

NSQF QUALIFICATION FILE

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Indian Iron and Steel Sector Skill Council - IISSSC

Karigari Bhawan, 5th Floor, Room No-509, Plot No-B/7, Action Area-III, New Town, Rajarhat, Kolkata-700160

Name and contact details of individual dealing with the submission

Name: Mr. Sushim Banerjee

Position in the organization: Chief Executive Officer

Address if different from above: Same as above

Tel. number(s): 033 23247559

E-mail address: ceo@iisssc.org, sushim_banerjee@yahoo.com

List of documents submitted in support of the Qualifications File

1. Qualification Pack:- ISC/Q0903
2. Documents related to QP Development (Refer to folder “Common Files”)
 - (i) Labour Market Survey
 - (ii) About the sector
 - (iii) Occupational Map
 - (iv) List of Companies participating in QP Development Process
 - (v) Model Curriculum

NSQF QUALIFICATION FILE

SUMMARY

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| 1 | Qualification Title: Mechanic : Hydraulic & Pneumatic System |
| 2 | Qualification Code, if any: ISC/Q0903 |
| 3 | NCO code and occupation: NCO-2015/3122.02 Mechanical Maintenance |
| 4 | Nature and purpose of the qualification (Please specify whether qualification is short term or long term): Regular upkeep of hydraulic/pneumatic equipment/system, checking of hydraulic medium (hydraulic mineral oil), air under pressure and rectifying breakdowns including; identifying problems, dismantling equipment, cleaning parts, rectifying root causes , re assembling equipment, checking alignment, vibration, etc. to ensure fitness of equipment prior to handover and informing supervisor, operations, stores etc. as appropriate in a hydraulic and pneumatic system. |
| 5 | Body/bodies which will award the qualification: Indian Iron and Steel Sector Skill Council - IISSSC |
| 6 | Body which will accredit providers to offer courses leading to the qualification: Indian Iron and Steel Sector Skill Council - IISSSC |
| 7 | Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy): Yes |
| 8 | Occupation(s) to which the qualification gives access: Mechanical Maintenance |
| 9 | Job description of the occupation: The job is all about to regular upkeep of hydraulic/pneumatic equipment/system, checking of hydraulic medium (hydraulic mineral oil), air under pressure and rectifying breakdowns including; identifying problems, dismantling equipment, cleaning parts, rectifying root causes , re assembling equipment, checking alignment, vibration, etc. to ensure fitness of equipment prior to handover and informing supervisor, operations, stores etc. as appropriate in a hydraulic and pneumatic system. |
| 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 4 |
| 13 | Anticipated volume of training/learning required to complete the qualification: 600 Hours |
| 14 | Indicative list of training tools required to deliver this qualification: Laptop, white board, marker, projector |

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| | <p>Sanitization kit, disinfectants, alcohol-based sanitizers, different types of face masks, shields etc. Different type of waste bins to collect and segregate waste for disposal</p> <p>optical/ digital pyrometer, thermo couple and manometers</p> <p>PPTs for various types of drawings,</p> <p>Basic Tools and Equipment's, measuring tools & precision measurement tools, Lubricant and coolant, material and Equipment for cleaning, lifting machines, PPE, Safety Sign, First Aid Box, Fire Extinguishers</p> <p>Hydraulic and pneumatic equipment,</p> <p>Hand tools and lifting machines, various measuring instruments</p> | | |
| 15 | <p>Entry requirements and/or recommendations and minimum age:</p> <p>10th Class pass with 2 years of relevant experience</p> <p>OR</p> <p>10th Class Pass + ITI (Fitter/Mechanical trade or in related trade)</p> <p>OR</p> <p>12th Class Pass with 1 year of relevant experience</p> <p>OR</p> <p>Level – 3 (Rigger: Rigging of Heavy Material) with 1 year of relevant experience</p> <p>OR</p> <p>Level – 3 (Fitter – Levelling Alignment and Balancing) with 1 year of relevant experience</p> <p>and</p> <p>18 years</p> | | |
| 16 | <p>Progression from the qualification (Please show Professional and academic progression):</p> <p>Safety Supervisor – Level 5</p> | | |
| 17 | <p>Arrangements for the Recognition of Prior learning (RPL):</p> <p>RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack by Indian Iron and Steel Sector Skill Council</p> | | |
| 18 | <p>International comparability where known (research evidence to be provided):</p> <p>No</p> | | |
| 19 | <p>Date of planned review of the qualification: 1st July 2026</p> | | |
| 21 | <p>Formal structure of the qualification</p> <p>Mandatory components</p> | | |
| (i) | <p>Title of component and identification code/NOSs/Learning outcomes</p> | <p>Estimated size (learning hours)</p> | <p>Level</p> |

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| 1. | ISC/N0008: Use basic health and safety practices at the work place | | |
| 2. | ISC/N0009: Work effectively with others | | |
| 3. | ISC/N0918: Prepare for fitting and assembly operations | | |
| 4. | ISC/N0919: Perform fitting and assembly of hydraulic and pneumatic equipment | 600 | 4 |
| 5. | ISC/N0920: Perform post-assembly activities | | |
| 6. | ISC/N0921: Perform maintenance of hydraulic and pneumatic equipment | | |
| Sub Total (A) | | 600 | |

SECTION 1 **ASSESSMENT**

| 1 | <p>Body/Bodies which will carry out assessment: Indian Iron and Steel Sector Skill Council - IISSSC. Proposed Body/Bodies which will carry out assessment:</p> <table border="1"> <thead> <tr> <th>S.No</th><th>Name of the Assessment Agency</th></tr> </thead> <tbody> <tr><td>1</td><td>ACE Foundation</td></tr> <tr><td>2</td><td>Brisk Mind Pvt. Ltd.</td></tr> <tr><td>3</td><td>Demorgia Consulting Services</td></tr> <tr><td>4</td><td>EduVantage Private Limited</td></tr> <tr><td>5</td><td>GLOCAL THINKER'S PRIVATE LIMITED</td></tr> <tr><td>6</td><td>IRIS Corporate Solutions Private Limited</td></tr> <tr><td>7</td><td>MS Certification Services Pvt. Ltd.</td></tr> <tr><td>8</td><td>Nitya Skill Development Organization Samiti</td></tr> <tr><td>9</td><td>Palmary Project & Services Pvt. Ltd.</td></tr> <tr><td>10</td><td>STAR PROJECTS SERVICES PVT. LTD.</td></tr> <tr><td>11</td><td>Vedokt Skill & Consulting Pvt. Ltd.</td></tr> <tr><td>12</td><td>Vistaskills Pvt Ltd</td></tr> <tr><td>13</td><td>Vsquare Techsolutions Pvt. Ltd.</td></tr> </tbody> </table> | S.No | Name of the Assessment Agency | 1 | ACE Foundation | 2 | Brisk Mind Pvt. Ltd. | 3 | Demorgia Consulting Services | 4 | EduVantage Private Limited | 5 | GLOCAL THINKER'S PRIVATE LIMITED | 6 | IRIS Corporate Solutions Private Limited | 7 | MS Certification Services Pvt. Ltd. | 8 | Nitya Skill Development Organization Samiti | 9 | Palmary Project & Services Pvt. Ltd. | 10 | STAR PROJECTS SERVICES PVT. LTD. | 11 | Vedokt Skill & Consulting Pvt. Ltd. | 12 | Vistaskills Pvt Ltd | 13 | Vsquare Techsolutions Pvt. Ltd. |
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| S.No | Name of the Assessment Agency | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | ACE Foundation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Brisk Mind Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Demorgia Consulting Services | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | EduVantage Private Limited | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | GLOCAL THINKER'S PRIVATE LIMITED | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | IRIS Corporate Solutions Private Limited | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | MS Certification Services Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Nitya Skill Development Organization Samiti | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Palmary Project & Services Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | STAR PROJECTS SERVICES PVT. LTD. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Vedokt Skill & Consulting Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Vistaskills Pvt Ltd | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Vsquare Techsolutions Pvt. Ltd. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | <p>How will RPL assessment be managed and who will carry it out? The RPL assessment will be managed by selected assessment partners from the applications received</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 3 | <p>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.</p> <p>The emphasis is on practical demonstration of skills and knowledge based on the performance criteria. The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Pack. The assessment papers are also checked for the various outcome-based parameters such as quality, time taken, precision, tools & equipment requirement etc. The assessment results are backed by evidences collected by assessors.</p> <ol style="list-style-type: none">1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre.2. The assessor needs to verify the authenticity of the candidates by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate, and cross verify trainee's credentials in the enrolment form.3. The assessor needs to punch the trainee's roll number on all the test pieces.4. The assessor can take a photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.5. The assessor also needs to carry a photo ID card. <p>The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.</p> |
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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.

ASSESSMENT EVIDENCE

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

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.

24. Assessment evidences**Title of Component:** Mechanic : Hydraulic & Pneumatic System**CRITERIA FOR ASSESSMENT OF TRAINEES****Job Role** Mechanic : Hydraulic & Pneumatic System**Qualification Pack** ISC/Q0903**Sector Skill Council** Indian Iron and Steel Sector Skill Council**Guidelines for Assessment**

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (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 these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

ISC/N0008: Use basic health and safety practices at the workplace

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|---------------------------------------------------------------------------------------------------|---------------------|------------------------|----------------------|-------------------|
| <i>Maintain safe and secure working environment</i> | 10 | 14 | - | 6 |
| PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace | 2 | 2 | - | 1 |
| PC2. follow safe working practices while dealing with hazards to ensure safety of self and others | 2 | 3 | - | 1 |

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| PC3. use appropriate protective clothing/ equipment for specific tasks and work | 1 | 2 | - | 1 |
| PC4. follow appropriate safety practices while working in and around trenches, elevated places and confined areas | 2 | 1 | - | - |
| PC5. lift heavy objects safely using correct procedures | 1 | 2 | - | 1 |
| PC6. carry out routine check of the machine for identifying potential hazards | 1 | 2 | - | 1 |
| PC7. report any identified breaches in health, safety and security policies and procedures to the designated person | 1 | 2 | - | 1 |
| <i>Emergencies, rescue and first aid procedures</i> | 6 | 9 | - | 5 |
| PC8. use appropriate type of fire extinguisher | 1 | 1 | - | 1 |
| PC9. apply appropriate rescue techniques during fire hazard | 1 | 2 | - | 1 |
| PC10. provide appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc. | 2 | 2 | - | 1 |
| PC11. follow emergency procedures such as raising alarm, safe evacuation etc. | 1 | 2 | - | 1 |
| PC12. attend safety training and fire drills to respond promptly during an emergency | 1 | 2 | - | 1 |
| <i>Health and hygiene</i> | 2 | 6 | - | 2 |
| PC13. follow regular cleaning and disinfection practices at work place using appropriate techniques and materials | 1 | 2 | - | 1 |
| PC14. follow hand hygiene practices at work place using appropriate techniques and materials | 1 | 2 | - | 1 |
| PC15. report regarding the contagious illness of self or people in close contact | - | 1 | - | - |
| PC16. avoid contact with ill people and self-isolate in a similar situation | - | 1 | - | - |
| <i>Housekeeping and waste management</i> | 7 | 12 | - | 5 |

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| PC17. follow the fundamentals of 5S for housekeeping | 2 | 3 | - | 2 |
| PC18. ensure good housekeeping in order to prevent hazards and accidents | 1 | 2 | - | - |
| PC19. store the material, tools and equipment in the correct location and in good condition | 1 | 2 | - | - |
| PC20. segregate waste into different categories | 1 | 2 | - | 1 |
| PC21. identify recyclable, non-recyclable and hazardous waste | 1 | 1 | - | 1 |
| PC22. dispose non-recyclable, recyclable and reusable waste appropriately at identified location | 1 | 2 | - | 1 |
| <i>Material and energy conservation</i> | 5 | 9 | - | 2 |
| PC23. identify ways to optimize usage of material in various tasks/activities/processes | 1 | 2 | - | - |
| PC24. check for spills/leakages in various tasks/ activities/processes | 1 | 2 | - | 1 |
| PC25. plug spills/leakages and escalate to appropriate authority if unable to rectify | 1 | 2 | - | 1 |
| PC26. check if the equipment/machine is functioning normally before commencing work and rectify wherever required | 1 | 2 | - | - |
| PC27. ensure electrical equipment and appliances are properly connected and turned off when not in use | 1 | 1 | - | - |
| NOS Total | 30 | 50 | - | 20 |

ISC/N0009: Work effectively with others

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|---------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Communicate effectively with colleagues and others</i> | 13 | 20 | - | 9 |
| PC1. coordinate with colleagues to share work, as per the workload in order to achieve team goals | 3 | 5 | - | 2 |

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| PC2. maintain clear communication with colleagues and others, wherever needed, through all means i.e. face-to-face, telephonic or written | 5 | 7 | - | 3 |
| PC3. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity | 3 | 4 | - | 2 |
| PC4. respect all colleagues and co-workers | 1 | 2 | - | 1 |
| PC5. resolve conflicts by communicating with colleagues and other departments | 1 | 2 | - | 1 |
| <i>Interact with supervisor</i> | 8 | 14 | - | 6 |
| PC6. identify work requirements by receiving instructions from reporting supervisor | 2 | 3 | - | 1 |
| PC7. escalate problems to supervisors that cannot be handled | 2 | 3 | - | 2 |
| PC8. report the completed work | 2 | 3 | - | 1 |
| PC9. interact with the reporting supervisor about any possible hazards and safety concerns | 2 | 5 | - | 2 |
| <i>Follow appropriate behaviour at work place</i> | 9 | 16 | - | 5 |
| PC10. extend help to people with Disability (PwD) at workplace, if required | 2 | 4 | - | 2 |
| PC11. empathize with people with disability | 2 | 4 | - | 1 |
| PC12. adopt a gender neutral behavior | 2 | 4 | - | 1 |
| PC13. adopt responsible and disciplined behaviours at the workplace | 3 | 4 | - | 1 |
| NOS Total | 30 | 50 | - | 20 |

ISC/N0918: Prepare for fitting and assembly operations

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Identify work requirements</i> | 15 | 20 | - | 9 |
| PC1. identify the work to be done by interpreting the engineering drawings/blueprints/SOPs | 2 | 3 | - | 1 |

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| PC2. identify correct limits, tolerance and fits of rotating machine by interpreting the drawings properly | 2 | 3 | - | 2 |
| PC3. identify the tools, measuring instruments, equipment and spares required for the job | 5 | 4 | - | 3 |
| PC4. select and arrange the right tools, measuring instruments, equipment and spares as per the SOP and job requirements | 4 | 7 | - | 2 |
| PC5. report to stores / supervisor in case of non-availability of tools, tackles and spares | 2 | 3 | - | 1 |
| <i>Prepare for fitting and assembling activities</i> | 15 | 30 | - | 11 |
| PC6. use appropriate Personal Protective Equipment (PPE) for safe working in workshop | 2 | 3 | - | 1 |
| PC7. plan sequence of activities need to perform fitting and assembling of the equipment | 1 | 3 | - | 1 |
| PC8. check the tools, measuring instruments and equipment for any defects and that they are as per the required quality standards | 4 | 9 | - | 3 |
| PC9. ensure that tools match the desired specifications for working in hydraulic and pneumatic systems | 2 | 3 | - | 2 |
| PC10. prepare tools, tackles, spares, lifting equipment etc. as per SOP/WI | 4 | 9 | - | 3 |
| PC11. report damaged / defective components of equipment and tools as per the escalation matrix | 2 | 3 | - | 1 |
| NOS Total | 30 | 50 | - | 20 |

ISC/N0919: Perform fitting and assembly of hydraulic and pneumatic equipment

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|----------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Perform installation of equipment</i> | 10 | 17 | - | 6 |
| PC1. lift the equipment parts manually or by hoist and place the same securely on the designated place as indicated in the | 2 | 3 | - | 1 |

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| drawing/work instructions | | | | |
| PC2. mount, align, adjust and level the components to be assembled as per the design/ manufacturers' specifications | 3 | 5 | - | 2 |
| PC3. perform fitting operations as per equipment needs and prepare the components/parts and sub-assemblies of the equipment for assembly operations | 5 | 9 | - | 3 |
| <i>Perform assembling activities</i> | 20 | 33 | - | 14 |
| PC4. perform assembly operations and assemble all the parts of equipment as mentioned in drawing/blueprint | 5 | 9 | - | 3 |
| PC5. fasten the mechanical components/ subassemblies together by using specified screws, bolts, and collars | 3 | 5 | - | 2 |
| PC6. set and adjust the linkages, tensions and clearances of assembled components to specified specifications by using fixed gauges and hand tools | 3 | 5 | - | 2 |
| PC7. seal the required areas thoroughly to prevent penetration of water/air etc. during the usage of equipment | 2 | 3 | - | 2 |
| PC8. set and adjust flow, pressure, speed, level of hydraulic medium / air | 2 | 3 | - | 1 |
| PC9. follow the do's and don'ts of the manufacturing process as defined in SOPs/Work Instructions or given by supervisors | 1 | 2 | - | 1 |
| PC10. check the joints, connections, etc. to ensure they are adequately tightened and joint | 2 | 3 | - | 2 |
| PC11. escalate the problems faced during installation and assembly activities to the supervisor | 2 | 3 | - | 1 |
| NOS Total | 30 | 50 | - | 20 |

ISC/N0920: Perform post-assembly activities

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|----------------------------------|--------------|-----------------|---------------|------------|
|----------------------------------|--------------|-----------------|---------------|------------|

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| <i>Conduct tests to ensure fitness of equipment</i> | 25 | 41 | - | 19 |
| PC1. check the equipment as per the control plan, WI for proper working | 2 | 4 | - | 2 |
| PC2. set the test apparatus as per the selected testing process and SOPs/WI | 2 | 3 | - | 2 |
| PC3. connect the equipment and its components, various data capturing meters and gauges with the testing apparatus as per SOP/WI | 1 | 2 | - | 1 |
| PC4. conduct functional tests of assembled equipment to ensure it performs as per desired performance criteria | 4 | 7 | - | 3 |
| PC5. check abnormalities to ensure they are within desired limits (temperature, leakage, pressure, level, vibration, sound and RPM) | 2 | 3 | - | 1 |
| PC6. identify non-conformities and their causes to quality assurance standards | 2 | 3 | - | 1 |
| PC7. record observations/ readings as per the parameters mentioned in the testing manual/Work Instructions | 2 | 3 | - | 1 |
| PC8. observe any deviation, noise or vibrations during the testing process and change or repair the equipment components as per the requirement | 2 | 3 | - | 2 |
| PC9. conduct trials of the equipment to ensure that specified parameters are attained with no abnormalities | 2 | 4 | - | 2 |
| PC10. record the test and trial results as per the organisation guidelines | 2 | 3 | - | 1 |
| PC11. suggest and implement the corrective actions to address problems in machine/electric panels | 2 | 3 | - | 2 |
| PC12. record adjustments not covered by established procedures for future reference | 2 | 3 | - | 1 |
| <i>Perform post-testing activities</i> | 5 | 9 | - | 1 |
| PC13. clean and store all the tools, machine and equipment after completion of work | 2 | 3 | - | 1 |
| PC14. dispose scrap or waste material into the disposal area in accordance with the | 1 | 2 | - | - |

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| company's policies and environmental regulations | | | | |
| PC15. report to the supervisor about any problems faced or anticipated during the complete process | 1 | 2 | - | - |
| PC16. maintain and update all the records and reports related to assembling activities done as per the organisational guidelines | 1 | 2 | - | - |
| NOS Total | 30 | 50 | - | 20 |

ISC/N0921: Perform maintenance of hydraulic and pneumatic equipment

| Assessment Criteria for Outcomes | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
| <i>Prepare for maintenance work</i> | 6 | 8 | - | 4 |
| PC1. determine the work requirements such as type of tasks to be performed (repair, maintenance, etc.), equipment to be maintained from drawings, maintenance schedule, work instructions, process manuals, etc. | 1 | 2 | - | 1 |
| PC2. identify tools, consumables, spare parts, etc. required for performing repair and maintenance | 3 | 2 | - | 2 |
| PC3. communicate with the user/operator about any variances observed during functioning of the equipment and other performance issues | 1 | 2 | - | 1 |
| PC4. clear the work area thoroughly to ensure no unwanted materials are present before starting the work | 1 | 2 | - | - |
| <i>Repair and maintain the hydraulic and pneumatic equipment</i> | 24 | 42 | - | 16 |
| PC5. follow safety practices during maintenance activities as per organisational SOP | 1 | 1 | - | - |
| PC6. perform basic health check-up of equipment as specified in the maintenance checklist | 3 | 5 | - | 2 |
| PC7. dismantle the equipment components and replace/change the spare parts and consumables of the vehicle as per the schedule | 2 | 3 | - | 1 |

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| PC8. change/refill the hydraulic oil/compressor lube oil, lubricants and fluids | 2 | 3 | - | 1 |
| PC9. check the internal conditions of equipment parts to test its working status and expected conditions | 2 | 5 | - | 3 |
| PC10. check the systems of the equipment to find out root cause of the problems like any leakage, short circuit in parts, breakage of wires etc. and discuss the same with senior if required | 3 | 5 | - | 2 |
| PC11. carry out minor repairs and adjustments of the equipment and report any malfunctions/ repairs in the machine beyond own scope to the concerned person | 3 | 5 | - | 2 |
| PC12. clean the various components of equipment such as reservoir, suction strainer, return line filter, breather filter, suction air filter of air compressor, suction/delivery valves of air compressor etc. | 2 | 4 | - | 1 |
| PC13. assemble back the covers, guards, clamps, insulation etc. of the equipment after repair and maintenance | 2 | 3 | - | 1 |
| PC14. change the maintenance due/status sticker on the equipment | 1 | 2 | - | 1 |
| PC15. record all repairs carried out, parts disposed and replaced, time taken and other significant findings observed during the work process | 1 | 2 | - | 1 |
| PC16. ensure that all maintenance activities are adequately addressed | 1 | 2 | - | - |
| PC17. report information such as repair and maintenance work done, faults observed, action taken, parts replaced, next scheduled maintenance, etc. to the supervisors accurately | 1 | 2 | - | 1 |
| NOS Total | 30 | 50 | - | 20 |

| Outcomes to be assessed/NOSs to be assessed | Assessment criteria for the outcome |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Provided in the above section | |
| | |
| | |
| Means of assessment 1 <ol style="list-style-type: none"> 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 these criteria. | |
| Means of assessment 2 Add boxes as required. | |
| Pass/Fail <ol style="list-style-type: none"> 1. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS. 2. 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. | |

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SECTION 2 EVIDENCE OF LEVEL

| Title/Name of qualification/component: Mechanic : Hydraulic & Pneumatic System | | | Level: 4 |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| Process | Regular upkeep of hydraulic and pneumatic equipment, checking of hydraulic medium (hydraulic mineral oil), air under pressure and rectifying breakdowns including; identifying problems, trouble shooting, dismantling equipment, cleaning parts, rectifying root causes , re assembling equipment, checking alignment, vibration, etc. to ensure fitness of equipment prior to handover and informing supervisor, operations, stores etc. as appropriate in a hydraulic and pneumatic system. | Job that requires work in familiar, predictable, routine, situation of clear choice. Hence, this level 4 | 4 |
| Professional knowledge | Knowledge related to plant equipment and plant operations, basic measurements, basic hydraulic and pneumatic components and machines processes and methods | Factual knowledge of field of knowledge or study and hence is level 4 | 4 |
| Professional skill | Attaching utmost importance to safety and housekeeping, maintenance of cast house | Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts. Hence this is level 4 | 4 |
| Core skill | Reading and writing; addition, subtraction; hygiene and environment. | Language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social political and natural environment. Hence this is level 4 | 4 |

NSQF QUALIFICATION FILE

| Title/Name of qualification/component: Mechanic : Hydraulic & Pneumatic System | | | Level: 4 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------|
| NSQF Domain | Outcomes of the Qualification/Component | How the outcomes relates to the NSQF level descriptors | NSQF Level |
| Responsibility | Responsible for completing the repetitive assigned task, working under continuous and supervision of supervisor | Responsibility for own work and learning. and hence level 4 | 4 |

SECTION 3
EVIDENCE OF NEED

| | | | |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate? | | |
| | Basis | In case of SSC | In case of other Awarding Bodies (Institutes under Central Ministries and states departments) |
| | <p>Need of the qualification The Indian and Steel Sector is second largest steel producing nation in the world after China poised to grow from 110MT to 300 MT by 2030. It will undergo a substantial transformation.</p> <p>The sector employs a total of 2 million direct and indirect workers, as of 2018.</p> | <p>The SSC would undertake market study and would enclosed demand forecast for the proposed job role both on short-term and long-term basis to substantiate the requirement of the Qualification proposed. The SSC can produce the data from primary or authorized secondary sources as well.</p> | <p>The Submitting Body would produce any reputable and reliable research reports, such as labour market information reports; occupational mapping or similar research carried out by Ministry/State/Any other authentic source forecasting the demand for the proposed qualification</p> |
| | <p>Industry Relevance We are in the process of taking industry validation.</p> | <p>The SSC would undertake validation of the job roles with actual end-user industry where such employment is going to be generated and absorbed instead of generic validation of industry. The SSC would submit the endorsements from</p> | <p>The Submitting Body would submit the list of industry participation while preparation of the curriculum/ course content of the qualifications. These could include minutes of the meeting/ reports of these consultations</p> |

NSQF QUALIFICATION FILE

| | | | |
|--|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | users/intended users of the qualification clearly supporting or otherwise the need for trained people against specific job role. (<i>The industry validation format to be used</i>) | |
| | Usage of the qualification: This Qualification Pack will be used across iron and steel industry which is organised as well as unorganised | <p>The SSC would submit details of the employment generated (wherever applicable) and realised by virtue of training in the Qualifications of the sector earlier submitted for NSQF alignment.</p> <p>In case of unorganized sector, case studies or evidences may be given</p> | <p>The submitting body would submit the details of trained and placed data in the proposed qualification (if an existing qualification is being proposed for NSQF alignment)</p> <p>Information about the success of the qualification should be given (e.g. uptake figures, examples of use in recruitment and placement rates (if known) should be given. However, many of the bodies that do not have placement tracking mechanism established in place would provide necessary endorsements by the state/ ministry stating that a tracking mechanism would be institutionalized and placement records shall be provided annually or later, depending on length of qualification.</p> |
| | Estimated uptake The Iron and Steel sector will require | The SSC would submit the estimated uptake of the qualification and | The Submitting Body should submit the estimated uptake by |

NSQF QUALIFICATION FILE

| | | | |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| | <p>a series of non-routine tasks like social intelligence, complex critical thinking, and creative problem solving to remain relevant in the steel industry.</p> | <p>What steps were carried out to test the likely uptake of the qualification? The basis of this estimate should include data about the number of jobs or places in courses of learning which will be available to people who are awarded the qualification.</p> | <p>reflecting the number of the takers for this qualification for at least two years from submission of the qualification</p> |
| 2 | <p>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences</p> <p>N/A</p> | | |
| 3 | <p>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</p> <p>NSDC list of Approved and Under-Development QPs was checked prior to commencement the work.</p> | | |
| 4 | <p>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? Specify the review process here</p> <ul style="list-style-type: none"> • Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation • Monitoring of results of assessments • Employer feedback will be sought post-placement • A formal review is scheduled by 2026 | | |

Please attach most relevant and recent documents giving further information about any of the topics above.

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

SECTION 4

EVIDENCE OF PROGRESSION

| | |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | 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? <ol style="list-style-type: none">1. Endorsed and accepted by the Industry players2. Formal recognition from the Industry players3. Horizontal and vertical mobility options are available |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|