



Testing Manager

QP Code: ASC/Q8405

Version: 1.0

NSQF Level: 7

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ASC/Q8405: Testing Manager

Brief Job Description

Testing Manager is responsible for conducting assessment of existing testing infrastructure and up gradation of the facilities as per requirement. The role holder has to ensure that the testing team completes all the indoor and outdoor tests for aggregates and vehicles as per the norms defined by the Cross functional team, observe the outcomes of the tests, analyse the test results and present consolidated reports to the Cross functional team for improvement, manage budgets for the team and ensure team productivity.

Personal Attributes

The individual should have passions for automobiles. The individual should possess coordination and interpersonal skills, demonstrate analytical reasoning, technology savvy, oral and written communication skills, good observations skills, ability to plan and prioritize work, quality consciousness, sensitivity to problem solving, quick decision making and orientation to safety and quality. The individual should further have customer orientation, market awareness, out of box thinking, problem solving, latest knowledge of technologies, cost management and team management skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N0006: Maintain a safe and healthy working environment](#)
2. [ASC/N0019: Managing the project delivery as a team lead within the cross functional team](#)
3. [ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area](#)
4. [ASC/N8409: Set up and maintain the testing infrastructure, conduct various types of tests on aggregates & vehicles, analyse and report problems](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Research & Development
Occupation	Product and Vehicle testing
Country	India
NSQF Level	7

Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.0201
Minimum Educational Qualification & Experience	B.E./B.Tech (Preferably automobile/mechanical/electronics/electrical engineering) with 10-15 Years of experience Not applicable
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Latest automobile and aggregate testing methods Different types of testing apparatus Automotive industry regulations and standards Problem Solving techniques Project management techniques Stress management techniques Team management skills Finance and Cost management IT and ERP Awareness 5S , Quality and Safety
Minimum Job Entry Age	18 Years
Last Reviewed On	20/01/2014
Next Review Date	31/03/2022
Deactivation Date	31/03/2022
NSQC Approval Date	05/08/2015
Version	1.0
Reference code on NQR	2015/AUT/ASDC/01143
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/N0019: Managing the project delivery as a team lead within the cross functional team

Description

This NOS is about handling the project management and project delivery activities within the R&D team such as managing team budgets and costs, institutionalizing process improvement, process excellence and quality management within the team and manage project timelines, project quality, team resourcing and management of stakeholders related to the Product Development project

Scope

The role holder will be responsible for:

- managing end to end project delivery activities within an R&D vertical including budgeting and costing for the team
- deploy procedures and processes to support the NPD delivery team
- managing the R&D team and motivate and engage them to increase the overall productivity of the team

Elements and Performance Criteria

Manage Costs and Budgets for the team

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

- PC1..** ensure timely creation of item wise/ head wise budget for the team on a year on year basis
- PC2. .** ensure that all major and minor cost elements related to equipment, tools, raw material, manpower, consumables and marketing activities are considered during finalization of the budgets for the given financial period/ project delivery period
- PC3. .** conduct effective negotiations along with the commercial team with suppliers and vendors during procurement of equipment, tools and raw material required for delivery of the new product
- PC4. .** support the process wise r&d lead/ head in conducting periodic tracking of planned vs. actual expenditure (variance analysis) for the team
- PC5. .** act upon the outcomes of the variance analysis and keep the overall process/ product cost within the specified ranges
- PC6. .** escalate any budgetary exigencies to process wise R&D lead/ head in a timely manner so that the project delivery does not suffer because of budgetary reasons

Process Excellence and Process Improvement

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

- PC7. .** ensure detailed self-understanding of all the requisite processes to be adopted for completing the development job
- PC8..** ensure drafting and finalizing of process manuals, work instructions, control plans, process flow charts to enable the team to easily understand and implement the process
- PC9. .** ensure that work instructions/ process steps are displayed in key areas like test labs, CA/CAD centres etc.
- PC10. .** ensuring recording and reporting procedures and systems are in place and shared with the team members

- PC11..** ensure 5s implementation in the r&d function especially in data management and data storage (knowledge management)
- PC12. .** identify areas of improvement in the existing processes/systems and take measures to adhere to the identified kaizen/ process improvement initiatives
- PC13. .** ensure team has understanding of basic analytical tools like why whyanalysis, brainstorming, 7 QC tools, TQM principles to analyse variousproblems and design process improvement activities
- PC14..** ensure that the development team regularly engages with the analytical tools during the various product development team
- PC15..** implement various business excellence techniques like kaizen, 5S initiatives and safety interventions to enhance productivity of the team

Project Delivery Management

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

- PC16..** support the process wise r&d lead/ head in creating the project plan for the individual product development team and ensure linkage with the overall npd plan of the organization
- PC17..** identify critical areas/ activities which need detailed monitoring and effective implementation to prevent any negative impact on the project process
- PC18. .** ensure tracking of key activities and milestones given in the individual project plan
- PC19. .** support the process wise r&d lead/ head in monitoring of individual project timelines, work quality, development & delivery costs, team contribution and knowledge management activities
- PC20..** support the process wise r&d lead/ head in creating time bound mitigation plan to deal with project plan variances
- PC21..** ensure timely setup of design centres, laboratories, testing beds as required by the npd delivery process mentioned in the overall project plan
- PC22. .** in case new equipment/ procedures are required, ensure that the responsible team is contacted well before the execution time in order to prevent delays in the development process
- PC23. .** create required project status reports and share the same the relevant stakeholders in the format finalized by the cross functional project Team
- PC24. .** manage stakeholder relationship and ensure closure of open items needing feedback or approvals from the relevant stakeholders
- PC25..** ensure effective collaboration and information sharing with other members of the cross functional npd delivery team
- PC26..** escalate any pertinent issues to the process wise r&d head which need immediate attention

Human Resource Management

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

- PC27. .** finalize along with the individual process head in the cft, the manpower planning and manpower deployment for the delivery team
- PC28..** identify the competencies required for the project delivery team
- PC29..** ensure identification and deployment of right skilled people at the right places on the delivery process
- PC30..** track the performance of the team during the various stages of the project and provide timely feedback for course correction
- PC31..** share knowledge of processes , inputs and outputs with the team members to enhance their skill levels

- PC32.** . other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers
- PC33.** . drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** different types of products manufactured by the company
- KU2.** overall R&D strategy for the organization
- KU3.** knowledge of functional processes like Procurement, Store management, inventory management, quality management, HR and key contact points for query resolution
- KU4.** 5S and Safety norms practiced in the organization
- KU5.** project management techniques and usage of different project management tools like primavera, MS Office etc.
- KU6.** various problems solving tools like 7QC, Why Why Analysis, Brain storming etc.
- KU7.** fundamental of financial and budgeting process
- KU8.** different type of tools , processes and infrastructure required for the development process
- KU9.** different types of communication channels practiced by the organization
- KU10.** the method of noting observations, maintaining records and sharing them with the concerned in the required format how to share feedback with team members
- KU11.** various data entry tools and formats used in the organization
- KU12.** ability to visualize the final product output and hence decide on the key steps and parameters to be followed
- KU13.** usage of various business correspondence tools like Email, MS Office tools (Word, Excel, Power Point), ERP tools etc.
- KU14.** about the various hazards related to various chemicals, load, power , heat sources/ tools as used in the processes, the hazards involved in the process operations and usage of PPEs

Generic Skills (GS)

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

- GS1.** document information from the manuals, discussion notes, process charts etc.
- GS2.** create small notes/ work documents/ diagrams for team members to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc.
- GS4.** read internal information memos send by internal customers (other functions within the organization)
- GS5.** articulate the thoughts in ones mind into the written format and communicate with the team members
- GS6.** discuss task lists, schedules, and work-loads with the operative team members
- GS7.** answer the queries raised by team as well as intercompany departments

- GS8.** articulate the thoughts in ones mind into the written format and communicate with the team members
- GS9.** effectively communicate with the team members and make them aware of work expectations, targets, policies, processes etc.
- GS10.** attentively listen with full attention the queries and grievances raised by the team and comprehend the information given by the speaker
- GS11.** identify the strengths and weaknesses of the subordinate team members
- GS12.** provide constructive and genuine feedback
- GS13.** motivate the team to take independently responsibilities in their work areas
- GS14.** provide training to team members for technical and behavioural areas
- GS15.** create a culture of innovation and out of box thinking/ risk taken
- GS16.** communicate effectively to the team members
- GS17.** identify conflicts in the team and try to resolve them at the earliest
- GS18.** interact and engage with the team members on a day to day basis
- GS19.** counsel and coach the team members and help them resolve issues
- GS20.** timely highlight to the management about any good work/ achievement by the team members
- GS21.** display empathy for the problems faced by the team and act on the concerns
- GS22.** break the problem into smaller issues and tasks to arrive at a solution
- GS23.** understand inter process relationship and establish relationship between various parts of the problem
- GS24.** leverage experience to find effective solutions to problems
- GS25.** use basic analytical tools to arrive at solutions
- GS26.** develop alternate solutions and resolves problems in early stages
- GS27.** work tireless in spite of repeat activities in a diligent manner to resolve problems on a day to day basis
- GS28.** collaborate with cross functional teams to resolve problems
- GS29.** use common sense and make judgments during day to day basis
- GS30.** use reasoning skills to identify and resolve problems
- GS31.** use intuition to detect any potential problems which could arise during operations
- GS32.** critically analyse solutions/ recommendations shared by operatives and supervisors for implementation gather information skilfully from multiple sources
- GS33.** analyse information in depth and identifies the problem in a timely manner
- GS34.** accept additional responsibility for self and the team
- GS35.** encourage self and other to take greater responsibilities
- GS36.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS37.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS38.** motivate and provide support for the team on the shop floor
- GS39.** encourage collaboration between team members
- GS40.** resolve team issues and grievances to manage conflicts within the team
- GS41.** create an environment of approachability, trust and openness within the team
- GS42.** ensure role clarity for all operators and helpers on the line/ shift

- GS43.** escalate any team related issues to the concerned person at the right time
- GS44.** use previous experience in resolving problems and taking decisions
- GS45.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
- GS46.** exhibit objectivity & openness to others views
- GS47.** collaborate with stakeholders to achieve the desired state of final result
- GS48.** familiarise with leading practices available in the market
- GS49.** think independently on new approaches to manufacturing process, material management, data management and team management
- GS50.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage Costs and Budgets for the team</i>	6	12	-	-
PC1. ensure timely creation of item wise/ head wise budget for the team on a year on year basis	1	2	-	-
PC2. ensure that all major and minor cost elements related to equipment, tools, raw material, manpower, consumables and marketing activities are considered during finalization of the budgets for the given financial period/ project delivery period	1	2	-	-
PC3. conduct effective negotiations along with the commercial team with suppliers and vendors during procurement of equipment, tools and raw material required for delivery of the new product	1	2	-	-
PC4. support the process wise r&d lead/ head in conducting periodic tracking of planned vs. actual expenditure (variance analysis) for the team	1	2	-	-
PC5. act upon the outcomes of the variance analysis and keep the overall process/ product cost within the specified ranges	1	2	-	-
PC6. escalate any budgetary exigencies to process wise R&D lead/ head in a timely manner so that the project delivery does not suffer because of budgetary reasons	1	2	-	-
<i>Process Excellence and Process Improvement</i>	9	22	-	-
PC7. ensure detailed self-understanding of all the requisite processes to be adopted for completing the development job	1	2	-	-
PC8. ensure drafting and finalizing of process manuals, work instructions, control plans, process flow charts to enable the team to easily understand and implement the process	1	3	-	-
PC9. ensure that work instructions/ process steps are displayed in key areas like test labs, CA/CAD centres etc.	1	3	-	-
PC10. ensuring recording and reporting procedures and systems are in place and shared with the team members	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11.. ensure 5s implementation in the r&d function especially in data management and data storage (knowledge management)	1	3	-	-
PC12. . identify areas of improvement in the existing processes/systems and take measures to adhere to the identified kaizen/ process improvement initiatives	1	2	-	-
PC13. . ensure team has understanding of basic analytical tools like why whyanalysis, brainstorming, 7 QC tools, TQM principles to analyse variousproblems and design process improvement activities	1	2	-	-
PC14.. ensure that the development team regularly engages with the analytical tools during the various product development team	1	2	-	-
PC15.. implement various business excellence techniques like kaizen, 5S initiatives and safety interventions to enhance productivity of the team	1	2	-	-
<i>Project Delivery Management</i>	10	22	-	-
PC16.. support the process wise r&d lead/ head in creating the project plan for the individual product development team and ensure linkage with the overall npd plan of the organization	1	2	-	-
PC17.. identify critical areas/ activities which need detailed monitoring and effective implementation to prevent any negative impact on the project process	1	2	-	-
PC18. . ensure tracking of key activities and milestones given in the individual project plan	1	2	-	-
PC19. . support the process wise r&d lead/ head in monitoring of individual project timelines, work quality, development & delivery costs, team contribution and knowledge management activities	1	2	-	-
PC20.. support the process wise r&d lead/ head in creating time bound mitigation plan to deal with project plan variances	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. ensure timely setup of design centres, laboratories, testing beds as required by the npd delivery process mentioned in the overall project plan	1	2	-	-
PC22. in case new equipment/ procedures are required, ensure that the responsible team is contacted well before the execution time in order to prevent delays in the development process	0.5	2	-	-
PC23. create required project status reports and share the same the relevant stakeholders in the format finalized by the cross functional project Team	1	2	-	-
PC24. manage stakeholder relationship and ensure closure of open items needing feedback or approvals from the relevant stakeholders	1	2	-	-
PC25. ensure effective collaboration and information sharing with other members of the cross functional npd delivery team	1	2	-	-
PC26. escalate any pertinent issues to the process wise r&d head which need immediate attention	0.5	2	-	-
<i>Human Resource Management</i>	5	14	-	-
PC27. finalize along with the individual process head in the cft, the manpower planning and manpower deployment for the delivery team	0.5	2	-	-
PC28. identify the competencies required for the project delivery team	1	2	-	-
PC29. ensure identification and deployment of right skilled people at the right places on the delivery process	0.5	2	-	-
PC30. track the performance of the team during the various stages of the project and provide timely feedback for course correction	0.5	2	-	-
PC31. share knowledge of processes , inputs and outputs with the team members to enhance their skill levels	1	2	-	-
PC32. other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC33. . drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts	0.5	2	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0019
NOS Name	Managing the project delivery as a team lead within the cross functional team
Sector	Automotive
Sub-Sector	Research & Development
Occupation	Prototyping
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	20/01/2014
Next Review Date	31/03/2022
NSQC Clearance Date	NA

ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area

Description

This NOS is about overseeing the implementation of all 5 S activities both at the shop floor and the office area by the team members and training the team in implementation of the 5S principles

Scope

The individual needs to

- Ensure sorting, streamlining/ organizing, storage and documentation, systematic cleaning, standardization and sustenance across the plant and office premises of the organization as given in the organization guidelines

Elements and Performance Criteria

Ensure proper sorting of items at the work place

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

- PC1..** ensure all recyclable materials are put in designated containers
- PC2.** ensure no tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use
- PC3.** ensure that the operators and other team members are segregating the waste in hazardous/ non hazardous waste as per the sorting work instructions
- PC4.** ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins
- PC5..** segregate the items which are labelled at red tag items for the process area and keep them in the correct places
- PC6..** ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions
- PC7.** check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area
- PC8. .** oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material
- PC9.** ensure that areas of material storage areas are not overflowing
- PC10.** ensure proper stacking and storage of 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

Ensure proper documentation and storage - streamlining & organizing the workplace

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

- PC11.** ensure that the team follows the given instructions and checks for labelling of fluids, oils lubricants, solvents, chemicals etc and proper storage of the same to avoid spillage, leakage, fire etc
- PC12.** make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions

PC13. ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .

Ensure cleaning of self and the work place

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

PC14. ensure that the area has floors swept, machinery clean and is generally neat and tidy in case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards

PC15.. ensure workbenches and work surfaces are clean and in good condition

PC16.. ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination

PC17.. ensure all recyclable materials are put in designated containers

Ensure standardization

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

PC18. ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant

PC19.. ensure all recyclable materials are put in designated containers

PC20. . ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes

PC21. ensure timely creation and sharing of the 5s checklists

PC22. ensure that the 5s manual are available as per the timelines

Ensure sustenance

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

PC23. ensure team cooperation during the audit of 5 s activities

PC24. ensure that workmen are periodically trained to address challenges related to 5s

PC25.. participate actively in employee work groups on 5s and encourage team members for active participation

PC26.. oversee that the staff/operators are trained and fully understand 5s procedures

PC27. . ensure that all the guidelines for what to do and what not to do to build sustainability in 5s are mentioned in the 5s check lists/ work instructions and are easily searchable

PC28. ensure continuous training of the team members on 5s in order to increase their awareness and support implementation

PC29. ensure that all visual controls, notice boards, symbols etc at the manufacturing place are created, working and are put up as per the requirement

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.** Have 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/ humanbody
- KU10.** have knowledge of best and environment protective 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.** write information documents to internal departments/ internal teams
- GS4.** read 5S instructions put up across the plant premises
- GS5.** effectively communicate information to team members inform employees in the plant and concerned functions about 5S
- GS6.** question the process head in order to understand the 5S related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems using 5S
- GS10.** persuade team members to follow 5 S
- GS11.** ensure that the team members understand the importance of using 5 S tool
- GS12.** use innovative skills to perform and manage 5 S activities at the work desk and the shop floor
- GS13.** exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work emerge, techniques in CA/CI around 5 S work practices
- GS14.** do what is right, not what is a popular practice
- GS15.** follow shop floor rules& regulations and avoid deviations
- GS16.** lead by example in the plant premises while performing activities related to 5S
- GS17.** ensure self-cleanliness on a daily basis
- GS18.** demonstrate the will to keep the work area in a clean and orderly manner
- GS19.** accept additional responsibility for self and the team
- GS20.** encourage self and other to take greater responsibilities for managing 5S
- GS21.** identify obstacles and bottlenecks in the process and find basic level solutions for removing these obstacles
- GS22.** use previous experience in resolving problems and taking decisions

GS23. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper sorting of items at the work place</i>	10	25	-	-
PC1.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
PC2. ensure no tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use	1	2.5	-	-
PC3. ensure that the operators and other team members are segregating the waste in hazardous/ non hazardous waste as per the sorting work instructions	1	2.5	-	-
PC4. ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins	1	2.5	-	-
PC5.. segregate the items which are labelled at red tag items for the process area and keep them in the correct places	1	2.5	-	-
PC6.. ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions	1	2.5	-	-
PC7. check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1	2.5	-	-
PC8. . oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material	1	2.5	-	-
PC9. ensure that areas of material storage areas are not overflowing	1	2.5	-	-
PC10. ensure proper stacking and storage of 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	2.5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper documentation and storage - streamlining & organizing the workplace</i>	3	7.5	-	-
PC11. ensure that the team follows the given instructions and checks for labelling of fluids, oils lubricants, solvents, chemicals etc and proper storage of the same to avoid spillage, leakage, fire etc	1	2.5	-	-
PC12. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	2.5	-	-
PC13. ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .	1	2.5	-	-
<i>Ensure cleaning of self and the work place</i>	4	10	-	-
PC14. ensure that the area has floors swept, machinery clean and is generally neat and tidy in case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards	1	2.5	-	-
PC15.. ensure workbenches and work surfaces are clean and in good condition	1	2.5	-	-
PC16.. ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination	1	2.5	-	-
PC17.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
<i>Ensure standardization</i>	5	12.5	-	-
PC18. ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant	1	2.5	-	-
PC19.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
PC20. . ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes	1	2.5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. ensure timely creation and sharing of the 5s checklists	1	2.5	-	-
PC22. ensure that the 5s manual are available as per the timelines	1	2.5	-	-
<i>Ensure sustenance</i>	7	16	-	-
PC23. ensure team cooperation during the audit of 5 s activities	1	2.5	-	-
PC24. ensure that workmen are periodically trained to address challenges related to 5s	1	2.5	-	-
PC25.. participate actively in employee work groups on 5s and encourage team members for active participation	1	2	-	-
PC26.. oversee that the staff/operators are trained and fully understand 5s procedures	1	2	-	-
PC27. . ensure that all the guidelines for what to do and what not to do to build sustainability in 5s are mentioned in the 5s check lists/ work instructions and are easily searchable	1	2.5	-	-
PC28. ensure continuous training of the team members on 5s in order to increase their awareness and support implementation	1	2	-	-
PC29. ensure that all visual controls, notice boards, symbols etc at the manufacturing place are created, working and are put up as per the requirement	1	2.5	-	-
NOS Total	29	71	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0022
NOS Name	Ensure implementation of 5S activities at the shop floor & the office area
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	15/03/2014
Next Review Date	31/03/2022
NSQC Clearance Date	NA

ASC/N8409: Set up and maintain the testing infrastructure, conduct various types of tests on aggregates & vehicles, analyse and report problems

Description

This NOS unit is about setting up and maintaining the testing infrastructure of the section, conducting various types of laboratory and on road tests, analysing the tests and sharing information with key stakeholders of the product development cross functional team

Scope

The role holder will be responsible for:

- Setting up and up gradation of the testing infrastructure
- Conducting aggregate and vehicle testing as per CFT (Cross Functional Team) requirements
- Data analysis and reporting of test outcomes

Elements and Performance Criteria

Testing infrastructure setup/ up gradation of existing setup

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

- PC1.** assess the capability of the existing testing facilities for equipment capacity, equipment types, equipment specifications, performance standards, environmental and regulatory compliance, coverage of different types of tests and flexibility of up gradation, extra attachments and modification
- PC2.** check the capability of the existing setup to be able to conduct future tests as per changes in internal and external environmental requirements
- PC3.** analyse the costs and time required of enhancing the capability of the testing laboratories and other testing infrastructure
- PC4.** ensure necessary approvals are obtained within the organization to initiate the expansion of existing test setup/ building of new test setup
- PC5.** coordinate with the test equipment manufacturers through the commercial team and the finance team to negotiate price and specifications of the required test apparatus
- PC6.** ensure that the additional setup and new equipment meet the regulatory and safety standards
- PC7.** ensure that the testing setup is certified by neutral agencies to meet the requirement of the industry and regulatory norms
- PC8.** ensure that the test laboratories have equipment calibrated as per the norms and timeframes required for testing tools and apparatus
- PC9.** ensure timely preparation of documents required for the certification process
- PC10.** ensure completion of audit process requirements for the certification process

Conduct aggregate and vehicle prototype testing

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

- PC11.** understand in detail the product attributes and share the understanding of product attributes with the team

- PC12.** develop targets (target setting) for the product/ vehicle testing team so that the team can benchmark the outcomes of the test procedure with the targets
- PC13.** based on the type and specifications of the product, finalize the test parameters with the cross functional product development team
- PC14.** identify testing parameters required for different testing areas like nvh testing,environmental testing, fatigue testing, emission testing, electrical and electronic systemtesting, testing of hmi and navigation aids etc.
- PC15.** create specific test cases with different levels of loading scenarios, environment scenarios, different physical parameters, design modifications etc. so that various aspects of design can be tested
- PC16.** ensure that any changes made in physical testing parameters are also reflected in the cae testing software so that a detailed computer aided testing can be conducted using different testing procedures
- PC17.** ensure that all types of tests required for testing product/ aggregate performance testing are conducted as per the test checklist finalized within the cross functional team
- PC18.** ensure that all type of vehicle dynamics tests, vehicle reliability tests, vehicle endurance tests are completed as per the test checklist finalized within the cross functional team
- PC19.** ensure that the testing engineer observes and records the outcomes of different tests conducted

Data Analysis and Reporting

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

- PC20.** analyse various reports prepared by the testing engineer and the team on individual tests conducted for the proto aggregate/ proto vehicle
- PC21.** conduct impact analysis based on the testing reports to highlight the probable effect on the performance of the aggregate or the vehicle
- PC22.** collate all reports and identify particular patterns of failures which have been seen during multiple tests and multiple times etc.
- PC23.** compare the test results with the standard values recommended by the cross functional engine design team and highlight any deviations
- PC24.** compare the test results with the regulatory norms especially on emissions and ensure that the engine design team is informed of the results in order to take corrective steps
- PC25.** compare the test results with benchmarked values for engine performance, emissions, fuel consumption
- PC26.** analyse the results shared by the testing engineer post plotting of power curves and torque curves to analyse engine performance
- PC27.** use various problem solving techniques like brainstorming, why why analysis, 7 qc tools etc. to identify problems and resolve them within the testing team
- PC28.** conduct fmea and root cause analysis for different problems to identify the test failure causes
- PC29.** consolidate individual test reports and finalize the overall product report to be submitted to the product testing/ vehicle testing head for review
- PC30.** conduct detailed analysis of the performance reports prepared by the team and ensure suitable action is taken on the observations highlighted in the testing reports
- PC31.** present the point of view of the testing team on the testing results during product development meetings with the cross functional team and provide recommendations for improvements

PC32. ensure that critical recommendations are finalized within the cross functional team and the same is shared with the production team for implementation during the productionline process

Ensure compliance to all regulatory and environmental requirements

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

PC33. ensure that the correct specification document is received from the prototyping and homologation team with the product testing team

PC34. thoroughly understand the type of regulations existing in the automotive space with respect to the vehicle/ aggregate under test

PC35. ensure that the testing team verifies the required parameters as per the type of vehicle under test and the mandatory regulatory norms as per the checklist provided by the cross functional team

PC36. ensure that detailed information documents are prepared and shared with the team members mentioning the vehicle usage type and the geography in which the vehicle is to be deployed is given in the information document

PC37. conduct the required homologation tests on road and lab tests as per the regulation checklist of the given geography

PC38. evaluate engine performance, emissions, vehicle safety, vehicle specifications, vehicle type and weight, load capacity, dimensions, vehicle running stability, braking specifications, mileage and other parameters as per the governing standards of the type/ geography

PC39. evaluate the test results , compare them with internal and external benchmarks & regulatory requirements like bharat stage norms, automobile industry standards (AIS), central motor vehicle regulations, central motor vehicle

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. organization methodology on conducting marketing data analysis, benchmarking,

KU4. quality norms and standards prescribed in the Quality Manual by the organization

KU5. 5S and Safety norms practiced in the organization

KU6. the working of various automobile components

KU7. fundamental for various testing instruments like hardness testing machines spectrometers, spectroscopes, microstructure analysers, refractrometers, PH meters, Humidity Analysers, fatigue testing machines and impact testing machines

KU8. fundamentals of servo hydraulics, acoustics holography, sound meters, vibration meters, load cells and strain gauges

KU9. fundamental structure and working of anechoic chambers and reverberation chambers

KU10. fundamentals of instrumentation and usage of flow meters for checking fuel and lubrication flow, smoke meters, power transducers, temperature sensors, particle sensors process for setting up of test benches, test platforms and test apparatus various types of tests used to evaluate the design and performance of various automotive components

KU11. different parameters used to evaluate the performance of the components

- KU12.** various national and international regulations, norms and standards on vehicles and engine performance regulations related to noise, vibrations, durability, reliability factors for 2 wheeler, 3 wheeler and 4 wheelers under normal and difficult environmental conditions
- KU13.** various defects related to reliability and durability of the component and impact of the defect on the final component and vehicle performance
- KU14.** various types of software testing programs like Pro Mechanical, Nastran, Matlab, Simulink etc available in the market
- KU15.** impact of wind, water flow, hot & cold conditions, pressure on the performance of the vehicle
- KU16.** impact of various mechanical and thermal stresses on the external frame of the vehicle and overall vehicle performance
- KU17.** basic working of Data Acquisition Systems and Data Loggers
- KU18.** analytical tools like Histogram analysis, Pareto Analysis, Why- Why analysis, Process Mapping, Ishikawa (Fishbone) analysis
- KU19.** project management techniques and usage of different project management tools like Primavera, MS Office etc
- KU20.** fundamental of financial and budgeting process
- KU21.** different type of tools , processes and infrastructure required for the development process
- KU22.** basic laws of physics, chemistry. metallurgy and mathematics
- KU23.** basic laws of geometry and product design
- KU24.** basic fundamentals of machines and mechanics
- KU25.** application of relevant principles of functionality, ergonomics, aesthetics etc
- KU26.** the methods of using instruments like Vernier callipers, micrometres, and other inspection tools
- KU27.** how to read and interpret sketches and engineering drawings
- KU28.** potential health, environment and safety hazards and related safety precautions

Generic Skills (GS)

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

- GS1.** document information from the manuals, discussion notes, process charts etc.
- GS2.** create small notes/ work documents/ diagrams for team members to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc.
- GS4.** write inter departmental notes/ memos or make suitable entries in the online system
- GS5.** read equipment manuals and process documents to understand the equipment and processes better
- GS6.** read internal information memos sent by internal customers (other functions within the organization)
- GS7.** discuss task lists, schedules, and work-loads with the team members
- GS8.** answer the queries raised by the operative team as well as intercompany departments
- GS9.** effectively communicate with the team members and make them aware of work expectations, targets, policies, processes etc

- GS10.** attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
- GS11.** break the problem into smaller issues and tasks to arrive at a solution
- GS12.** understand inter process relationship and establish relationship between various parts of the problem
- GS13.** leverage experience to find effective solutions to problems
- GS14.** use organizations analytical tools to arrive at solutions
- GS15.** plan, organize and prioritize the work with Engineering /R & D, Marketing department
- GS16.** plan support required from CFT /project teams for benchmarking ,testing, feasibility exercises
- GS17.** organize information, standards manuals etc. so that sorting becomes easy
- GS18.** reorganize resources in case of change of plans
- GS19.** accept additional responsibility for self and the team
- GS20.** encourage self and other to take greater responsibilities
- GS21.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS22.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS23.** gather information skilfully from multiple sources
- GS24.** analyse information in depth and identifies the problem in a timely manner
- GS25.** develop alternate solutions and resolves problems in early stages
- GS26.** Work tireless in spite of repeat activities in a diligent manner to resolve problems on a day to day basis
- GS27.** use previous experience in resolving problems and taking decisions
- GS28.** make timely and independent decisions within the boundaries of the delegation matrix of the organization
- GS29.** clearly establish a goal for self or others to accomplish
- GS30.** without instructions from the manager, self-manage the work
- GS31.** Take additional responsibilities to make sure that the work is completed on time
- GS32.** identify the needs of the customer
- GS33.** ensure that the product designed meets the expectation of the customer
- GS34.** understands importance of customer feedback and drives customer focus
- GS35.** familiarise with leading practices available in the market
- GS36.** think independently on new approaches to manufacturing process, material management, data management and team management
- GS37.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team
- GS38.** contribute to building a positive team spirit
- GS39.** identify individual strengths & maximize team performance
- GS40.** exhibit objectivity & openness to others views
- GS41.** collaborate with stakeholders to achieve the desired state of final result
- GS42.** identify the strengths and weaknesses of the subordinate team members
- GS43.** provide constructive and genuine feedback
- GS44.** motivate the team to take independently responsibilities in their work areas

- GS45.** provide training to team members for technical and behavioural areas
- GS46.** create a culture of innovation and out of box thinking/ risk taken
- GS47.** communicate effectively to the team members
- GS48.** identify conflicts in the team and try to resolve them at the earliest
- GS49.** interact and engage with the team members on a day to day basis
- GS50.** counsel and coach the team members and help them resolve issues
- GS51.** timely highlight to the management about any good work/ achievement by the team members
- GS52.** display empathy for the problems faced by the team and act on the concerns
- GS53.** the short term and long term vision of the organization
- GS54.** alignment of team and functional objectives with the organizational philosophy
- GS55.** financial implications of decisions on the overall team and functional objectives
- GS56.** the need for flexibility in self and team approach due to changing market forces and organizational strategy

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Testing infrastructure setup/ up gradation of existing setup</i>	10	16	-	-
PC1. assess the capability of the existing testing facilities for equipment capacity, equipment types, equipment specifications, performance standards, environmental and regulatory compliance, coverage of different types of tests and flexibility of up gradation, extra attachments and modification	1	1	-	-
PC2. check the capability of the existing setup to be able to conduct future tests as per changes in internal and external environmental requirements	1	1	-	-
PC3. analyse the costs and time required of enhancing the capability of the testing laboratories and other testing infrastructure	1	2	-	-
PC4. ensure necessary approvals are obtained within the organization to initiate the expansion of existing test setup/ building of new test setup	1	1	-	-
PC5. coordinate with the test equipment manufacturers through the commercial team and the finance team to negotiate price and specifications of the required test apparatus	1	1	-	-
PC6. ensure that the additional setup and new equipment meet the regulatory and safety standards	1	2	-	-
PC7. ensure that the testing setup is certified by neutral agencies to meet the requirement of the industry and regulatory norms	1	2	-	-
PC8. ensure that the test laboratories have equipment calibrated as per the norms and timeframes required for testing tools and apparatus	1	2	-	-
PC9. ensure timely preparation of documents required for the certification process	1	2	-	-
PC10. ensure completion of audit process requirements for the certification process	1	2	-	-
<i>Conduct aggregate and vehicle prototype testing</i>	8.5	18	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. understand in detail the product attributes and share the understanding of product attributes with the team	1	2	-	-
PC12. develop targets (target setting) for the product/ vehicle testing team so that the team can benchmark the outcomes of the test procedure with the targets	1	2	-	-
PC13. based on the type and specifications of the product, finalize the test parameters with the cross functional product development team	1	2	-	-
PC14. identify testing parameters required for different testing areas like nvh testing,environmental testing, fatigue testing, emission testing, electrical and electronic systemtesting, testing of hmi and navigation aids etc.	1	2	-	-
PC15. create specific test cases with different levels of loading scenarios, environment scenarios, different physical parameters, design modifications etc. so that various aspects of design can be tested	1	2	-	-
PC16. ensure that any changes made in physical testing parameters are also reflected in the cae testing software so that a detailed computer aided testing can be conducted using different testing procedures	1	2	-	-
PC17. ensure that all types of tests required for testing product/ aggregate performance testing are conducted as per the test checklist finalized within the cross functional team	1	2	-	-
PC18. ensure that all type of vehicle dynamics tests, vehicle reliability tests, vehicle endurance tests are completed as per the test checklist finalized within the cross functional team	1	2	-	-
PC19. ensure that the testing engineer observes and records the outcomes of different tests conducted	0.5	2	-	-
<i>Data Analysis and Reporting</i>	10.5	18	-	-
PC20. analyse various reports prepared by the testing engineer and the team on individual tests conducted for the proto aggregate/ proto vehicle	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. conduct impact analysis based on the testing reports to highlight the probable effect on the performance of the aggregate or the vehicle	1	2	-	-
PC22. collate all reports and identify particular patterns of failures which have been seen during multiple tests and multiple times etc.	1	1	-	-
PC23. compare the test results with the standard values recommended by the cross functional engine design team and highlight any deviations	0.5	1	-	-
PC24. compare the test results with the regulatory norms especially on emissions and ensure that the engine design team is informed of the results in order to take corrective steps	0.5	1	-	-
PC25. compare the test results with benchmarked values for engine performance, emissions, fuel consumption	0.5	1	-	-
PC26. analyse the results shared by the testing engineer post plotting of power curves and torque curves to analyse engine performance	1	1	-	-
PC27. use various problem solving techniques like brainstorming, why why analysis, 7 qc tools etc. to identify problems and resolve them within the testing team	1	1	-	-
PC28. conduct fmea and root cause analysis for different problems to identify the test failure causes	1	1	-	-
PC29. consolidate individual test reports and finalize the overall product report to be submitted to the product testing/ vehicle testing head for review	1	1	-	-
PC30. conduct detailed analysis of the performance reports prepared by the team and ensure suitable action is taken on the observations highlighted in the testing reports	1	2	-	-
PC31. present the point of view of the testing team on the testing results during product development meetings with the cross functional team and provide recommendations for improvements	0.5	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC32. ensure that critical recommendations are finalized within the cross functional team and the same is shared with the production team for implementation during the productionline process	0.5	2	-	-
<i>Ensure compliance to all regulatory and environmental requirements</i>	6	13	-	-
PC33. ensure that the correct specification document is received from the prototyping and homologation team with the product testing team	0.5	1	-	-
PC34. thoroughly understand the type of regulations existing in the automotive space with respect to the vehicle/ aggregate under test	1	2	-	-
PC35. ensure that the testing team verifies the required parameters as per the type of vehicle under test and the mandatory regulatory norms as per the checklist provided by the cross functional team	0.5	2	-	-
PC36. ensure that detailed information documents are prepared and shared with the team members mentioning the vehicle usage type and the geography in which the vehicle is to be deployed is given in the information document	1	2	-	-
PC37. conduct the required homologation tests on road and lab tests as per the regulation checklist of the given geography	1	2	-	-
PC38. evaluate engine performance, emissions, vehicle safety, vehicle specifications, vehicle type and weight, load capacity, dimensions, vehicle running stability, braking specifications, mileage and other parameters as per the governing standards of the type/ geography	1	2	-	-
PC39. evaluate the test results , compare them with internal and external benchmarks & regulatory requirements like bharat stage norms, automobile industry standards (AIS), central motor vehicle regulations, central motor vehicle	1	2	-	-
NOS Total	35	65	-	-

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N8409
NOS Name	Set up and maintain the testing infrastructure, conduct various types of tests on aggregates & vehicles, analyse and report problems
Sector	Automotive
Sub-Sector	Research & Development
Occupation	Product And Vehicle Testing
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	20/01/2014
Next Review Date	31/03/2022
NSQC Clearance Date	NA

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 : 75

(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	15
ASC/N0019.Managing the project delivery as a team lead within the cross functional team	30	70	-	-	100	20
ASC/N0022.Ensure implementation of 5S activities at the shop floor & the office area	29	71	-	-	100	15
ASC/N8409.Set up and maintain the testing infrastructure, conduct various types of tests on aggregates & vehicles, analyse and report problems	35	65	-	-	100	50
Total	119	281	-	-	400	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>