify if the learner has completely comprehended the technicalities of the job role of a Plumbing Draftsman and thus, allows learners to progress to the LEVEL 7 and above. It also builds up the personal attributes of the learner to undertake work independently, become a good team player by being a competent listener, apt at taking instructions, and overall develop into a result oriented and positive person comfortable with laborious task of the trade.

#### **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 centre (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every

student at each examination/training centre based on this criteria

5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS

6. 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

**SCALING METHODS** Pass mark: 70

Unit Knowledge learning outcome	Approximate coverage	Valuation
Knowledge of Designing of groundwater extracting and recharging systems)	Assignments Practical Field work	30%
Knowledge of various techniques for investigation, calculation, and testing to be used in preparation of a detailed system design	Assignments and Practical Field work	20%
Knowledge of detailed tube well and similar system design indicating type, length and size of pipes and related accessories	Assignments and Practical Field work	20
Understanding of receiving work instructions and discussing the project/design with seniors	Assignments and Practical Field work	10%
Knowledge of time management for the work	Assignments and Practical Field work	10%
Understanding of various safety measures and equipments	Assignments and Practical Field work	10%

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

The assessment comprises of a combination three assessment techniques i.e.

- 1 Practical Assessment
- 2 Viva/ Structured Interview
- 3 Written Assessments

### 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**

**Groundwater Engineer**

**202**

**IPSC**

**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
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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% in every NOS.
6. 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

				<b>Marks Allocation</b>	
<b>Assessable outcome</b>	<b>Assessable criteria</b>	<b>Total Mark (300 MARKS)</b>	<b>Out Of</b>	<b>Theor y</b>	<b>Skills Practic al</b>
1. PSC/ N 0201 (Preparation of preliminary layout for design of plumbing systems)	PC1. Draw plans based upon written and verbal descriptions from various designing departments	<b>100</b>	25	15	10
	PC2. Set up drawing templates for AutoCAD, Revit and other relevant design software		25	15	10
	PC3. Draw2d/3D models in AutoCAD, Revit and other relevant design software		25	10	15
	PC4. Provide dimension and elevation drawings for site engineer, pre-fabrication units, etc		25	10	15
		<b>Total</b>	100	50	50

2. PSC/N 0211 (work effectively with colleagues)	Pc1. Coordinate all work instructions and discuss with various concerned departments	<b>100</b>	5	2	3
	PC2. Communicate and coordinate task status, repairs and maintenance of tools and equipment as required with various departments		5	3	2
	PC3. Manage any potential hazards and expected process disruptions		10	5	5
	PC4. Get the work reviewed and handover completed task to the concerned department		10	5	5
	PC5. Receive feedback from the concerned department		10	5	5
	PC6. Report any anticipated reasons for delays TO THE ORGANIZATION		10	5	5
	PC7. Work as a team with colleagues and share work as per the work load and skills		10	5	5
	PC8. Work with colleagues of other teams		10	5	5
	PC9. Communicate and discuss work flow related difficulties in order to find solution with mutual agreement		10	5	5
	PC10. Put team over individual goals		10	5	5
	PC11. Resolve conflicts		10	5	5
		<b>Total</b>	100	50	50
3.PSC/N0212Keep the working environment healthy, safe and	Pc1. Comply with organization's current health, safety and security	<b>100</b>	10	5	5

secure	policies and procedures			
	PC2. Communicate any identified breaches in health, safety, and security policies and procedures to the designated person	15	7	8
	PC3. Identify and remove any hazards that can be dealt safely, competently and within the limits of individual's authority	15	8	7
	PC4. Communicate hazards to the relevant person in line with organizational procedures and warn other people who may be affected	15	7	8
	PC5. Follow organization's emergency procedures promptly, calmly, and efficiently	15	8	7
	PC6. Identify and recommend opportunities for improving health, safety, and security to the designated person	15	7	8
	PC7. Complete any health and safety records legibly and accurately	15	8	7
	<b>Total</b>	<b>100</b>	<b>50</b>	<b>50</b>



## SECTION 2

### **EVIDENCE OF NEED**

<p><b>What evidence is there that the qualification is needed?</b></p> <ul style="list-style-type: none"><li>• 70 Job roles identified by the Industry including our Governing Board.</li><li>• 30-32 job roles were scrutinized and given the project to IMaCS</li><li>• 25 job roles finalized after industry interaction during the workshops and individual meetings.</li></ul>
<p><b>What is the estimated uptake of this qualification and what is the basis of this estimate?</b></p> <p>25 Job roles were identified after understanding the market need and demand. Our Agency met with around 200 industry people while developing these Qualification Packs. Individual interactions, workshops, Group Discussion were done to identify market demand and need.</p>
<p><b>What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?</b></p> <p>As mentioned, initially 70 job roles were identified but only 25 job roles finally identified to avoid overlapping. Job roles were approved on the basis of career progression of an Individual.</p>
<p><b>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?</b></p> <ul style="list-style-type: none"><li>• Detail Sustainability Plan available</li></ul>

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**

Level of qualification: -5

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>Groundwater Engineer/Q0202</b>					
<b>Process required</b>	<b>Professional Knowledge</b>	<b>Professional Skills</b>	<b>Core Skills</b>	<b>Responsibility</b>	<b>Level</b>
<p>Job holder at this level will have working experience and learning of specialised theoretical and practical skills to command the team.</p> <p>Job holder is expected to inspect and evaluate the site for the proposed system</p> <p>It is expected from the jobholder to prepare preliminary layout of the system as per required.</p> <p>It is also expected from the jobholder to prepare detailed bore well system design as per layout and in adherence to</p>	<p>Job holder is expected to have wide range of knowledge related to designing of groundwater extracting and recharging systems, comprehensive knowledge of various materials used in a tube well/boring system and their market rates.</p> <p>It is also expected from the job holder to apply factual knowledge gained from working experience while ensure and checking faulty designs,</p>	<p>Job holder is expected to have wide range of cognitive and practical skills for solving the various issues and problems related to the designing of tube well/boring system considering all design parameters, adhere to relevant codes and regulations while preparing the design, produce output in form of manual drawings and sketches, ensure accuracy and scale in the</p>	<p>The workman at this level (i.e. 7) is expected to provide instructions to subordinates both orally, written and through some hand sketches and drawings, co-ordinate with co-workers, supervise subordinates, prioritize and complete necessary tasks in a fast-paced environment. He/she is also expected to employ arithmetical and geometric skills, carry out linear measurements and conversion in order to execute task as per specifications.</p>	<p>The job holder is responsible for output of the team and further development of the team. The person will be confirming the quality and timely execution of the task within specified limit of tolerance while acting as a head of a crew of domain specific workers. As the nature of work includes designing and inspection of ground water extracting systems and preparation of detailed bore well systems,. The jobholder</p>	7

<p>the applicable laws and regulations. Considering above said points ore, it is justified to keep job holder at level 7</p>	<p>applicable system designing norms and environmental regulations, it is justified to keep job holder at level 7</p>	<p>manual sketches, do a preliminary review of drawings and layouts for compliance of norms,. The job holder is expected to use knowledge for solving the issues in the team and at the work place so therefore Job holder is kept at Level 7</p>	<p>Considering the above nature of work, the jobholder should have considerable numeric skills, communication skills, inter-personnel skills, hence can be placed at level-7 Ex. The person will do designing of groundwater extracting and recharging systems</p>	<p>is responsible for the final outcome of the work with his technical expertise.It is expected from him/her to have knowledge of latest materials techniques and principals along with codes and regulations applicable in designing, hence can be placed at level 7</p>	
<b>Level 7</b>	<b>Level 7</b>	<b>Level 7</b>	<b>Level 7</b>	<b>Level 7</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):

**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?**

**Horizontal and vertical mobility options have been articulated.**

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

Give details of the document(s) here:

