



Auto Body Painting Technician Level 4

QP Code: ASC/Q3304

Version: 1.0

NSQF Level: 4

Automotive || 153, GF, Okhla Industrial Area, Phase 3
New Delhi 110020 || email:richie@asdc.org.in

Contents

ASC/Q3304: Auto Body Painting Technician Level 4	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
ASC/N0006: Maintain a safe and healthy working environment	5
ASC/N0021: Maintain 5S at the work premises	10
ASC/N3309: Understand process and equipment requirement to complete the task	17
ASC/N3310: Preparing the painting machine, auxiliary apparatus and metal work pieces for the painting process	22
ASC/N3311: Performing the Painting operation	27
ASC/N3312: Performing the Touch up and Final Inspection	32
Assessment Guidelines and Weightage	36
<i>Assessment Guidelines</i>	36
<i>Assessment Weightage</i>	36
Acronyms	38
Glossary	39

ASC/Q3304: Auto Body Painting Technician Level 4

Brief Job Description

A painting technician would do final painting , touch up and inspection of the body of the vehicle under painting.

Personal Attributes

The person should have the attributes like Correct Vision & dexterity, No Color Blindness, Non Allergic to Chemicals and Paints and Thinner, Hand Eye Coordination, Ability to work in difficult environment, orientation to safety and quality, Patience and attitude to conduct repeated operations.

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/N3309: Understand process and equipment requirement to complete the task](#)
4. [ASC/N3310: Preparing the painting machine, auxiliary apparatus and metal work pieces for the painting process](#)
5. [ASC/N3311: Performing the Painting operation](#)
6. [ASC/N3312: Performing the Touch up and Final Inspection](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Painting
Country	India
NSQF Level	4
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7132.0203

Minimum Educational Qualification & Experience	I.T.I (Mechanical/Painting Technology) with 3-5 years of experience Painting process
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Different Painting techniques used in organizations 5S and Safety Problem solving Quality Management
Minimum Job Entry Age	18 Years
Last Reviewed On	15/09/2013
Next Review Date	30/09/2021
Deactivation Date	30/09/2021
NSQC Approval Date	20/07/2015
Version	1.0
Reference code on NQR	2015/AUT/ASDC/00579
NQR Version	1.0

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:

- 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

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	-	-

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	-	-

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
Last Reviewed Date	15/09/2013
Next Review Date	31/03/2022
NSQC Clearance Date	20/07/2015

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

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:

- 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.

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

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	-	-
<i>Ensure proper documentation and storage (organizing , streamlining)</i>	3	9	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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 good condition 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	-	-
PC22. follow the daily cleaning standards and schedules to create a clean working environment	1	3	-	-

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

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
Last Reviewed Date	28/04/2022
Next Review Date	03/11/2027
NSQC Clearance Date	03/11/2022

ASC/N3309: Understand process and equipment requirement to complete the task

Description

This NOS is about understanding the job requirement, what processes need to be executed, what equipments will be used for the project and what is the required output considering the standards specified

Scope

The Painting Technician will be responsible for

- understanding the process and equipment requirements
- escalations of any queries regarding the job The job holder will cover both manual painting and automatic painting methods for painting auto components and vehicle body. The role holder will interact with the Assembly line, Weldshop, maintenance team and material management team

Elements and Performance Criteria

Understand the process requirements, painting equipment and parameters

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

- PC1.** . understand the right painting methodology and process to be adopted for completing the work order through discussions with the supervisor/ master technician and reading the process manuals/ work instructions/standard operating procedures
- PC2.** . understand the various painting process parameters like temperature, air pressure, thinner pressure, paint pressure in the pipe lines, gun type, gun distance, cycle time etc before starting the painting process, as mentioned in the work instructions/ sop manual
- PC3.** . understand the material required and the equipment availability for executing the activity
- PC4.** . understand the paint and thinner ratio to be used for the painting process
- PC5.** . understand 5 s related to the work station, line area
- PC6.** . clearly understanding the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors

Escalations of queries on the given job

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

- PC7.** . refer the queries to a competent internal specialist if they cannot be resolved by the painter on own
- PC8.** . obtain help or advice from specialist if the problem is outside his/her area of competence or experience
- PC9.** . confirm self-understanding with the specialist holding discussions 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 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.** different types of painting processes and associated equipments
- KU5.** different types of guns
- KU6.** the method of reading and interpreting the various gauges
- KU7.** how to visualize the final product output and conduct quality verification tests.
- KU8.** the impact of various physical parameters like temperature, pressure, gun distance, electric current, voltage on the properties of final output product like durability, surface finish etc
- KU9.** hazards and safety aspects involved in painting activities and usage of relevant PPEs

Generic Skills (GS)

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

- GS1.** document information
- GS2.** note down observations (if any) related to the painting 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 technical specifications of the paint specimen
- GS5.** read equipment manuals and process documents to understand the equipments and processes better
- GS6.** read internal information documents sent by internal teams
- GS7.** discuss task lists, schedules and activities with the supervisor
- GS8.** effectively communicate with the team members
- GS9.** question the painting shop supervisor in order to understand the nature of the problem and to clarify queries
- GS10.** attentively listen with full attention and comprehend the information given by the speaker
- GS11.** plan and organize the work order and jobs received from the Operator
- GS12.** organize all process/ equipment manuals so that sorting/ accessing information is easy
- GS13.** support the supervisor in scheduling tasks for helper and assistant supervisor
- GS14.** use common sense and make judgments during day to day basis
- GS15.** use reasoning skills to identify and resolve basic problems
- GS16.** use intuition and keen observation skills to detect any potential problems which could arise during operations
- GS17.** follow instructions and work on areas of improvement identified
- GS18.** complete the assigned tasks with minimum supervision
- GS19.** complete the job defined by the supervisor within timelines and quality norms
- GS20.** detect problems in day to day tasks
- GS21.** support supervisor in using specific problem solving techniques and detailing out the problems
- GS22.** discuss possible solution with the supervisor for problem solving

GS23. make decisions in emergency conditions in case the supervisor is not available(as per the authority matrix defined by the organization)

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Understand the process requirements, painting equipment and parameters</i>	24	52	-	-
PC1. . understand the right painting methodology and process to be adopted for completing the work order through discussions with the supervisor/ master technician and reading the process manuals/ work instructions/standard operating procedures	5	10	-	-
PC2. . understand the various painting process parameters like temperature, air pressure, thinner pressure, paint pressure in the pipe lines, gun type, gun distance, cycle time etc before starting the painting process, as mentioned in the work instructions/ sop manual	5	10	-	-
PC3. . understand the material required and the equipment availability for executing the activity	4	10	-	-
PC4. . understand the paint and thinner ratio to be used for the painting process	4	8	-	-
PC5. . understand 5 s related to the work station, line area	3	7	-	-
PC6. . clearly understanding the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors	3	7	-	-
<i>Escalations of queries on the given job</i>	6	18	-	-
PC7. . refer the queries to a competent internal specialist if they cannot be resolved by the painter on own	2	6	-	-
PC8. . obtain help or advice from specialist if the problem is outside his/her area of competence or experience	2	6	-	-
PC9. . confirm self-understanding with the specialist holding discussions so that all doubts & queries can be resolved before the actual process execution	2	6	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3309
NOS Name	Understand process and equipment requirement to complete the task
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Painting
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/09/2015

ASC/N3310: Preparing the painting machine, auxiliary apparatus and metal work pieces for the painting process

Description

This NOS unit is about preparing the surface of the metal parts by removing dust, moistures etc, cleaning the painting apparatus and installing the metal parts and electrodes on the painting machine/ assembly block

Scope

The Painting Technician will be responsible for

- arranging the equipment and material required for the process
- cleaning the painting equipment and preparing the surface of the parts
- Escalations of any queries regarding the job The job holder will cover both manual painting and automatic painting methods for painting auto components and vehicle body. The role holder will interact with the Assembly line, Weld shop, maintenance team and material management team

Elements and Performance Criteria

Arrange for equipment, PPEs and material as per the requirement

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

- PC1..** understand the material required and the equipment availability for executing the activity
- PC2. .** ensure that the required material is procured from the store before starting the painting process
- PC3. .** ensure that the helper/ assistant technician brings the required material and tools before the start of the painting operations

Clean the painting equipment before executing the painting process and setup the equipment

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

- PC4. .** ensure that the helper/ assistant operator cleans the surface of the painting gun to remove dust and any other impurities
- PC5..** setup the painting apparatus as per the selected painting process and the internal sops/ work instructions and the setting standards for the machine

Prepare the surface of the part (work pieces) on which painting needs to be conducted

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

- PC6. .** ensure that the helper/ assistant operator cleans the surface of the metal parts(work pieces) which need to be painted
- PC7. .** ensure that the pre-treatment is completed as per the quality standards .

Escalations of queries for the given job

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

- PC8. .** immediately refer the queries to the supervisor to avoid any delay in the actual process
- PC9. .** confirm self understanding to the supervisor/ master technician during the discussions 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 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.** different types of painting processes and associated equipments
- KU5.** different types of guns
- KU6.** the method of reading and interpreting the various gauges
- KU7.** how to visualize the final product output and conduct quality verification tests
- KU8.** the impact of various physical parameters like temperature, pressure, gun distance, electric current, voltage on the properties of final output product parameters like adhesion, durability, surface finish etc
- KU9.** hazards and safety aspects involved in painting activities and usage of relevant PPEs

Generic Skills (GS)

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

- GS1.** document information
- GS2.** note down observations (if any) related to the painting 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 technical specifications of the paint specimen
- GS5.** read equipment manuals and process documents to understand the equipments and processes better
- GS6.** read internal information documents sent by internal teams
- GS7.** discuss task lists, schedules and activities with the supervisor
- GS8.** effectively communicate with the team members
- GS9.** question the painting shop supervisor in order to understand the nature of the problem and to clarify queries
- GS10.** attentively listen with full attention and comprehend the information given by the speaker
- GS11.** plan and organize the work order and jobs received from the Operator
- GS12.** organize all process/ equipment manuals so that sorting/ accessing information is easy
- GS13.** visualize the final job product after understanding the given drawing/ sketches
- GS14.** co relate the type of job output required with the painting methodology to be used
- GS15.** identify the strengths and weakness of various painting process
- GS16.** use common sense and make judgments during day to day basis
- GS17.** use reasoning skills to identify and resolve basic problems
- GS18.** follow instructions and work on areas of improvement identified complete the assigned tasks with minimum supervision
- GS19.** complete the job defined by the supervisor within the timelines and quality norms
- GS20.** take self initiatives in driving small projects with the supervisor like operation improvement, training of helpers and assistant operators, 5S, Kaizen etc

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Arrange for equipment, PPEs and material as per the requirement</i>	7	26	-	-
PC1. . understand the material required and the equipment availability for executing the activity	3	8	-	-
PC2. . ensure that the required material is procured from the store before starting the painting process	1	8	-	-
PC3. . ensure that the helper/ assistant technician brings the required material and tools before the start of the painting operations	3	10	-	-
<i>Clean the painting equipment before executing the painting process and setup the equipment</i>	7	20	-	-
PC4. . ensure that the helper/ assistant operator cleans the surface of the painting gun to remove dust and any other impurities	3	8	-	-
PC5. .. setup the painting apparatus as per the selected painting process and the internal sops/ work instructions and the setting standards for the machine	4	12	-	-
<i>Prepare the surface of the part (work pieces) on which painting needs to be conducted</i>	4	20	-	-
PC6. . ensure that the helper/ assistant operator cleans the surface of the metal parts(work pieces) which need to be painted	2	10	-	-
PC7. . ensure that the pre-treatment is completed as per the quality standards .	2	10	-	-
<i>Escalations of queries for the given job</i>	2	14	-	-
PC8. . immediately refer the queries to the supervisor to avoid any delay in the actual process	1	7	-	-
PC9. . confirm self understanding to the supervisor/ master technician during the discussions so that all doubts & queries can be resolved before the actual process execution	1	7	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	20	80	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3310
NOS Name	Preparing the painting machine, auxiliary apparatus and metal work pieces for the painting process
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Painting
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/09/2015

ASC/N3311: Performing the Painting operation

Description

This NOS is about conducting the Body Top Coat Painting

Scope

The Painting Technician will be responsible for

- cleaning to body to remove any dust
- setting up and operating the painting booth, atomizer and air compressor
- cleaning the painting equipment and preparing the surface of the parts
- Escalations of any queries regarding the job The job holder will cover both manual painting and automatic painting methods for painting auto components and vehicle body. The role holder will interact with the Assembly line, Weld shop, maintenance team and material management team

Elements and Performance Criteria

Clean the body before painting

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

PC1.. ensure that the body is free from all dust particles

Check the balancing of the booth and atomizer setting

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

PC2. . parameter must be in the specified range, if these are not in the range then paint defects like orange peel, overspray may appear

PC3. . if the booth is not balanced inform the control room or supervisor

PC4. . ensure that the paint atomizer is cleaned and required solvent and air pressure is maintained

PC5.. if the paint pressure is out of range then defect like rundown or thin paint may appears

Check booster and bell cup operations during painting

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

PC6. . check the air booster compressor by starting it. in case air booster does not start immediately inform control room or supervisor.

PC7. . ensure that the bell cup is properly fit on each atomizer

PC8.. at shift end remove the bell cup, clean it and keep it in bell cup box

PC9. . insert the model no as per model

Check the home position of each robot Do purging Select automatic button

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

PC10.. body must be in home position prior to starting of painting.

PC11.. operate station start , verify that it is displayed on screen

PC12.. do long purging and short purging

PC13. . select the button as per requirement, for final painting

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards and procedures followed in the company
- KU2.** different types of products manufactured by the company
- KU3.** knowledge of functional processes like store management, inventory management, quality management and key contact points for query resolution
- KU4.** different types of defects which may arise due to improper booth parameters
- KU5.** knowledge on how to operate both in automatic and manual mode
- KU6.** ability to visualize the final product output and hence decide on the key steps to be followed

Generic Skills (GS)

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

- GS1.** document information
- GS2.** read equipment manuals and process documents to understand the equipments and processes better
- GS3.** read internal information memos send by internal customers (other functions within the organization)
- GS4.** discuss task lists, schedules, and work-loads with co-workers
- GS5.** question internal customers/ paint shop supervisor in order to understand the nature of the problem and make a diagnosis
- GS6.** plan and organize the work order and jobs received from the internal customers
- GS7.** plan and organize the design/ process/quality documents received from internal customers
- GS8.** organize all process/ equipment manuals so that sorting out information is fast
- GS9.** carefully analyze the body part for various painting defects at every tank level
- GS10.** carefully run the production line with relevant actions as listed in SOP/WI if some delay, or power supply problem happens

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Clean the body before painting</i>	2	5	-	-
PC1.. ensure that the body is free from all dust particles	2	5	-	-
<i>Check the balancing of the booth and atomizer setting</i>	9	24	-	-
PC2. . parameter must be in the specified range, if these are not in the range then paint defects like orange peel, overspray may appear	3	7	-	-
PC3. . if the booth is not balanced inform the control room or supervisor	1	5	-	-
PC4. . ensure that the paint atomizer is cleaned and required solvent and air pressure is maintained	2	7	-	-
PC5.. if the paint pressure is out of range then defect like rundown or thin paint may appears	3	5	-	-
<i>Check booster and bell cup operations during painting</i>	6	22	-	-
PC6. . check the air booster compressor by starting it. in case air booster does not start immediately inform control room or supervisor.	2	5	-	-
PC7. . ensure that the bell cup is properly fit on each atomizer	2	7	-	-
PC8.. at shift end remove the bell cup, clean it and keep it in bell cup box	1	5	-	-
PC9. . insert the model no as per model	1	5	-	-
<i>Check the home position of each robot Do purging Select automatic button</i>	8	24	-	-
PC10.. body must be in home position prior to starting of painting.	1	4	-	-
PC11.. operate station start , verify that it is displayed on screen	2	7	-	-
PC12.. do long purging and short purging	3	7	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. . select the button as per requirement, for final painting	2	6	-	-
NOS Total	25	75	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3311
NOS Name	Performing the Painting operation
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Painting
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/09/2015

ASC/N3312: Performing the Touch up and Final Inspection

Description

This NOS is about conducting Body Touch Up and Final inspection

Scope

The Painting Technician will be responsible for

- sanding, sealing and filling activities
- polishing and final touch up
- Inspection of completed work pieces
- Escalations of any queries regarding the job The job holder will cover both manual painting and automatic painting methods for painting auto components and vehicle body. The role holder will interact with the Assembly line, Weld shop, maintenance team and material management team

Elements and Performance Criteria

Ensure sanding on defective areas of the body for Paint defects

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

PC1. . after sanding please ensure there must be no edge at corners of the sanded area.

Apply air dry sealant in areas where defects/ cracks are observed

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

PC2. . ensure that the air dry sealant is applied on the areas

PC3. . sealant to be applied with sealant gun and then rectification- application to be done for smooth finish

Do sanding and filling of putty

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

PC4. . do putty application with the help of putty knife and after putty application bake in infrared lamp

PC5. . ensure that after baking, sanding of that area is done to level the surface with emery paper

Ensure for DFT, gloss

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

PC6... ensure lux level required for the surface inspection

Conduct sanding and polishing of the surface where required

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

PC7. . ensure sanding with with the help of sanding paper of grit size of certain no.(extremely fine as per wi) and then wipe the body with tag rag

PC8. . ensure effective polishing and then polisher application to be done

Touch of defective areas

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

PC9. . ensure that the touch up paint is applied on the defected areas with the help of spray gun as prescribed in the work instructions/ control plan

PC10. . ensure that here must be no overspray of paint

Merge to fade out thinner with the help of spray gun

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

PC11.. ensure that there should be no overspray of paint

Final inspection & documentation

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

PC12.. visual inspection for achieving acceptable level of finish /adhesion ; verification test as per recommended frequency.

PC13. . send to the assembly line after completing wo/ logbook/inspection /lot quantity control documentation.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company

KU2. different types of products manufactured by the company

KU3. knowledge of functional processes like store management, inventory management, quality management and key contact points for query resolution

KU4. different types of defects which may arise due to improper touch up painting

KU5. knowledge on how to operate gun in manual mode

KU6. ability to visualize the final product output, conduct verification tests and hence decide on the key steps to be followed

Generic Skills (GS)

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

GS1. document information

GS2. read equipment manuals and process documents to understand the equipments and processes better

GS3. read internal information memos send by internal customers (other functions within the organization)

GS4. discuss task lists, schedules, and work-loads with co-workers

GS5. question internal customers/ paint shop supervisor appropriately in order to understand the nature of the problem and make a diagnosis

GS6. plan and organize the work order and jobs received from the internal customers

GS7. plan and organize the design documents received from internal customers

GS8. organize all process/ equipment manuals so that sorting out information is fast

GS9. carefully analyze the body part for various surface defects

GS10. carefully run the production line if some delay, abnormal event happens as per the recommended reaction plan.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure sanding on defective areas of the body for Paint defects</i>	2	5	-	-
PC1. . after sanding please ensure there must be no edge at corners of the sanded area.	2	5	-	-
<i>Apply air dry sealant in areas where defects/ cracks are observed</i>	4	11	-	-
PC2. . ensure that the air dry sealant is applied on the areas	2	5	-	-
PC3. . sealant to be applied with sealant gun and then rectification- application to be done for smooth finish	2	6	-	-
<i>Do sanding and filling of putty</i>	4	12	-	-
PC4. . do putty application with the help of putty knife and after putty application bake in infrared lamp	2	7	-	-
PC5. . ensure that after baking, sanding of that area is done to level the surface with emery paper	2	5	-	-
<i>Ensure for DFT, gloss</i>	2	5	-	-
PC6. .. ensure lux level required for the surface inspection	2	5	-	-
<i>Conduct sanding and polishing of the surface where required</i>	5	14	-	-
PC7. . ensure sanding with with the help of sanding paper of grit size of certain no.(extremely fine as per wi) and then wipe the body with tag rag	2	7	-	-
PC8. . ensure effective polishing and then polisher application to be done	3	7	-	-
<i>Touch of defective areas</i>	3	12	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. . ensure that the touch up paint is applied on the defected areas with the help of spray gun as prescribed in the work instructions/ control plan	2	7	-	-
PC10. . ensure that here must be no overspray of paint	1	5	-	-
<i>Merge to fade out thinner with the help of spray gun</i>	1	5	-	-
PC11.. ensure that there should be no overspray of paint	1	5	-	-
<i>Final inspection & documentation</i>	4	11	-	-
PC12.. visual inspection for achieving acceptable level of finish /adhesion ; verification test as per recommended frequency.	3	7	-	-
PC13. . send to the assembly line after completing wo/ logbook/inspection /lot quantity control documentation.	1	4	-	-
NOS Total	25	75	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3312
NOS Name	Performing the Touch up and Final Inspection
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Painting
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	15/09/2015

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 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	25
ASC/N0021.Maintain 5S at the work premises	25	75	-	-	100	15
ASC/N3309.Understand process and equipment requirement to complete the task	30	70	-	-	100	15
ASC/N3310.Preparing the painting machine, auxiliary apparatus and metal work pieces for the painting process	20	80	-	-	100	15
ASC/N3311.Performing the Painting operation	25	75	-	-	100	15
ASC/N3312.Performing the Touch up and Final Inspection	25	75	-	-	100	15
Total	150	450	-	-	600	100

Acronyms

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

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.
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.

<p>Organisational Context</p>	<p>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.</p>
<p>Technical Knowledge</p>	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
<p>Core Skills/ Generic Skills (GS)</p>	<p>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.</p>
<p>Electives</p>	<p>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.</p>
<p>Options</p>	<p>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.</p>