

Qualification Pack



Soldering and Brazing Technician

QP Code: ASC/Q4201

Version: 1.0

NSQF Level: 4

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase - III, Leela Building
New Delhi - 110020

Qualification Pack

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ASC/Q4201: Soldering and Brazing Technician

Brief Job Description

This role is responsible for joining various types of metallic frames, structures, jigs, plates, sheets, wires etc. using heating and melting process created through electrical power and gaseous discharge, maintaining process parameters, conducting quality checks on output product and maintaining a safe & healthy working environment on the shop floor.

Personal Attributes

Reading, writing and communication skills, ability to plan and prioritize, quality consciousness, sensitivity to problem solving, quick decision making, safety orientation, Dexterity, Hand eye coordination, high precision, ability to use internal ERP systems (if existing), Good vision, no color blindness.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N0006: Maintain a safe and healthy working environment](#)
2. [ASC/N0021: Maintain 5S at the work premises](#)
3. [ASC/N3112: Ensure completion of post operations activities of inspection, storage and maintenance](#)
4. [ASC/N4201: Understanding work requirements and setting up the apparatus for soldering and brazing](#)
5. [ASC/N4202: Conduct the brazing and soldering process to join the work pieces](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Soldering and brazing
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7212.0500/7212.0501

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Minimum Educational Qualification & Experience	I.T.I (Mechanical/ Welding Technology) with 3-5 years of experience in soldering/ brazing/welding process
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Different soldering and brazing techniques used in organizations Geometric Dimensioning and Tolerance Different soldering and brazing standards 5S and Safety aspects Problem Solving Techniques Quality Management Systems Knowledge of IT systems and ERP
Minimum Job Entry Age	18 Years
Last Reviewed On	15/11/2013
Next Review Date	24/09/2021
Deactivation Date	24/09/2021
NSQC Approval Date	20/07/2015
Version	1.0
Reference code on NQR	2015/AUT/ASDC/00591
NQR Version	1.0

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ASC/N0006: Maintain a safe and healthy working environment

Description

This NOS is about creating a Safe and Healthy work place, adhering to the safety guidelines in the working area, following practices which are not impacting the environment in a negative manner and training team members on health and safety related issues

Scope

The role holder will be responsible for

- identifying and reporting of risks
- creating and sustaining a safe, clean and environment friendly work place This NOS will be applicable to all Automotive sector manufacturing job roles

Elements and Performance Criteria

Identify and report the risks identified

To be competent, the user/individual on the job must be able to:

- PC1..** Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise
- PC2.** Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc
- PC3.** Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations
- PC4.** Create awareness amongst other by sharing information on the identified risks

Create and sustain a Safe, clean and environment friendly work place

To be competent, the user/individual on the job must be able to:

- PC5..** Follow the instructions given on the equipment manual describing the operating process of the equipments
- PC6..** Follow the Safety, Health and Environment related practices developed by the organization
- PC7.** Operate the machine using the recommended Personal Protective Equipments (PPE)
- PC8. .** Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc
- PC9.** Maintain high standards of personal hygiene at the work place
- PC10.** Ensure that the waste disposal is done in the designated area and manner as per organization SOP.
- PC11.** Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** relevant standards, procedures and policies related to Health, Safety and Environment followed in the company
- KU2.** basic knowledge of Safety procedures(fire fighting, first aid) within the organization
- KU3.** knowledge of various types of PPEs and their usage
- KU4.** basic knowledge of risks/hazards associated with each occupation in the organization
- KU5.** how to safely operate various tools and machines and risks associated with the tools/ equipment
- KU6.** knowledge of personal hygiene and how an individual can contribute towards creating a highly safe and clean working environment

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write basic level notes and observations
- GS2.** read safety instructions put up across the plant premises
- GS3.** read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
- GS4.** effectively communicate information to team members
- GS5.** inform employees in the plant and concerned functions about events, incidents & potential risks observed related to Safety, Health and Environment.
- GS6.** question operator/ supervisor in order to understand the safety related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems
- GS10.** use common sense and make judgments during day to day basis
- GS11.** use reasoning skills to identify and resolve basic problems

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify and report the risks identified</i>	8	23	-	-
PC1.. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	3	6	-	-
PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc	2	6	-	-
PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	2	6	-	-
PC4. Create awareness amongst other by sharing information on the identified risks	1	5	-	-
<i>Create and sustain a Safe, clean and environment friendly work place</i>	17	52	-	-
PC5.. Follow the instructions given on the equipment manual describing the operating process of the equipments	3	7	-	-
PC6.. Follow the Safety, Health and Environment related practices developed by the organization	3	8	-	-
PC7. Operate the machine using the recommended Personal Protective Equipments (PPE)	3	8	-	-
PC8. . Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc	2	8	-	-
PC9. Maintain high standards of personal hygiene at the work place	2	7	-	-
PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	3	8	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others	1	6	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0006
NOS Name	Maintain a safe and healthy working environment
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/09/2015

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ASC/N0021: Maintain 5S at the work premises

Description

This NOS is about ensuring all 5 S activities both at the shop floor and the office area to facilitate increase in work productivity

Scope

The individual needs to. Ensure sorting, streamlining & organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization

Elements and Performance Criteria

Ensure sorting

To be competent, the user/individual on the job must be able to:

- PC1..** follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.
- PC2..** ensure segregation of waste in hazardous/ non hazardous waste as per the sorting work instructions
- PC3..** follow the technique of waste disposal and waste storage in the proper bins as per sop
- PC4..** segregate the items which are labelled as red tag items for the process area and keep them in the correct places
- PC5.** sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions
- PC6. .** ensure that areas of material storage areas are not overflowing
- PC7.** properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required
- PC8.** return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area
- PC9.** follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards
- PC10.** follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists

Ensure proper documentation and storage (organizing , streamlining)

To be competent, the user/individual on the job must be able to:

- PC11.** check that the items in the respective areas have been identified as broken or damaged
- PC12.** follow the given instructions and check for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc
- PC13.** make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions

Ensure cleaning of self and the work place

To be competent, the user/individual on the job must be able to:

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- PC14.** check whether safety glasses are clean and in good condition
- PC15.** keep all outside surfaces of recycling containers are clean
- PC16..** ensure that the area has floors swept, machinery clean and generally clean. in case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards
- PC17..** check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up
- PC18..** ensure workbenches and work surfaces are clean and in good condition
- PC19.** follow the cleaning schedule for the lighting system to ensure proper illumination
- PC20.** store the cleaning material and equipment in the correct location and in good condition
- PC21.** ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene

Ensure sustenance

To be competent, the user/individual on the job must be able to:

- PC22.** follow the daily cleaning standards and schedules to create a clean working environment
- PC23.** attend all training programs for employees on 5 s
- PC24.** support the team during the audit of 5 s
- PC25.** participate actively in employee work groups on 5s and encourage team members for active participation
- PC26.** follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, procedures and policies related to 5S followed in the company
- KU2.** have basic knowledge of 5S procedures
- KU3.** know various types 5s practices followed in various areas
- KU4.** understand the 5S checklists provided in the department/ team
- KU5.** have skills to identify useful & non useful items
- KU6.** have knowledge of labels , signs & colours used as indicators
- KU7.** knowledge on how to sort and store various types of tools, equipment, material etc.
- KU8.** know , how to identify various types of waste products
- KU9.** understand the impact of waste/ dirt/ dust/unwanted substances on the process/ environment/ machinery/ human body
- KU10.** have knowledge of best ways of cleaning & waste disposal
- KU11.** understand the importance of standardization in processes
- KU12.** understand the importance of sustainability in 5S
- KU13.** have knowledge of TQM process
- KU14.** have knowledge of various materials and storage norms
- KU15.** understand visual controls, symbols, graphs etc.

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Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write basic level notes and observations
- GS2.** note down observations (if any) related to the process
- GS3.** read 5S instructions put up across the plant premises
- GS4.** effectively communicate information to team members inform employees in the plant and concerned functions about 5S
- GS5.** question the process head in order to understand the 5S related issues
- GS6.** attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
- GS7.** use common sense and make judgments during day to day basis
- GS8.** use reasoning skills to identify and resolve basic problems using 5S
- GS9.** persuade co team members to follow 5 S
- GS10.** ensure that the co team members understand the importance of using 5 S tool
- GS11.** use innovative skills to perform and manage 5 S activities at the work desk and the shop floor
- GS12.** exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work
- GS13.** do what is right, not what is a popular practices
- GS14.** follow shop floor rules& regulations and avoid deviations; make 5S an integral way of life
- GS15.** ensure self-cleanliness on a daily basis
- GS16.** demonstrate the will to keep the work area in a clean and orderly manner

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure sorting</i>	10	30	-	-
PC1.. follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.	1	3	-	-
PC2.. ensure segregation of waste in hazardous/ non hazardous waste as per the sorting work instructions	1	3	-	-
PC3.. follow the technique of waste disposal and waste storage in the proper bins as per sop	1	3	-	-
PC4.. segregate the items which are labelled as red tag items for the process area and keep them in the correct places	1	3	-	-
PC5. sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions	1	3	-	-
PC6. . ensure that areas of material storage areas are not overflowing	1	3	-	-
PC7. properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required	1	3	-	-
PC8. return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1	3	-	-
PC9. follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards	1	3	-	-
PC10. follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper documentation and storage (organizing , streamlining)</i>	3	9	-	-
PC11. check that the items in the respective areas have been identified as broken or damaged	1	3	-	-
PC12. follow the given instructions and check for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc	1	3	-	-
PC13. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	3	-	-
<i>Ensure cleaning of self and the work place</i>	8	24	-	-
PC14. check whether safety glasses are clean and in good condition	1	3	-	-
PC15. keep all outside surfaces of recycling containers are clean	1	3	-	-
PC16.. ensure that the area has floors swept, machinery clean and generally clean. in case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards	1	3	-	-
PC17.. check whether all hoses, cabling & wires are clean, in goodcondition and clamped to avoid any mishap or mix up	1	3	-	-
PC18.. ensure workbenches and work surfaces are clean and in good condition	1	3	-	-
PC19. follow the cleaning schedule for the lighting system to ensure proper illumination	1	3	-	-
PC20. store the cleaning material and equipment in the correct location and in good condition	1	3	-	-
PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene	1	3	-	-
<i>Ensure sustenance</i>	4	12	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. follow the daily cleaning standards and schedules to create a clean working environment	1	3	-	-
PC23. attend all training programs for employees on 5 s	0.5	2	-	-
PC24. support the team during the audit of 5 s	1	3	-	-
PC25. participate actively in employee work groups on 5s and encourage team members for active participation	0.5	2	-	-
PC26. follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions	1	2	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0021
NOS Name	Maintain 5S at the work premises
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/03/2016

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ASC/N3112: Ensure completion of post operations activities of inspection, storage and maintenance

Description

This NOS unit is about inspecting the finished goods produced for any damages, deformities and further repairing the parts produced so that the damaged/ defective pieces can be corrected and right quality components are supplied to 1. The customer/ end user 2. Internal manufacturing team

Scope

The welder will be responsible for

- inspection of finished goods
- maintaining records of finished production and defective pieces
- unloading and storage of finished goods The job holder will cover all types of Arc and Resistance welding methods for joining auto components and vehicle body. The role holder will interact with the assembly line, paint shop, maintenance team and material management team

Elements and Performance Criteria

Inspection of finished goods to detect any deviations from the product design

To be competent, the user/individual on the job must be able to:

- PC1.** ensure inspection of output products at defined frequency by comparing the dimensions of the output pieces with the specifications of the finished product using devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment
- PC2.** compare texture, color, surface properties, hardness and strength with the given product specifications described in the work order/ work instructions
- PC3.** separate the defective pieces into two categories pieces which can be repaired/ modified and pieces which are beyond repair by putting tags/ markings on the welded jig/ work piece surface
- PC4..** ensure that the pieces which are not ok and not meeting the specified standards and cannot be repaired are discarded
- PC5.** escalate all issues related to change in visual parameters, colour, surface properties, spots, hardness etc. so that the manufacturing equipment can be reset to achieve the specified output

Maintain records for production and defective pieces

To be competent, the user/individual on the job must be able to:

- PC6.** ensure the unit wise production data is captured in the prescribed format
- PC7.** ensure that the production log sheets are filled correctly at the end of the shift by the assistant operator
- PC8.** maintain data records for quality defects and pieces which are beyond repair
- PC9.** maintain data of process wise consumption of raw material

Unload and store the Finished Goods

To be competent, the user/individual on the job must be able to:

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- PC10..** ensure that the output pieces are correctly clamped and lifted using suitable equipment like hoist, lifts, crane, etc.
- PC11.** ensure that there is no damage to the lifted work pieces
- PC12.** carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc
- PC13.** ensure that the final ok output pieces are tagged and stored in the correct place/ transported to the next production station as per the process specified in the standard operating procedures /process flow diagrams

Ensure cleanliness and 5S is maintained at the workplace

To be competent, the user/individual on the job must be able to:

- PC14..** ensure that all fixtures, tools, equipment and spare parts are stored in an organized way as indicated in the equipment manual and the designated area as defined in the 5s manual of the organization
- PC15.** ensure that the relevant tags are put on items as per part number or serial number so that sorting of items becomes easy
- PC16.** ensure that the equipment and the work place are regularly cleaned and that there is not accumulation of dust, moisture and waste material

Conduct regular preventive maintenance of equipment

To be competent, the user/individual on the job must be able to:

- PC17.** check the working of all bearing, rollers, shafts etc and oil all moving parts of the equipment on a periodic basis
- PC18.** check the working of non moving parts and conduct preventive maintenance to prevent machine failure as per the checklist/ work instructions shared by the maintenance team
- PC19.** periodically check the equipment calibration status and report any non-conformance to the maintenance teams for rectification

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic process followed for inspection of the pieces
- KU2.** the Quality Management policy and manual of the organization
- KU3.** relevant standards and procedures followed in the company for the process of maintenance and equipment storage
- KU4.** functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution
- KU5.** techniques of using measurement instruments like rulers, Vernier calipers, micrometers, gauges and other inspection equipment
- KU6.** guidelines to identify quality defects in work pieces visual/ test based
- KU7.** methods used for cutting, shearing, hammering, drilling which can repair pieces with minor defects
- KU8.** basic level maintenance and cleaning techniques
- KU9.** various solvents, chemicals, lubricants etc. used during the maintenance processes
- KU10.** procedure for arranging the equipments and spare parts in the

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- KU11.** safety precautions to be taken during cleaning and maintenance activities prescribed manner including tagging and numbering of machineparts & spares
- KU12.** basic welding defects and corrective measures
- KU13.** basic level operations of lifting equipment like hoists, cranes, pulleyetc
- KU14.** fundamentals of 5S on the shop floor

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** document information from the sketches and engineering drawings
- GS2.** prepare draft drawings for the final output product note down observations (if any) related to the welding process
- GS3.** write information documents to internal departments/ internal teams or enter the information in online ERP systems under guidance of the supervisor
- GS4.** read and interpret engineering drawing and sketches
- GS5.** read and interpret symbols and measurements used in the drawings
- GS6.** read equipment manuals and process documents to understand the equipments and processes better
- GS7.** read internal information documents sent by internal teams
- GS8.** discuss task lists, schedules and activities with the supervisor
- GS9.** effectively communicate with the team members
- GS10.** question the operator/ Welding shop supervisor in order to understand the nature of the problem and to clarify queries
- GS11.** attentively listen with full attention and comprehend the information given by the speaker
- GS12.** plan and organize the work order and jobs received from the Operator
- GS13.** organize all process/ equipment manuals so that sorting/ accessing information is easy
- GS14.** support the supervisor in scheduling tasks for helper and assistant supervisor
- GS15.** use common sense and make judgments during day to day basis
- GS16.** use reasoning skills to identify and resolve basic problems
- GS17.** use intuition and keen observation to detect any potential problems which could arise during operations
- GS18.** follow instructions and work on areas of improvement identified
- GS19.** complete the assigned tasks with minimum supervision
- GS20.** complete the job defined by the supervisor within the timelines and quality norms
- GS21.** detect problems in day to day tasks
- GS22.** support supervisor in using specific problem solving techniques and detailing out the problems
- GS23.** discuss possible solution with the supervisor for problem solving
- GS24.** make decisions in emergency conditions in case the supervisor is not available(as per the authority matrix defined)
- GS25.** work in a CFT on new product development, problem solving

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Inspection of finished goods to detect any deviations from the product design</i>	9	27	-	-
PC1. ensure inspection of output products at defined frequency by comparing the dimensions of the output pieces with the specifications of the finished product using devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment	3	8	-	-
PC2. compare texture, color, surface properties, hardness and strength with the given product specifications described the in work order/ work instructions	3	8	-	-
PC3. separate the defective pieces into two categories pieces which can be repaired/ modified and pieces which are beyond repair by putting tags/ markings on the welded jig/ work piece surface	1	4	-	-
PC4.. ensure that the pieces which are not ok and not meeting the specified standards and cannot be repaired are discarded	1	4	-	-
PC5. escalate all issues related to change in visual parameters, colour, surface properties, spots, hardness etc. so that the manufacturing equipment can be reset to achieve the specified output	1	3	-	-
<i>Maintain records for production and defective pieces</i>	4	10	-	-
PC6. ensure the unit wise production data is captured in the prescribed format	1	3	-	-
PC7. ensure that the production log sheets are filled correctly at the end of the shift by the assistant operator	1	3	-	-
PC8. maintain data records for quality defects and pieces which are beyond repair	1	2	-	-
PC9. maintain data of process wise consumption of raw material	1	2	-	-
<i>Unload and store the Finished Goods</i>	4	15	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. ensure that the output pieces are correctly clamped and lifted using suitable equipment like hoist, lifts, crane, etc.	1	4	-	-
PC11. ensure that there is no damage to the lifted work pieces	1	4	-	-
PC12. carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc	1	4	-	-
PC13. ensure that the final ok output pieces are tagged and stored in the correct place/ transported to the next production station as per the process specified in the standard operating procedures /process flow diagrams	1	3	-	-
<i>Ensure cleanliness and 5S is maintained at the workplace</i>	3	11	-	-
PC14. ensure that all fixtures, tools, equipment and spare parts are stored in an organized way as indicated in the equipment manual and the designated area as defined in the 5s manual of the organization	1	4	-	-
PC15. ensure that the relevant tags are put on items as per part number or serial number so that sorting of items becomes easy	1	3	-	-
PC16. ensure that the equipment and the work place are regularly cleaned and that there is not accumulation of dust, moisture and waste material	1	4	-	-
<i>Conduct regular preventive maintenance of equipment</i>	5	12	-	-
PC17. check the working of all bearing, rollers, shafts etc and oil all moving parts of the equipment on a periodic basis	2	4	-	-
PC18. check the working of non moving parts and conduct preventive maintenance to prevent machine failure as per the checklist/ work instructions shared by the maintenance team	2	4	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. periodically check the equipment calibration status and report any non-conformance to the maintenance teams for rectification	1	4	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3112
NOS Name	Ensure completion of post operations activities of inspection, storage and maintenance
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	4
Credits	NA
Version	1.0
Next Review Date	30/08/2015

Qualification Pack

ASC/N4201: Understanding work requirements and setting up the apparatus for soldering and brazing

Description

This NOS unit is about analysing the work requirements by interpreting the drawings and sketches provided by the supervisor, understanding measurement dimensions and applying the knowledge to determine the process which needs to be followed to create the work order as per the specifications mentioned in the work order followed by arranging for suitable equipment required for the soldering and brazing activities

Scope

The technician will be responsible for

- understanding the work order, engineering drawing and sketches
- storing the drawings in the correct place
- escalations of any queries regarding the job The job holder will cover all types soldering and brazing methods for joining auto components and vehicle body. The role holder will interact with the assembly line, paint shop, maintenance team and material management team

Elements and Performance Criteria

Identify the right drawing and process to be used for soldering and brazing process

To be competent, the user/individual on the job must be able to:

- PC1.** . check the version of the engineering drawing provided and select the latest version of the available engineering drawing so that the final measurements and design is available with the team
- PC2.** . thoroughly understand the work order (work output trial or production) required from the process
- PC3..** refer all engineering drawings and sketches related to the work output to understand the measurement dimensions, geometric dimensions and shape of the required work output
- PC4.** . identify the required activities which need to be executed in order achieve the final output as per the work order
- PC5.** . ensure that the processes adopted including parameters and process sequences are according to the work instructions/ standard operating procedures adopted
- PC6.** . understand the checking method and the frequency as mentioned in the work instructions
- PC7..** clearly understanding the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors

Understand the process requirements, related equipment and parameters to be set for the process

To be competent, the user/individual on the job must be able to:

- PC8.** . understand the right soldering and brazing methodology and process to be adopted for completing the work order through discussions with the supervisor/ master technician for the new job and reading the process manuals/ work instructions/standard operating procedures for the production job

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- PC9.** . understand the process parameters like temperature, pressure, electrode/ rod type, electrode/ rod distance, process cycle time, gas discharge flow rate, flame temperature, flame size etc. before starting the process, as mentioned in the work instructions/ sop manual
- PC10.** . understand the material required and the equipment availability for executing the activity
- PC11..** understand the type of torches, brazing guns, brazing alloys, type of flux and solder used for the soldering and brazing process
- PC12..** understand the application of fixtures, process sequence, poka yoke as applicable

Setup the soldering and the brazing equipment for the process

To be competent, the user/individual on the job must be able to:

- PC13..** ensure that the required material is procured from the store before starting the welding process
- PC14..** ensure that the helper/ assistant technician brings the required material and tools before the start of the welding operations
- PC15.** . ensure that the helper/ assistant operator cleans the surface of the soldering rod/ brazing gun, wire reels, flux hoppers to remove dust and any other impurities
- PC16..** setup the soldering and brazing apparatus as per the selected welding process and the internal sops/ work instructions and the setting standards for the machine
- PC17..** ensure that the hopper is filled with the flux to make the flux flow over the brazed joints in the specified manner
- PC18..** load the brazing wire in the wire reel holder of the brazing apparatus

Escalations of queries on the given job

To be competent, the user/individual on the job must be able to:

- PC19..** refer the queries to a competent internal specialist if they cannot be resolved by the welder on own
- PC20..** obtain help or advice from specialist if the problem is outside the area of competence or experience
- PC21..** confirm self-understanding to the specialist during discussion so that all doubts & queries can be resolved before the actual process execution

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant process standards and procedures followed in the company
- KU2.** different types of products manufactured by the company
- KU3.** Internal processes like store management, inventory management, quality management and key contact points for query resolution
- KU4.** sketches and engineering drawings and how to interpret meaningful information from the drawings
- KU5.** dimensions and characteristics of the final product output
- KU6.** different types of soldering and brazing processes and associated equipment
- KU7.** different types of welds and joints

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- KU8.** different types of flux/ solder material used for soldering & brazing and their chemical properties
- KU9.** different processes used in brazing, soldering and metallurgy
- KU10.** basic principles of geometric shapes, tolerances and drawing
- KU11.** the impact of various physical parameters like temperature, pressure, , cycle time, electrode distance, gas flow, flame properties on the properties of final output product like durability, strength etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** document information from the sketches and engineering drawings
- GS2.** prepare draft drawings for the final output product
- GS3.** note down observations (if any) related to the welding process
- GS4.** write information documents to internal departments/ internal teams or enter the information in online ERP systems under guidance of the supervisor
- GS5.** read and interpret engineering drawing and sketches
- GS6.** read and interpret symbols and measurements used in the drawings
- GS7.** read equipment manuals and process documents to understand the equipment and processes better
- GS8.** read internal information documents sent by internal teams
- GS9.** discuss task lists, schedules and activities with the supervisor
- GS10.** effectively communicate with the team members
- GS11.** question the shop supervisor in order to understand the nature of the problem and to clarify queries
- GS12.** attentively listen with full attention and comprehend the information given by the speaker
- GS13.** plan and organize the work order and jobs received from the supervisor
- GS14.** organize all process/ equipment manuals so that sorting/ accessing information is easy
- GS15.** support the supervisor in scheduling tasks for helper
- GS16.** use common sense and make judgments during day to day basis
- GS17.** use reasoning skills to identify and resolve basic problems
- GS18.** use intuition to detect any potential problems which could arise during operations
- GS19.** use acquired knowledge of the process for new developments , trials
- GS20.** follow instructions and work on areas of improvement identified
- GS21.** complete the assigned tasks with minimum supervision SB10. complete the job defined by the supervisor within the timelines & quality norms
- GS22.** detect problems in day to day tasks with keen observations
- GS23.** support supervisor in using specific problem solving techniques and detailing out the problems
- GS24.** discuss possible solution with the supervisor for problem solving
- GS25.** make decisions in emergency conditions in case the supervisor is not available(as per the authority matrix defined by the organization)

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify the right drawing and process to be used for soldering and brazing process</i>	10	23	-	-
PC1. . check the version of the engineering drawing provided and select the latest version of the available engineering drawing so that the final measurements and design is available with the team	2	4	-	-
PC2. . thoroughly understand the work order (work output trial or production) required from the process	1	3	-	-
PC3.. refer all engineering drawings and sketches related to the work output to understand the measurement dimensions, geometric dimensions and shape of the required work output	2	3	-	-
PC4. . identify the required activities which need to be executed in order achieve the final output as per the work order	2	4	-	-
PC5. . ensure that the processes adopted including parameters and process sequences are according to the work instructions/ standard operating procedures adopted	1	3	-	-
PC6. . understand the checking method and the frequency as mentioned in the work instructions	1	3	-	-
PC7.. clearly understanding the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors	1	3	-	-
<i>Understand the process requirements, related equipment and parameters to be set for the process</i>	10	15	-	-
PC8. . understand the right soldering and brazing methodology and process to be adopted for completing the work order through discussions with the supervisor/ master technician for the new job and reading the process manuals/ work instructions/standard operating procedures for the production job	2	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. . understand the process parameters like temperature, pressure, electrode/ rod type, electrode/ rod distance, process cycle time, gas discharge flow rate, flame temperature, flame size etc. before starting the process, as mentioned in the work instructions/ sop manual	2	3	-	-
PC10. . understand the material required and the equipment availability for executing the activity	2	3	-	-
PC11.. understand the type of torches, brazing guns, brazing alloys, type of flux and solder used for the soldering and brazing process	2	3	-	-
PC12.. understand the application of fixtures, process sequence, poka yoke as applicable	2	3	-	-
<i>Setup the soldering and the brazing equipment for the process</i>	7	22	-	-
PC13.. ensure that the required material is procured from the store before starting the welding process	1	4	-	-
PC14.. ensure that the helper/ assistant technician brings the required material and tools before the start of the welding operations	1	3	-	-
PC15. . ensure that the helper/ assistant operator cleans the surface of the soldering rod/ brazing gun, wire reels, flux hoppers to remove dust and any other impurities	1	4	-	-
PC16.. setup the soldering and brazing apparatus as per the selected welding process and the internal sops/ work instructions and the setting standards for the machine	2	4	-	-
PC17.. ensure that the hopper is filled with the flux to make the flux flow over the brazed joints in the specified manner	1	3	-	-
PC18.. load the brazing wire in the wire reel holder of the brazing apparatus	1	4	-	-
<i>Escalations of queries on the given job</i>	3	10	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19.. refer the queries to a competent internal specialist if they cannot be resolved by the welder on own	1	3	-	-
PC20.. obtain help or advice from specialist if the problem is outside the area of competence or experience	1	4	-	-
PC21.. confirm self-understanding to the specialist during discussion so that all doubts & queries can be resolved before the actual process execution	1	3	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N4201
NOS Name	Understanding work requirements and setting up the apparatus for soldering and brazing
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Soldering and Brazing
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/11/2015

Qualification Pack

ASC/N4202: Conduct the brazing and soldering process to join the work pieces

Description

This NOS is about conducting the soldering and brazing operation as per the methodology selected and the Standard Operating Procedures defined by the Organization

Scope

The technician will be responsible for

- installing the work pieces
- conducting actual soldering and brazing process
- monitoring process parameters
- The job holder will cover all types soldering and brazing methods for joining auto components and vehicle body. The role holder will interact with the assembly line, paint shop, maintenance team and material management team

Elements and Performance Criteria

Installing the work pieces and equipment for the soldering and brazing process

To be competent, the user/individual on the job must be able to:

- PC1.** hold the parts (jigs) which need to be soldered/ brazed together using a clamp and align them as per the job requirement so that the work pieces do not fall down/ turn
- PC2.** install the work pieces on the soldering and brazing apparatus keeping in mind the electrodes distance, contact area, pressure, temperature application, speed of gas flow etc. as specified in the welding sop/ control plan documents/work instructions
- PC3.** check for operation of core equipment like brazing gun, soldering iron/ rod, gas cylinders and gas discharge guns as per setup documentation/ work instructions/ sop

Conduct the actual soldering process

To be competent, the user/individual on the job must be able to:

- PC4.** apply the solder in a molten condition on the parts, joints/ work pieces which need to be soldered together
- PC5.** heat the soldering rods/ irons to be desired temperature required for soldering process
- PC6.** apply the heated soldering rod by keeping it at a distance and angle as specified in the work instructions/ sop
- PC7.** ensure that the solder flux is melting at the right place and bonding the work pieces as per requirement
- PC8.** upon completion of the process, remove the rod from the metal contact and clean the tip of the soldering rod/ iron to remove any excess metal and impurities

Conduct the actual brazing process

To be competent, the user/individual on the job must be able to:

- PC9.** verify the connections of the oxygen acetylene cylinder and check the operations of the valves and torch

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- PC10.** turn on the gas cylinder regulator value to regulate the flow of brazing gases like oxygen & acetylene in the brazing gun and ensure that the flame is produced of the required temperature
- PC11.** regulate the electric current, voltage and process cycle time as per the process requirement
- PC12.** ensure that the brazing torch is uniformly moved across the area under brazing and melts the brass wire/ molten alloy to join the work pieces which were clamped together
- PC13.** remove the brazed joint and dip it in cold water/ coolant to cool the joint. dipping also ensures that in case there is a leakage in the joint, the brazing operator can observe air bubbles in the cooling tank

Monitor process parameters to ensure error free soldering and brazing process

To be competent, the user/individual on the job must be able to:

- PC14.** monitor the soldering and brazing process (pressure, temperature, gas discharge flow, iron/ rod/ electrode force, electrode distance etc.) by observing the readings on the panels/ measuring instruments to prevent any harm to the workpieces due to overheating, burning, over melting, change in applied pressure etc.
- PC15.** ensure that the assistant operators/ helpers note down the observations in the prescribed format
- PC16.** observe and analyze any irregularity in the process and take preventive steps so that the overall quality of the joint is as per the desired standards
- PC17.** inform the supervisor of any irregularity in process/ equipment malfunctioning
- PC18.** ensure frequency of setting, checking, recording as per wi

Measure the two parts (work pieces) welded and remove welding inconsistency

To be competent, the user/individual on the job must be able to:

- PC19.** measure the final welded piece and compare the dimensions as prescribed in the work order engineering drawing
- PC20.** in case the parts are not as per the given measurements, ensure that the assistant operators/ helpers remove extra material by using chippers, grinders etc.
- PC21.** in case of any dents or bulges, ensure hammering of the bulge to give the work pieces the desired shape
- PC22.** keep the supervisor informed of any inconsistency in the welding process, quality issues etc. so that the same can be dealt immediately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant manufacturing standards and procedures followed in the company
- KU2.** different types of products manufactured by the company
- KU3.** functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution
- KU4.** quality norms and standards prescribed in the Quality documentation by the organization for welding & the specified job
- KU5.** different types of soldering and brazing processes
- KU6.** different types of joints used and their metallurgical properties

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- KU7.** different cleaning methods for soldering irons, brazing rods, torch tips, electrodes, metal surfaces etc.
- KU8.** metallurgical properties of the work pieces under soldering/ brazing
- KU9.** the methods of using instruments like Vernier calipers, Micrometres, rulers and other inspection tools
- KU10.** various national and international welding standards and symbols
- KU11.** how to read and interpret sketches & engineering drawings
- KU12.** how to visually represent the final product output and hence decide on the key steps to be followed for soldering and brazing
- KU13.** different types of defects in soldering/ brazing and their impact
- KU14.** potential health and safety hazards and related Safety precautions to be undertaken during the brazing and soldering process
- KU15.** basic chemical properties of material used for electrodes, flux, brazing gases etc
- KU16.** basic knowledge of electrical laws and working of welding transformers, capacitors etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** document information from the sketches and engineering drawings
- GS2.** note measurements, equipment panel readings for various process parameters in the required reporting formats
- GS3.** read and interpret engineering drawing and sketches
- GS4.** read equipment manuals and process documents to understand the equipment and processes better
- GS5.** read internal information documents sent by internal customers (other functions within the organization) for the equipment in the plant area
- GS6.** read parameter reading on various types of monitoring panels
- GS7.** discuss task lists, schedules and activities with the supervisor effectively communicate with the team members
- GS8.** question the shop supervisor in order to understand the nature of the problem and to clarify queries
- GS9.** attentively listen with full attention and comprehend the information given by the speaker
- GS10.** plan and organize the work order and jobs received from the supervisor
- GS11.** organize all process/ equipment manuals so that sorting/accessing information is easy
- GS12.** support the supervisor in scheduling tasks for helper and assistant operator
- GS13.** use common sense and make judgments during day to day basis
- GS14.** use reasoning skills to identify and resolve basic problems
- GS15.** use intuition to detect any potential problems which could arise during operations
- GS16.** follow instructions and work on areas of improvement identified
- GS17.** complete the assigned tasks with minimum supervision
- GS18.** complete the job defined by the supervisor within the timeline and quality norms
- GS19.** how to detect problems in day to day activities

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- GS20.** support supervisor in using specific problem solving techniques and detailing out the problems
- GS21.** discuss possible solution with the supervisor for problem solving
- GS22.** make decisions in emergency conditions in case the supervisor is not available (as per the authority matrix defined by the organization)
- GS23.** support the supervisor and master technique in problem solving using specific problem solving techniques
- GS24.** identify defective parts in the manufacturing line by
- GS25.** comparing manufactured pieces with the specified work standard
- GS26.** guide the helper and the assistant operator in maintaining the quality
- GS27.** quality Standards as described in the internal Quality Manual
- GS28.** relate the impact of various processes and parameters to the product quality

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Installing the work pieces and equipment for the soldering and brazing process</i>	4	10	-	-
PC1. hold the parts (jigs) which need to be soldered/ brazed together using a clamp and align them as per the job requirement so that the work pieces do not fall down/ turn	1	3	-	-
PC2. install the work pieces on the soldering and brazing apparatus keeping in mind the electrodes distance, contact area, pressure, temperature application, speed of gas flow etc. as specified in the welding sop/ control plan documents/work instructions	2	4	-	-
PC3. check for operation of core equipment like brazing gun, soldering iron/ rod, gas cylinders and gas discharge guns as per setup documentation/ work instructions/ sop	1	3	-	-
<i>Conduct the actual soldering process</i>	5	16	-	-
PC4. apply the solder in a molten condition on the parts, joints/ work pieces which need to be soldered together	1	3	-	-
PC5. heat the soldering rods/ irons to be desired temperature required for soldering process	1	3	-	-
PC6. apply the heated soldering rod by keeping it at a distance and angle as specified in the work instructions/ sop	1	4	-	-
PC7. ensure that the solder flux is melting at the right place and bonding the work pieces as per requirement	1	3	-	-
PC8. upon completion of the process, remove the rod from the metal contact and clean the tip of the soldering rod/ iron to remove any excess metal and impurities	1	3	-	-
<i>Conduct the actual brazing process</i>	8	15	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. verify the connections of the oxygen acetylene cylinder and check the operations of the valves and torch	2	3	-	-
PC10. turn on the gas cylinder regulator value to regulate the flow of brazing gases like oxygen & acetylene in the brazing gun and ensure that the flame is produced of the required temperature	2	3	-	-
PC11. regulate the electric current, voltage and process cycle time as per the process requirement	2	3	-	-
PC12. ensure that the brazing torch is uniformly moved across the area under brazing and melts the brass wire/ molten alloy to join the work pieces which were clamped together	1	3	-	-
PC13. remove the brazed joint and dip it in cold water/ coolant to cool the joint. dipping also ensures that in case there is a leakage in the joint, the brazing operator can observe air bubbles in the cooling tank	1	3	-	-
<i>Monitor process parameters to ensure error free soldering and brazing process</i>	7	17	-	-
PC14. monitor the soldering and brazing process (pressure, temperature, gas discharge flow, iron/ rod/ electrode force, electrode distance etc.) by observing the readings on the panels/ measuring instruments to prevent any harm to the workpieces due to overheating, burning, over melting, change in applied pressure etc.	2	4	-	-
PC15. ensure that the assistant operators/ helpers note down the observations in the prescribed format	1	3	-	-
PC16. observe and analyze any irregularity in the process and take preventive steps so that the overall quality of the joint is as per the desired standards	2	4	-	-
PC17. inform the supervisor of any irregularity in process/ equipment malfunctioning	1	3	-	-
PC18. ensure frequency of setting, checking, recording as per wi	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Measure the two parts (work pieces) welded and remove welding inconsistency</i>	6	12	-	-
PC19. measure the final welded piece and compare the dimensions as prescribed in the work order engineering drawing	2	4	-	-
PC20. in case the parts are not as per the given measurements, ensure that the assistant operators/ helpers remove extra material by using chippers, grinders etc.	1	3	-	-
PC21. in case of any dents or bulges, ensure hammering of the bulge to give the work pieces the desired shape	1	3	-	-
PC22. keep the supervisor informed of any inconsistency in the welding process, quality issues etc. so that the same can be dealt immediately	2	2	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N4202
NOS Name	Conduct the brazing and soldering process to join the work pieces
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Soldering and Brazing
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/11/2015

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to

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successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N0006.Maintain a safe and healthy working environment	25	75	-	-	100	15
ASC/N0021.Maintain 5S at the work premises	25	75	-	-	100	15
ASC/N3112.Ensure completion of post operations activities of inspection, storage and maintenance	25	75	-	-	100	20
ASC/N4201.Understanding work requirements and setting up the apparatus for soldering and brazing	30	70	-	-	100	25
ASC/N4202.Conduct the brazing and soldering process to join the work pieces	30	70	-	-	100	25
Total	135	365	-	-	500	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

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Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

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Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.