QUALIFICATION FILE

<Fire Systems Supervisor>

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☒ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 5

Submitted By:

< Water Management and Plumbing Skill Council>

< Address: 606 & 609, Tower-C, DLF Prime Towers, Phase I, Okhla, New Delhi, 110020, Tel: 011 – 4151 3580>

Section 1: Basic Details

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">Fire Systems Supervisor</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">Water Management and Plumbing</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options
☐OEM</td><td>NQR Code & version of existing/previous qualification:

NQR Code:
Version of Existing qualification:</td><td>Qualification Name of existing/previous version: Fire Systems Supervisor, v. 1.0</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name
(Wherever applicable)</td><td colspan="2"></td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code &Version
(Will be issued after NSQC approval)</td><td>QG-05-PL-00612-2023-V1-WMPS</td><td>6. NCrF/NSQF Level: 5</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/ Any Other
(Wherever applicable specify multiple entry/exits also & provide details in annexure)</td><td colspan="2">Certificate, Advance Diploma and UG</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">A Fire Systems Supervisor is responsible for installation, testing, commissioning and maintenance of fire protection systems. The individual also suggests modifications in the work requirements in line with local conditions and supervises the workforce to complete the tasks as per established standards.</td></tr>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1</td><td>Pursuing 2nd year of UG (Civil Engineering)</td><td></td></tr>
<tr><td>2</td><td>Pursuing 2nd year of UG (Mechanical Engineering)</td><td></td></tr>
<tr><td>3</td><td>12th grade pass with 1-year NTC/ CITS/NAC</td><td>1 Year of experience Relevant</td></tr>
<tr><td>4</td><td>12th grade Pass</td><td>2 Years of Relevant Experience</td></tr>
<tr><td>5</td><td>Previous relevant Qualification of NSQF Level 4.5 (Fire Inspector)</td><td>1.5 Years of experience Relevant</td></tr>
</table>
b. Age: <21 Years ></td></tr>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>18</td><td>11. Common Cost Norm Category (I/II/III)
(wherever applicable): I</td></tr>
</table>

<table>
<tr><td>12.</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td>NA</td></tr>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>☒Offline ☐Online ☐Blended
<table>
<tr><th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>OJT Recommended (Hours)</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline)</td><td>180</td><td>300</td><td>60</td><td></td><td>540</td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td>NCO-2015/3119.1000</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td>Fire Safety Officer, Fire Protection Designer</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☒Yes ☐ No
If “Yes”, specify applicable type of Disability: Locomotor Disability</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td>Encouraging the participation of women in Fire Systems Supervising requires a multi-faceted approach that addresses the various factors that discourage women from pursuing this field. Here are some strategies that can be implemented to encourage more women to become Fire Systems Supervisors:

a) Outreach and Awareness Campaigns: Organize outreach and awareness campaigns to promote Fire Systems Supervisor as a career option for women. This can be done through targeted marketing campaigns, outreach to schools and universities, and partnerships with community organizations.
b) Mentorship and Networking Opportunities: Create mentorship and networking opportunities for women who are interested in Fire Systems Supervisor. This can include connecting them with women who are already working in the field, providing access to industry events and conferences, and facilitating networking opportunities with other professionals.
c) Flexible Working Arrangements: Offer flexible working arrangements that can accommodate the needs of women who may have caregiving responsibilities. This can include part-time work options, job-sharing, and flexible schedules.</td></tr>
</table>

		d) Safe and Inclusive Work Environments: Create safe and inclusive work environments that are free from discrimination and harassment. This can be done through the implementation of policies and procedures that promote diversity, equity, and inclusion in the workplace. **e) Training and Professional Development: Provide training and professional development opportunities that can help women build the skills and knowledge needed to succeed in Fire Systems Supervisor. This can include apprenticeships, on-the-job training, and continuing education programs.** **By implementing these strategies, it is possible to encourage more women to pursue careers in Fire Systems Supervisor and create a more diverse and inclusive workforce in this field.**	
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	**☒ Yes ☐ No** **(PSC/N0160)**	
21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools ☐ Yes ☒No Colleges ☒ Yes ☐ No**	
22.	**Name and Contact Details of Submitting / Awarding Body SPOC** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name: Water Management and Plumbing Skill Council** **Email: abhisek@wmpsc.in** **Contact No.: 7008580229** **Website: www.wmpsc.in**	
23.	**Final Approval Date by NSQC: 23/06/2023**	**24. Validity Duration: 3 years**	**25. Next Review Date: 22/06/2023**

Section 2: Module Summary

NOS/s of Qualifications
(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th**.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.** -Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					Weightage (%) *(if applicable)*
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	
1.	Plan and prepare for installation and maintenance of fire protection systems	PSC/N0158	Core	5	5	30	100	20		150	30	40	20	10	100	25
2.	Install and commission fire protection systems	PSC/N0159	Core	5	5	30	100	20		150	30	40	20	10	100	25
3.	Ensure effective repair and maintenance of fire protection systems	PSC/N0160	Core	5	4.5	25	90	20		135	30	40	20	10	100	25
4.	Apply health and safety practices at the workplace	PSC/N0136	Non-Core	5	0.5	5	10			15	30	60		10	100	15
5	Employability Skills (90 Hours)	DGT/VSQ/N0103	Non-Core	5	3	90				90	20	30			50	10
Duration (in Hours) / Total Marks					**18**	**180**	**300**	**60**		**540**	**140**	**210**	**60**	**40**	**450**	**100**

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.																
2.																
Duration (in Hours) / Total Marks																

Assessment - Minimum Qualifying Percentage

*Please specify **any one** of the following:*

Minimum Pass Percentage – Aggregate at qualification level: 70 % *(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Minimum Pass Percentage – NOS/Module-wise: ___% *(Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	M.Tech in Civil / Mechanical Engineering with 1 year of Industry Experience and 1 year of Training Experience OR

		B.Tech in Civil / Mechanical Engineering with 3 years of Industry Experience and 1 year of Training Experience OR Diploma in Civil / Mechanical Engineering with 4 years of Industry Experience and 1 year of Training Experience
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	M.Tech in Civil / Mechanical Engineering with 3 years of Industry Experience and 2 years of Training Experience OR B.Tech in Civil / Mechanical Engineering with 5 years of Industry Experience and 2 years of Training Experience
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	He/She has to undergo fresh Training of Trainers

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	M.Tech in Civil / Mechanical Engineering with 1 year of Industry Experience and 1 year of Training Experience OR B.Tech in Civil / Mechanical Engineering with 3 years of Industry Experience and 1 year of Training Experience OR Diploma in Civil / Mechanical Engineering with 4 years of Industry Experience and 1 year of Training Experience
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma in Civil / Mechanical Engineering with 1 Year of Relevant Experience OR Graduation in Any Stream with 1 Year of Relevant Experience OR

		12th Grade Pass in any stream with 3 years of Relevant Experience
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	M.Tech in Civil / Mechanical Engineering with 3 years of Industry Experience and 2 years of Training Experience OR B.Tech in Civil / Mechanical Engineering with 5 years of Industry Experience and 2 years of Training Experience
4.	**Assessment Mode** *(Specify the assessment mode)*	Both Digitized and Non-digitized Mode
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☒ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No):** Yes
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** Yes
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes
4.	**Number of Industry validation provided:** 20
5.	**Estimated nos. of persons to be trained and employed:** 7,500
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments: *Yes*** If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	Attached
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Attached

3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Attached
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Attached
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	Not Required
7.	**Annexure:** Acronym and Glossary *(Optional)*	
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Attached
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Attached
10.	**Supporting Document:** Occupational Map *(Mandatory)*	Attached
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	Attached
12.	**Any other document you wish to submit:**	

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	**Identify requirements** • identify the objectives and considerations for the work from stakeholder's inputs and studying the contract and drawings • compile relevant information from the client briefing and technical inputs from concerned authorities	Fire Systems Supervisor during the job works in familiar, predictable, routine, situation of clear choice.	5

	• survey the site to identify impact of local conditions on project strategy and design • prepare design basis report (DBR) for facilitating the project design • communicate the inputs obtained through site surveys to the designers and management for modifications • provide technical support to architects, design engineers and experts to strengthen the designs **Plan and schedule work activities** • extract relevant information from plumbing project design and specifications • plan a strategy for completion of plumbing project within the given budgets and constraints • prepare estimations, costing and budget reports for the project • schedule various tasks to be performed for the plumbing project • share plan and schedule with the management team and obtain their approval **Ensure availability of required resources** • perform measurements and hydraulic calculations to identify the required equipment and materials for the plumbing project • estimate manpower requirements based on the work plan • determine adjustments required in timelines, costs and quantity of materials in line with the proposed design • identify potential suppliers for sourcing manpower, equipment and material at the work site • negotiate and agree a price with vendors • order for tools, equipment and supplies as required for the project • facilitate contracting for manpower supply as per requirement • follow up with vendors for material delivery as per standard operating procedure (SOP)		

	• ensure adequate stock of equipment and supplies in the stockroom • verify contractors' and suppliers' bills for manpower, equipment and materials **Initiate the project** • prepare the site for the project including setting boundaries and signage, clearing waste and hazards, leveling the area, etc. • organize necessary facilities at project site such as water, electricity, toolrooms, washrooms, etc. • prepare site diaries and work allocation sheets for the project undertaken • prepare detailed work plans for the execution team • allocate work and provide instructions to the team • handover all the project documents to the supervisor prior to starting the work • ensure that quality assurance/quality control (QA)/(QC) measures are implemented for various activities/items as per plan **Inspect the work progress** • track the work under progress at various sites as per calculations, layouts and schematic mark-ups defined • record the status of work being performed at the worksite • check plans, drawings and quantities for accuracy of calculations relevant to the project • check whether the piping installations and fixtures are in adherence to project drawing and specifications • ensure that the materials being used, and work performed is in accordance with the required specifications • check the material consumption to identify wastage • check if proper documentation for materials stocking and consumption is being maintained at the work site		

	• compare the progress of work with the milestones defined in the project plan • check whether the tools, equipment and materials are stored as per manufacturer's instructions • inspect the quality of products that are being received at the work site • perform quality inspection, joint measurement and billing for running account (RA) of an ongoing project • inspect all the installed systems for proper functioning as per delivery standards • check that the scrap generated during work activities is disposed in a timely and industry prescribed manner • check if the workforce adheres to health and safety (HSE) norms at the work site • maintaining logs related to day-to-day execution and planning of work and resources • report work progress and requirements to the project managers, project engineers, contractors etc. **Take corrective action** • evaluate the reason of delay and discrepancies from plan • consult with team for possible remedies • provide suggestions for technical problems witnessed anytime during plumbing tasks • modify work plan to incorporate corrective actions • provide instructions to team about the changes in plan **Liaise with stakeholders** • liaise with project consultants, subcontractors, supervisors, planners, quantity surveyors and general workforce for resolving routine problems • liaise with the procurement department to ensure that there are adequate resources present at the worksite		

	• inform clients and their representatives about the work progress and deviations from plan and their reasons • liaise with the local authority to ensure compliance with local regulations and by-laws **Commission the project** • test the installed systems for proper functioning • test the installed systems for leakages and/or damages • check the pressure and characteristic of water flow in just installed system • identify and rectify any anomalies which arise during commissioning exercise • coordinate with civil team, finishing team, mechanical electrical plumbing (MEP) design team, consultant, and contractor for the clearances • train owner's staff in equipment maintenance and systems operation • guide the plumbing team in conducting the handover exercise • prepare the handover documentation and project completion report **Follow safety measures to avoid accidents** • identify risks and hazards at the workplace • wear personal protective equipment (PPE) as per the type of plumbing work • place protective barricades and signages around the pits and trenches • isolate the plumbing fittings and fixtures from electrical wiring to avoid accidents • adhere to organizational procedures for reporting hazards and incidents to relevant authorities • establish ventilation before entering underground work areas • work safely in and around trenches, elevated places and confined areas • ensure tools and hazardous materials are not left unattended		

	• ensure good housekeeping in order to prevent hazards e.g. fire • dispose waste materials and used PPE according to regulations and codes of practice **Follow hygiene and sanitation practices** • follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing etc. • clean and disinfect work area, materials/supplies, equipment etc. before and after use. • report hygiene and sanitation issues to appropriate authority **Use tools, equipment and materials safely** • check that the tools, equipment and materials are in good condition and as per industry standards before use • use power tools and machinery that are grounded • replace or repair split or loose tools before use • store and transport various plumbing materials safely **Deal with emergencies** • follow workplace emergency and evacuation procedures • use a fire extinguisher correctly • use safe methods to free a person from electrocution • administer appropriate first aid (such as CPR etc.) to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc. **Ensure team preparedness for the tasks** • create a work plan and schedule for the workers as per work priorities, availability of manpower, equipment and weather conditions • assign work taking full account of each team member's abilities • train the workers		

	Monitor completion of work as per expected standards • monitor project activities to ensure adherence to work instructions, schedules, budgets and targets • identify causes for any lag in performance as well as possible solutions to bridge the gap • provide feedback on individual work performance to each team member for improvement in work quality • implement measures to improve team effectiveness e.g., deadlines, regular breaks, standing meetings, proactiveness, minimum interruptions etc. • ensure accurate and effective delivery of written communication (reports, updates etc.) to stakeholders within agreed timelines **Handle queries, concerns and welfare of workers** • investigate work-related complaints to verify problems and record responses relevant to the project • perform administrative duties, such as authorizing leaves, processing time sheets as per standard operating procedure (SOP) • review contracts or work assignments to determine service, machine, or workforce requirements for jobs • deal with conflicts among the team members in a professional manner • prepare and maintain required records, such as work activity or personnel reports **Respect diversity** • use respectful verbal, non-verbal and written communication that is gender, disability, age and culturally sensitive • transact with all people without any personal bias based on gender, disability, caste, religion, color, sexual orientation or culture and in accordance with their legal rights • recognize indicators of harassment and discrimination based on gender, disability,		

	caste, religion, colour, sexual orientation or culture at workplace and follow organizational policy for reporting the same. **Material and energy audit of workplace** • check for compliance with applicable environmental, waste management and disposal regulations • collect information about usage of different materials including water • collect information about pattern of electricity consumption and fuel consumption • prepare material and energy audit reports **Material conservation and use of environment friendly materials** • analyze material audit report to decipher excessive consumption of material and water • identify materials which can be replaced by environment friendly substitutes • identify processes where material utilization can be optimized • plan the introduction of revised processes and environment friendly materials in a phased manner • plan and implement ways to conserve and re-use water • monitor material and water conservation processes **Energy/electricity conservation practices** • analyze energy/electricity audit report to identify high energy/electricity consumption areas • identify processes where energy/electricity utilization can be optimized • identify possibilities of using renewable energy and environment friendly fuels • plan the implementation of energy efficient systems in a phased manner • ensure electrical equipment and appliances are switched off when not in use **Effective waste management/recycling practices**		

	• identify recyclable, non-recyclable and hazardous waste • ensure recyclable, non-recyclable and hazardous waste are segregated as per SOP • ensure proper mechanism is followed while collecting and disposing recyclable and nonrecyclable waste • ensure proper mechanism is followed while collecting and disposing hazardous waste as per SOP • ensure reuse and recycling of waste wherever applicable • ensure proper mechanism is followed for treatment of wastewater in the unit		
Professional and Technical Skills/ Expertise/ Professional Knowledge	• standards, policies, and procedures followed in the company relevant to the role • organization's departments and hierarchy • individual's role in the workflow • workplace hazard reporting and hazard handling procedures • workplace safety requirements • standards applicable to the piping installation in plumbing • types and purpose of drawings, blue prints and plans associated with plumbing projects and relevant information available in them • information available in contractual documents and drawings and client briefings relevant to planning for plumbing projects • techniques to interpret project documents and technical inputs • Mechanical, Electrical and Plumbing (MEP) activities being performed for plumbing projects and their sequence • purpose and process of site survey for project strategy and design site survey checklist • purpose and key elements of design basis report (DBR) for facilitating the project design • project planning essentials • information in plumbing project design and specifications relevant to planning a project	The Fire Systems Supervisor should possess the practical knowledge of his field.	5

	• various constraints that can impact the planning for a plumbing project • steps involved in preparing estimations, costing and budget reports • tools for planning and scheduling • importance of obtaining approval from authority before finalising plan • piping material specifications (PMS) used as per the plumbing design • various symbols, dimensions, terminology and key features of plans • techniques to evaluate the existing design of buildings • importance of drawing observations from project document • considerations for plumbing project design drawings and their approvals • factors that help to calculate the timelines, costs involved, and quantity of materials required • measurements and hydraulic calculations for resource planning for plumbing and fire protection systems • importance of accuracy in identification of measurements and calculations with respect to plumbing work • tools and equipment to be used for various tasks as per required specifications • different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings (valves, clamps, elbows, etc.) and fixtures (showers, taps, basins, etc.) • optimal solutions for technical problems faced during plumbing tasks • importance of timely delivery of materials to the site • key considerations verify suppliers' and contractors' bills • how to estimate manpower requirements based on the work plan • procurement and contracting needs of project and site • how to identify potential suppliers and contractors		

	• requisitioning process for ordering tools, equipment and supplies • stockroom processes • importance of verify contractors' and suppliers' bills • purpose of work schedules, work plans, charts, work bulletins and memos and the work-related information that can be obtained from them • plumbing site facilities • quality assurance/quality control (QA) (QC) measures at a plumbing site • QA QC duties as per Municipal Accounting Manual (MAM) • workplace safety requirements and the health and safety hazards at the workplace • organizational quality procedures, processes and delivery standards • risk and impact of not following defined procedures/work instructions • organizational process for performance evaluation • standards applicable to the piping installation in plumbing • types and purpose of drawings and plans associated with plumbing and their functions • tools, equipment and materials relative to drawings/specifications • techniques related to cutting, bending and joining of fittings and fixtures • key considerations to evaluate the blueprints as given by the design team • importance of accuracy in identification of plumbing site preparation activities • measurements and calculations with respect to plumbing work • various symbols, dimensions, terminology and key features of plans • how to check site plans, drawings and quantities for accuracy of calculations • key considerations to review the specifications of the materials • methods to analyse material consumption and ensure minimal wastage		

	• various types of defects such as leakages, improper alignment, etc. • various test used to check for proper installation and functioning of plumbing systems • common problems that cause delay and discrepancies in a plumbing project fulfilment and possible corrective measures and work arounds • process of documentation to be followed for the plumbing project • techniques to dispose the scrap generated during plumbing tasks • storage procedure for materials and equipment relevant to the project • quality inspection process • joint measurement process • procedure to be followed to inspect buildings for plumbing requirements • the commissioning process required pressure, flow and temperature of water at different outlets • typical issues or faults that can arise during commissioning exercise • methodology to rectify the issues that can arise during commissioning exercise • NEPA, NBC standards for plumbing • health and safety norms applicable at the workplace • possible causes of risk, hazard or accident in the workplace • organizational procedures for upkeep of tools and plumbing materials, health and safety • location of all the general health and safety equipment in the workplace • meaning of hazards and risks • hazardous environment encountered during work such as underground areas, elevated areas, areas with water and electricity supply, presence of biological waste, under construction sites etc. • work practices and precautions to control and prevent risks, hazards and accidents		

	• importance of each personal protective equipment used such as eye protection mask, hard hats, gloves, apron, rubber boots etc. • tools and plumbing equipment as per latest industry standards • preventative and remedial actions to be taken in case of exposure to toxic materials • specific safety and health related problems faced in domestic, commercial and institutional setups • various causes of fire and precautionary activities to prevent the fire accident • techniques of using the different fire extinguishers • rescue techniques applied during a fire hazard • various types of safety signs and meaning • appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, minor burns, poisoning, eye injuries etc. • potential injuries and ill health associated with incorrect handing of tools and equipment • legislation, standards, policies, and procedures followed in the company relevant to employment, behavior and performance conditions reporting structure, inter-dependent functions, lines and procedures in the work area • relevant people and their responsibilities within the work area • escalation matrix and procedures for reporting work and employment related issues • sexual harassment of women at workplace (Prevention, Prohibition and Redressal) Act, 2013 • organizational policy for harassment and discrimination based on gender, disability, caste, religion, color, sexual orientation or culture • internal and external stakeholders at the workplace and their communication requirements • importance of effective communication in the workplace and the impact of poor		

	communication on the employee, the employer and the customer • various components of effective communication such as tone and pitch • advantages and disadvantages of various modes of communication • importance of teamwork in organizational and individual success • goal setting • group dynamics and processes • measures to improve workplace productivity\ • importance of ethics and discipline for professional success • common reasons for interpersonal conflict • importance of developing effective working relationships for professional success • how to deal with grievances and problems appropriately and effectively • importance and ways of managing interpersonal conflict effectively • laws, acts and provisions defined for PwD by the statutory bodies • government and private schemes and benefit available for PwD • basic gender concepts such as gender power relations, gender roles, access and control, gender sensitivity, gender equity and equality • gender, disability, cultural and age-related biases, stereotyping and its impact • actions and consequences of gendered behavior • types of harassment and discrimination based on gender, disability, caste, religion or culture that occurs at a typical workplace and how to recognize it • types of unacceptable behavior • legislative requirements and organizations procedures for waste management and disposal consumptions • renewable energy sources which can be deployed at the workplace • methods of optimum utilization of waste and best practices for waste disposal		

	• methods of treating wastewater and recycling of water		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• read and write brief notes in local language/Hindi/English • read and write common, fire equipment, building construction and plumbing symbols • fill in relevant forms for material requisitioning, reporting, employment and other purposes • comprehend required quantities, names of materials, equipment and supplies and related forms and formats • provide verbal instructions and information about work related matters in local language or Hindi or English • state information, doubts and concerns about work related matters with clarity and in a professional manner • evaluate adequacy of information available for sound decision making • co-ordinate with a range of team members and activities • plan work activities and communicate to others whose work plans and timelines may be affected • identify the objectives, concerns and priorities of the client • identify array of solutions that addresses needs of the client • apply problem solving skills • seek official and authorized sources of help and guidance to resolve problems that cannot be solved at one's level of authority • diagnose the problem for root cause, identify the possible solution(s) and take up an optimum /best practical solution(s) • use logical thinking and make judgments • use reasoning skills and intuition to detect any potential problems which could arise	Fire Systems Supervisor should have practical skills which are routine and repetitive and should use quality concepts.	5
Broad Learning Outcomes/Core Skill	• read and write brief notes in local language/Hindi/English • read and write common, fire equipment, building construction and plumbing symbols	Fire Systems Supervisor should have good communication skills both written and oral. He/ She should be able to solve basic arithmetic and algebraic principles and should have better	5

	• write reports based on inspections done for fire systems in local language/Hindi/English • enter data into log books related to the work being performed • state information, doubts and concerns about work related matters with clarity and in a professional manner • evaluate adequacy of information available for sound decision making • identify the objectives, concerns and priorities of the client • identify array of solutions that addresses needs of the client • apply problem solving skills • seek official and authorized sources of help and guidance to resolve problems that cannot be solved at one's level of authority • diagnose the problem for root cause, identify the possible solution(s) and take up an optimum /best practical solution(s) • use logical thinking and make judgments • use reasoning skills and intuition to detect any potential problems which could arise • ensure timely completion of work as per agreed standards • think through the problem, evaluate the possible solution(s) and take up an optimum /best possible solution(s)	understanding of social political and natural environment.	
Responsibility	**Responsibility for own work and learning.** • identify hazards at the work area and take measures to migrate the hazards or report the same to authorized personnel • clear the area of unnecessary items, debris and waste as per organizational norms • store and stack materials in a safe and secure manner while ensuring there is • no spillage or cross-contamination • erect signage and barricades as required to ensure safety and security of work area, workers and visitors	Fire Systems Supervisor should know to take responsibility of own work and learning.	5

	• plan and sequence tasks in agreement with others involved in or affected by the work, while adhering to time commitments • check the completed pipe assembly to ensure that all operations have been completed, and that the finished assembly meets the required specification • check materials and equipment for compliance with standards, docket/order form and for acceptable condition • clear the work area and disposed of, reuse or recycle left over materials according to legislation, regulations, codes of practice and job specification • clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures. • inform relevant authority in case any shortcoming or fault is observed • prepare work area to support efficient installation of plumbing pipes • prepare work area to support efficient installation of plumbing pipes • replace faulty/cracked machine inlet hoses to keep them in good shape • clean the aerator to ensure smooth flow of water • reduce water noise in pipes tube clamp • replace dish washers, mend broken pipes and open clogged drains • replace old piping with the new ones as per industry practices • dispose wastewater from plumbing systems • clean faucet aerators with weak water pressure • detect leaks under a sink or in a wall • fix running toilets to prevent the wastage of water • clean up spills quickly after the task has been completed		

	• ensure that electrically driven power tools and machinery are grounded • handle and store various plumbing materials safely • ensure there are no tools left unattended on ledges, stepladders, on beams and near the edges of scaffolds • check the presence of hazardous materials at the work site and clear it as per industry approved guidelines		

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Pipe Wrench - 8 "	Nos	5
2	Pipe Wrench - 10 "	Nos	5
3	Pipe Wrench - 12 "	Nos	5
4	Adjustable Spanner - 8"	Nos	5
5	Adjustable Spanner - 10"	Nos	5
6	Adjustable Spanner - 12"	Nos	5
7	Double Ended Spanner Set	Nos	5
8	Basin Wrench	Nos	5
9	Parrot Plier	Nos	5
10	Nose Plier	Nos	5

11	Cutting Plier	Nos	5
12	Screw Driver Set	Nos	5
13	Hammer	Nos	5
14	Meter Tape - 3m	Nos	5
15	Insulation Tape	Nos	5
16	Tube Cutter	Nos	5
17	Hack Saw Frame	Nos	5
18	Hack Saw Blades	Nos	5
19	Torch Light	Nos	5
20	Drill Machine	Nos	5
21	Drill Bit Set	Nos	5
22	Screw Set (Star)	Nos	5
23	Rawl Plug Set	Nos	5
24	Nails Set	Nos	5
25	Tester	Nos	5
26	Allen Key Set	Nos	5
27	Flat File with Handle	Nos	5
28	Pipe Reamer	Nos	5
29	Teflon Tape	Nos	5
30	Thread Bundle	Nos	5
31	Water Level Tube	Nos	5

32	Spirit Level-12 inch	Nos	5
33	Plumb Bob	Nos	5
34	Tri Square	Nos	5
35	Stainless Steel Scale - 1 ft	Nos	5
36	Chisel	Nos	5
37	Centre Punch	Nos	5
38	Knife	Nos	5
39	Plunger	Nos	5
40	Safety Shoe (In Pairs)	Nos	5
41	Safety Belt	Nos	5
42	Safety Glass	Nos	5
43	Safety Gloves (Rubber) (In Pairs)	Nos	5
44	Safety Gloves (Cotton and Anti Cut) (In Pairs)	Nos	5
45	Safety Gloves (Heat Resistant) (In Pairs)	Nos	5
46	Ear Plug	Nos	5
47	Helmet	Nos	5
48	Alloy steel Pipe Installation and Maintenance Manual	Nos	30
49	Carbon steel Pipe Installation and Maintenance Manual	Nos	30
50	Galvanized pipe Installation and Maintenance Manual	Nos	30
51	Ductile iron Pipe Installation and Maintenance Manual	Nos	30
52	Alloy steel Pipe Installation and Maintenance Manual	Nos	30

53	Cast Iron Pipe Installation and Maintenance Manual	Nos	30
54	Water Meters	Nos	5
55	Electronic sensor/device for continuous monitoring of water conditions	Nos	5
56	Epoxy coating	Nos	5
57	100 mm or less dia Fire Pipes	Meter	30
58	100 mm or small dia Threaded and coupling connection	Nos	10
59	Grooved and clamp connection: DN50 to DN300	Nos	30
60	Flange connect: Above DN50	Nos	30
61	Welding Devices	Nos	5
62	Grooved Reducer: reducer with thread	Nos	10
63	Grooved Cap: cap with concentric hole	Nos	10
64	Grooved Elbow: 90° elbow	Nos	10
65	Grooved Elbow: 45° elbow	Nos	10
66	Grooved Elbow: 22.5° elbow	Nos	10
67	Grooved Tee: equal tee	Nos	10
68	Grooved Tee: unequal tee	Nos	10
69	Grooved Tee: reducer tee	Nos	10
70	Grooved Tee: unequal tee with thread	Nos	10
71	Grooved Tire: equal cross	Nos	10
72	Grooved Tire: Y connect	Nos	10

73	Shut-Off Valves	Nos	2
74	Balancing Valves	Nos	2
75	Vacuum Relief Valve	Nos	2
76	Heat Trap	Nos	2
77	National Codes and Standards	Nos	30
78	Fire Alarm Panel Key	Nos	3
79	Fire system service and Design manual	Nos	30
80	Multi-meter	Nos	30
81	Pictures of various Sites of Plumbing	Nos	30
82	Thermal Imaging Camera	Nos	1
83	Smoke Detector Tester	Nos	1
84	Fire Extinguisher	Nos	1
85	Ladder	Nos	1
86	Laptop/Computer	Nos	5
87	Notepad	Nos	30
88	Pen	Nos	30
89	Pencil	Nos	30
90	Eraser	Nos	30
91	Sharpener	Nos	30
92	White Board / Black Board	Nos	1
93	White Board Marker / Chalk (Blue)	Nos	1

94	White Board Marker / Chalk (Black)	Nos	1
95	White Board Marker / Chalk (Red)	Nos	1
96	Black Board Chalk (White)	Nos	1
97	White Board / Black Board Duster	Nos	1

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. White Board / Smart Board
2. Marker / Projector

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1	BAMBOO HOTELS & GLOBAL CENTRE PVT LTD	Amit Wadhwa	AGM, Design		9711117623	amit.wadhwa@dbg.co.in	
2	D PLUMBING CONSULTANTS	Chintan Daiya	Director		9323990264	chintan@dplumbing.net	
3	KUMAR ENDECON PVT LTD	Kushank Kumar	Director		9810122412	endecon@gmail.com	
4	HSIL LIMITED	Ajay Jain	Vice-President		9950285921	ajayjain@hindware.in	
5	IAPMO INDIA	Swathi Saralya	Project Manager		7259389372	swathi.saralya@iapmo.org	

6	LARSEN & TURBO LTD	Anand Pratap Singh	Project Director			apsingh@lntecc.com	
7	MEN AT WORK ENGG. PVT.LTD.	Ravi Kumawat	Director		9928084922	ravi@menatworkindia.in	
8	MILIND SERVICES	Milind Shete	Proprietor		9422754235	milindservices@yahoo.co.in	
9	MKG CONSULTANTS	M K Gupta	Managing Director		9811142362		
10	ORIPLAST LTD.	Harshvardhan Agarwal	Director		033-2243396	harshagarwal@gmail.com	
11	PROION CONSULTANTS	Sandeep Goel	Director		9610015842	sandeep.goel@proion.net	
12	FIRST PLUMBING PVT. LTD	S Marichamy	Director		9711597833	firstplumbing@gmail.com	
13	SHRESTA SKILLS	Shamshad Ali	Training Coordinator		9810305619	skilltrainingpmkvy@gmail.com	
14	Sanitary Syndicate Pvt. Ltd	Sudip Das	Manager, Planning and Project Coordination		9748704575	sudipdas1972@gmail.com	
15	Supertech Agencies	Md Faizul Azam	Partner		9006752313	mailsupertech1@gmail.com	
16	M/S Unique Engineering Consultancy Pvt. Ltd.	RATAN KUMAR SARKAR	Director		9830969853	uecpl10@gmail.com	
17	M/s. Kromatics	Rohit Korgaonkar	Partner		9820426977	kromatics.backup@gmail.com	
18	National CPWD Academy, Ghaziabad	Naveen Bansal	Supertending Engineer (T-I)		9958738739	naveenkbansal@gmail.com	

19	PRADHAN PLUMBING SYSTEMS	SAURABH PRADHAN	DIRECTOR-TECHNICAL		9953041228	pradhanplumbing@gmail.com	
20	Ashiana Housing	BC Asthana	General Manager		9828023719	bc.asthana@ashianahousing.com	

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2023-24	1500	1050	600	420	75	53
2024-25	2500	1750	1000	700	125	88
2025-26	3500	2450	1400	980	175	123

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
1.0													

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1.
2.

Content availability for previous versions of qualifications:

☐ Participant Handbook ☐ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☐Showing Practical Demonstrations to the learners		
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐Tutorials/ Assignments/ Drill/ Practice		
6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PSC/N0158	Identify work requirements	10	10	5	3

	Plan and schedule project related tasks	10	15	10	4
	organise for resources	10	15	5	3
	Total Marks	**30**	**40**	**20**	**10**
PSC/N0159	Monitor the installation of fire protection systems	10	15	6	4
	Test the installed fire protection systems	10	15	6	4
	Commission the installed fire protection systems	10	10	8	2
	Total Marks	**30**	**40**	**20**	**10**
PSC/N0160	Prepare for repair and maintenance	5	10	**5**	2
	Conduct maintenance	15	15	8	4
	Conduct repair	10	15	7	4
	Total Marks	**30**	**40**	**20**	**10**
PSC/N0136	Follow safety measures to avoid accidents	12	32		5
	Follow hygiene and sanitation practices	3	8		2
	Use tools, equipment and materials safely	7	8		1
	Deal with emergencies	8	12		2
	Total Marks	**30**	**60**		**10**
DGT/VSQ/N0103	Introduction to Employability Skills	1	1		
	Constitutional values – Citizenship	1	1		
	Becoming a Professional in the 21st Century	1	3		
	Basic English Skills	3	4		
	Career Development & Goal Setting	1	2		
	Communication Skills	2	2		
	Diversity & Inclusion	1	1		
	Financial and Legal Literacy	2	3		

	Essential Digital Skills	3	5		
	Entrepreneurship	2	3		
	Customer Service	1	2		
	Getting ready for apprenticeship & Jobs	2	3		
	Total Marks	**20**	**30**		
Grand Total		**140**	**210**	**60**	**40**

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:
   - Batches assigned to the assessment agencies for conducting the assessment on SIP or email
   - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
   - Assessment agency deploys the ToA certified Assessor for executing the assessment
   - SSC monitors the assessment process & records
2. Testing Environment:
   - Check the Assessment location, date and time
   - If the batch size is more than 30, then there should be 2 Assessors.
   - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
3. Assessment Quality Assurance levels/Framework:
   - Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
   - Questions are mapped to the specified assessment criteria
   - Assessor must be ToA certified & trainer must be ToT Certified
4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - Centre photographs with signboards and scheme specific branding
5. Method of verification or validation:
   - Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access
   - Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
    - Videos of Trainees during OJT
4. Assessment of each Module will ensure that the candidate is able to:
    - Effective engagement with the customers
    - Understand the working of various tools and equipment

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.

Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf