

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR RUBBER INDUSTRY

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack- Injection Moulding Operator

SECTOR: RUBBER INDUSTRY

SUB-SECTOR: 1. Tyre 2. Non- Tyre

OCCUPATION: Moulding/Curing

REFERENCE ID: RSC/ Q 0207

ALIGNED TO: NCO-2004/NIL

Brief Job Description: The Injection moulding operator is responsible for feeding the rubber compound/strip into the Injection moulding machine for making rubber parts

Personal Attributes: This job requires the individual to be result oriented. At all times he should strive to achieve highest quality standards. The operator is expected to be able to work in a factory environment.

Job Details	Qualifications Pack Code	RSC/ Q 0207		
	Job Role	Injection Moulding Operator		
	Credits(NSQF)	TBD	Version number	1.0
	Sector	Rubber	Drafted on	20/03/13
	Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
	Occupation	Moulding/Curing	Next review date	29/12/17
	NSQC Cleanance on	18/06/2015		

Job Role	Injection Moulding Operator
Role Description	The Injection moulding operator is responsible for feeding the rubber compound/strip into the Injection moulding machine for making rubber parts
NSQF level	4
Minimum Educational Qualifications*	Class X
Maximum Educational Qualifications*	ITI/Graduate in Science
Training (Suggested but not mandatory)	Training on operation of machinery
Minimum Job Entry Age	18 years
Experience	Worked as a semi-skilled helper for 3-6 months in the same role
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> RSC/ N0701 (Prepare injection moulding machine) RSC/ N0702 (Perform injection moulding operation) RSC/ N0703 (Undertake post moulding activities) RSC/ N5001 (To carry out housekeeping) RSC/ N5002 (To carry out reporting and documentation) RSC/ N5003 (To carry out quality checks) RSC/ N5004 (To carry out problem identification and escalation) Optional: <ol style="list-style-type: none"> NA
Performance Criteria	As described in the relevant OS units

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
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 they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification 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.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working 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.

National Occupational Standard



Overview

This unit is about preparing injection moulding machine and other accessories for injection moulding operation to make rubber products

Unit Code	RSC/N 0701
Unit Title (Task)	Prepare injection moulding machine
Description	This unit is about preparing equipment for injection moulding operation
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Ensuring housekeeping and safety in the moulding area Preparing the injection moulding machine Setting parameters on the injection moulding machine Loading the mould
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Equipment readiness	<p>To be competent, the user/individual on the job must be able to</p> <p>PC1. Ensure that injection moulding machine is clean and fit for use as per SOP</p> <p>PC2. Ensure upstream feeding device is loaded and ready for operation</p> <p>PC3. Ensure emergency safety feature of machine is working</p> <p>PC4. Select the correct mould and distribution system (sprue, drop, runners & gates)</p> <p>PC5. Ensure that the mould is clean</p> <p>PC6. Ensure that barrel & distribution system (sprue, drop, runners & gates) are clean</p> <p>PC7. Assemble the mould & distribution system properly on the platen machine</p> <p>PC8. Load the mould and distribution system on the machine press for preheating</p> <p>PC9. Set parameters for the injection moulding equipment (injection cycle time, temperature and clamping pressure), as per company's SOP</p> <p>PC10. Keep all the accessories like cleaning brush, mould release lever (made of brass or aluminum flat), ready including mould release agent</p> <p>PC11. Apply the mould release agent appropriately as per SOP</p> <p>PC12. Ensure that identified rubber compound strip or granule is ready for feeding into the Injection Moulding machine for the entire shift</p>
Raw material appropriateness	<p>PC13. Ensure that rubber compound strip or granule to be fed is approved by laboratory</p> <p>PC14. Match the batch code of each rubber compound with the batch code on the job schedule given by the planning department</p> <p>PC15. Ensure desired shape of rubber compound strip or granule for continuous feeding to Injection moulding machine.</p> <p>PC16. Ensure, by visual inspection, that rubber compound strip or granule is of desired quality (free of contamination/ bloom)</p>

Health & Safety	<p>PC17. Ensure housekeeping/safety in the moulding area as per SOP</p> <p>PC18. Use lifting equipment such as forklift / Trolleys while lifting heavy materials such as moulds and distribution systems to avoid physical injury.</p> <p>PC19. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning</p> <p>PC20. Ensure that signage indicating hot surfaces is put up wherever necessary</p> <p>PC21. Adhere to all safety norms (eg wearing protective gloves, shoes, safety glasses)</p> <p>PC22. Comply with health, safety, environment guidelines, regulations in accordance with international/national standards or organizational SOP</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Different types of Injection moulding machine operation.</p> <p>KA2. Different types of mould & distribution systems</p> <p>KA3. Implications of poorly prepared equipment, power failure</p> <p>KA4. Importance of identifying non-conforming material and storage of the same</p> <p>KA5. Risk and impact of not following defined procedures/work instructions</p> <p>KA6. Escalation matrix for reporting identified problems</p> <p>KA7. Types of documentation in organization and importance of the same</p> <p>KA8. Records to be maintained and implications of non-maintenance of the same</p> <p>KA9. Importance of housekeeping (knowledge of 3S & 5S)</p> <p>KA10. Health, Safety and Environment guidelines, legislation and regulations as applicable</p> <p>KA11. Personal protection(Which protective equipment to be used and how)</p> <p>KA12. Impact of poor practices on health, safety and environment</p> <p>KA13. Potential hazards and actions to minimize the same</p> <p>KA14. Escalation matrix and escalation procedure for reporting hazards</p> <p>KA15. Importance of FIFO, good shop floor practices (e.g. 5S)</p> <p>KA16. The usage of different type of fire extinguisher</p> <p>KA17. Impact of various practices on cost, quality, productivity, delivery and safety</p> <p>KA18. Handover/ Takeover the equipment/ work area as per company's SOP</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Injection moulding machine and operation (including typical process followed for different batches)</p> <p>KB2. Possible causes of common moulding problems & their remedies</p> <p>KB3. Health hazards of process and compounding ingredients</p> <p>KB4. Different heating system (steam/Electrical/Thermic fluid) including correlation of steam pressure and temperature)</p> <p>KB5. Operation of PLC or touch screen computer consoles</p> <p>KB6. Checks to be done on the flash to minimize leakage</p> <p>KB7. Use of cleaner batches</p>

	<p>KB8. Influence of parameters (e.g. time, temperature, pressure) on Injection moulding operation</p> <p>KB9. Use of different mould release agents</p> <p>KB10. Type of defects/problems leading to rejections, indicators, reasons and possible solutions.</p> <p>KB11. Cleanliness and safety requirements for commencing a injection moulding operation</p> <p>KB12. Units of measurement</p> <p>KB13. Response to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster</p> <p>KB14. Appropriate batch size with respect to appropriate machinery</p> <p>KB15. Use of weighing scale, time, temperature & pressure measurement</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p> <p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
	Oral Communication (Listening and Speaking skills)
<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p> <p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p>	

	<p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust</p> <p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one’s own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in ones’s area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one’s learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p> <p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>
B. Professional Skills	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>Handle injection moulding machine</p> <p>Assemble/load mould on the plate</p> <p>Handle rubber compound</p> <p>Handle chemicals</p> <p>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</p>
	<p>Plan and Organize</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. seek clarification on problems from others</p> <p>SB3. apply problem-solving approaches in different situations</p> <p>SB4. refer anomalies to the line manager</p>
	<p>Customer Centricity</p> <p>NA</p>

	Problem Solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB 5. Interpret quality for sheet</p> <p>SB 6. Suggest improvements(if any) in process/product/materials based on results and experience</p>
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. Proper collection of waste material</p> <p>SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience</p> <p>Diagnose common problems in the machine based on visual inspection, sound , temperature etc</p> <p>Suggest improvements(if any) in process based on experience</p>
	Critical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. Handle equipment/rubber sheet</p> <p>SB6. seek clarification on problems from others</p> <p>SB10. apply problem-solving approaches in different situations</p> <p>SB11. refer anomalies to the line manager</p>

NOS Version Control

NOS Code	RSC / N 0701		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



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National Occupational Standard



Overview

This unit is about performing injection moulding operation to make rubber products

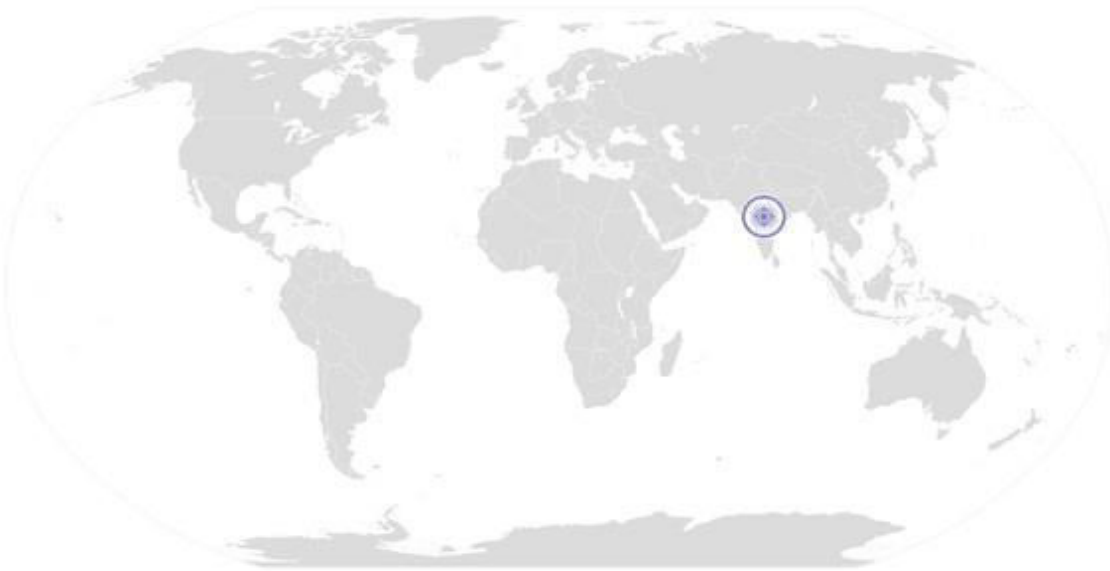
Unit Code	RSC / N 0702
Unit Title (Task)	Perform injection moulding operation
Description	This unit is about performing injection moulding operation
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Ensuring housekeeping and safety in the moulding area Operate the machine Feed rubber compound and other materials into the machine Does not cover blown/expanded products
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Raw material appropriateness	To be competent, the user/individual on the job must be able to : PC1. Handle the rubber compound to avoid contamination
Operations	PC2. Load the material in the correct pattern as per SOP to minimize material overflow/ wastage/ excess flash PC3. Check the identified feed strip for dimension uniformity/identified granules PC4. Make the rubber compound strip or granule ready for feeding into the machine PC5. Start the machine and feeding simultaneously PC6. Ensure that moulding pressure and temperature is maintained during the curing cycle PC7. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning PC8. Cure the product as per SOP PC9. Remove the cured product from the mould as per SOP.
Health & Safety	PC10. Ensure Housekeeping and Safety in mixing area PC11. Adhere to all other safety norms (like wearing shoes) PC12. Comply with health, safety, environment guidelines, regulations in accordance with international/national standards or organizational SOP
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. Different types of batches that are run in plant KA2. Injection moulding process to get minimum rejection KA3. Curing process and effect of the same KA4. Types of different heating processes (steam, electrical, thermic fluid) KA5. Implications of poorly prepared material, power failure

	<p>KA6. Material disposal procedure, importance of appropriate disposal of material and implications of not following the material disposal procedure</p> <p>KA7. Quality and damage checks to be done and importance of the same</p> <p>KA8. Importance of identifying non-conforming products and storage of the same</p> <p>KA9. Risk and impact of not following defined procedures/work instructions</p> <p>KA10. Escalation matrix for reporting identified issues</p> <p>KA11. Types of documentation in organization and importance of the same</p> <p>KA12. Records to be maintained and implications of non-maintenance of the same</p> <p>KA13. Importance of housekeeping & good shop floor practices (knowledge of 3S & 5S)</p> <p>KA14. Health, Safety and Environment guidelines, legislation and regulations as applicable</p> <p>KA15. Personal protection (Which protective equipment to be used and how)</p> <p>KA16. Impact of poor practices on health, safety and environment</p> <p>KA17. Potential hazards and actions to minimize the same</p> <p>KA18. Escalation matrix and escalation procedure for reporting hazards</p> <p>KA19. Importance of FIFO</p> <p>KA20. The usage of different fire extinguisher</p> <p>KA21. Impact of various practices on cost, quality, productivity, delivery and safety</p> <p>KA22. Handover/ Takeover the equipment/ work area as per company's SOP</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand</p> <p>KB1. Possible causes of common moulding problems & their remedies</p> <p>KB2. Cleanliness and safety requirements for operating a Injection moulding machine</p> <p>KB3. Influence of parameters (e.g. time, temperature, pressure) on injection moulding operation</p> <p>KB4. Injection moulding operation to get minimum rejection</p> <p>KB5. Operation of moulding machine (Equipment working, possible setting levels, typical process followed for different batches)</p> <p>KB6. Different types of Injection moulding machine, distributions systems and moulds.</p> <p>KB7. Operation of multiple presses with common power pack and importance of sequencing</p> <p>KB8. Specific pressure required for different types of moulding</p> <p>KB9. Influence of time and temperature on curing of thick products</p> <p>KB10. State of curing – undercuring and overcuring</p> <p>KB11. Effect of improper processing on properties of rubber compound & product</p> <p>KB12. Units of measurement</p> <p>KB13. Response to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster</p> <p>KB14. Appropriate batch size with respect to appropriate machinery</p>

	KB15. Use of weighing scale, time, temperature & pressure measurement
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company SA3. Write simple letters, mails, etc SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc SA6. Read images, graphs, diagrams SA7. Understand the various coding systems as per company norms
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA8. Express statements, opinions or information clearly so that others can hear and understand SA9. Respond appropriately to any queries SA10. Communicate with supervisor SA11. Communicate with upstream and downstream teams SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme) Integrity The user/individual on the job needs to know and understand how to: SA13. Practice honesty with respect to company property and time SA14. Communicate with people in a form and manner and using language that is open and respectful SA15. Resolve any difficulties in relationships with colleagues, or get help from an appropriate person, in a way that preserves goodwill and trust Motivation The user/individual on the job needs to know and understand how to: SA16. Take responsibility for completing one's own work assignment SA17. Take initiative to enhance/learn skills in one's area of work SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning.

	<p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p> <p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively, rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>
B. Professional Skills	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>Handle injection moulding machine</p> <p>Assemble/load mould on the plate</p> <p>Handle rubber compound</p> <p>Handle chemicals</p> <p>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</p>
	<p>Plan and Organize</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. seek clarification on problems from others</p> <p>SB3. apply problem-solving approaches in different situations</p> <p>SB4. refer anomalies to the line manager</p>
	<p>Customer Centricity</p>
	<p>NA</p>
	<p>Problem Solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB 5. Interpret quality for sheet</p> <p>SB 6. Suggest improvements(if any) in process/product/materials based on results and experience</p>
	<p>Analytical Thinking</p>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. Proper collection of waste material</p>	

	<p>SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience</p> <p>Diagnose common problems in the machine based on visual inspection, sound , temperature etc</p> <p>Suggest improvements(if any) in process based on experience</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others</p> <p>SB10. apply problem-solving approaches in different situations</p> <p>SB11. refer anomalies to the line manager</p>



NOS Code	RSC / N 0702		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



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National Occupational Standard



Overview

This unit is about undertaking activities post injection moulding operation to make rubber products

Unit Code	RSC / N 0703
Unit Title (Task)	Undertake post moulding activities
Description	This unit is about undertaking activities after injection moulding operation
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Ensuring housekeeping and safety in the moulding area Remove cured piece Trim the piece to remove flash Effect cleaning of compound feed mechanism, mould runner grooves, gating points after completion of continuous injection cycle using the same compound Form appropriate batches of the product Mark the batch for proper identification for further processing Send sample to lab for testing
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Operation	<p>To be competent, the user/individual on the job must be able to</p> <p>PC1. Remove cured product properly as per SOP</p> <p>PC2. Remove the cured compound from the pot/ flow grooves and ensure clean mould for next cycle</p> <p>PC3. Trim the piece to remove flash in a manner that does not cause injury to the operator or the product</p> <p>PC4. Ensure finishing operation including surface treatment of the cured product if required as per SOP before sending to inspection/warehouse.</p>
Material disposal	PC5. Dispose waste material in safe manner as per company's SOP
Batch Marking	PC6. Ensure identification and traceability by batch marking/ coding for the right product as per instructions laid down by the company (in terms of batch number, colour, date stamp)
Sampling	<p>PC7. Send sample of specified compound/ batch in specified form to lab for testing</p> <p>PC8. Send the remaining material to the designated storage area</p>
Health & Safety	<p>PC9. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning</p> <p>PC10. Adhere to all safety norms (like wearing protective gloves, shoes, safety glasses)</p>

	PC11. Comply with health, safety, environment guidelines, regulations in accordance with international/national standards or organizational SOP
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Implications of poorly prepared material, power failure</p> <p>KA2. Significance of batch marking</p> <p>KA3. Importance of identifying non-conforming product and storage of the same</p> <p>KA4. Risk and impact of not following defined procedures/work instructions</p> <p>KA5. Escalation matrix and procedure for reporting identified problems</p> <p>KA6. Types of documentation in organization and importance of the same</p> <p>KA7. Records to be maintained and implications of non-maintenance of the same</p> <p>KA8. Importance of housekeeping & good shop floor practice (knowledge of 3S & 5S)</p> <p>KA9. Health, Safety and Environment guidelines, legislation and regulations as applicable</p> <p>KA10. Personal protection(Which protective equipment to be used and how)</p> <p>KA11. Potential hazards and actions to minimize the same</p> <p>KA12. Impact of poor practices on health, safety and environment</p> <p>KA13. Escalation matrix and procedure for reporting hazards</p> <p>KA14. Handover/ Takeover the equipment/ work area as per company's SOP</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Mould fouling and remedial measures</p> <p>KB2. Possible causes of common moulding problems & their remedies</p> <p>KB3. Loading/unloading mechanisms and aids</p> <p>KB4. State of curing – undercuring and overcuring</p> <p>KB5. The process and importance of quality check, including visual, hardness and dimension check</p> <p>KB6. Cleanliness and safety requirements for deflashing</p> <p>KB7. Units of measurement</p> <p>KB8. Coding systems for identification and traceability</p> <p>KB9. Use of weighing scales, time, temperature & pressure measurement</p> <p>KB10. Storage life of the compound</p> <p>KB11. Ambient temperature and effect on compound</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p>

Undertake Post Moulding Activities

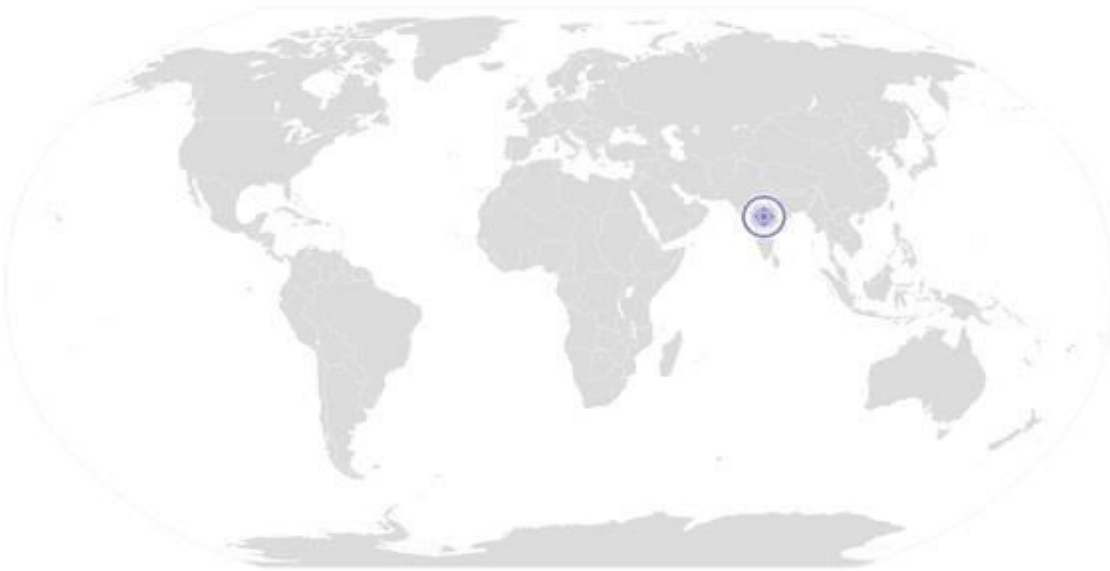
	<p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>
	<p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p>
	<p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues, or get help from an appropriate person, in a way that preserves goodwill and trust</p>
	<p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one's own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in one's area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p>
	<p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively, rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>

B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: Handle injection moulding machine Assemble/load mould on the plate Handle rubber compound Handle chemicals The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. seek clarification on problems from others SB3. apply problem-solving approaches in different situations SB4. refer anomalies to the line manager
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB 5. Interpret quality for sheet SB 6. Suggest improvements(if any) in process/product/materials based on results and experience
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. Proper collection of waste material SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience Diagnose common problems in the machine based on visual inspection, sound , temperature etc Suggest improvements(if any) in process based on experience
	Critical Thinking
The user/individual on the job needs to know and understand how to: SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others SB10. apply problem-solving approaches in different situations SB11. refer anomalies to the line manager	

NOS Code	RSC / N 0703		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



National Occupational Standard



Overview

This unit is about carrying out housekeeping

Unit Code	RSC / N 5001
Unit Title (Task)	To carry out housekeeping
Description	This unit is about carrying out housekeeping activities
Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Preparing for housekeeping activities • Carry out housekeeping activities • Post housekeeping activities
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Pre housekeeping activities	To be competent, the user/individual on the job must be able to: PC1. Inspect the area while taking into account various surfaces PC2. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain PC3. Ensure that the cleaning equipment is in proper working condition PC4. Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person PC5. Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces PC6. Inform the affected people about the cleaning activity PC7. Display the appropriate signage for the work being conducted PC8. Ensure that there is adequate ventilation for the work being carried out PC9. Wear the personal protective equipment required for the cleaning method and materials being used
Operations	PC10. Use the correct cleaning method for the work area, type of soiling and surface PC11. Carry out cleaning activity without disturbing others PC12. Deal with accidental damage, if any, caused while carrying out the work PC13. Report to the appropriate person any difficulties in carrying out your work PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill
Post housekeeping activities	PC15. Ensure that there is no oily substance on the floor to avoid slippage PC16. Ensure that no scrap material is lying around PC17. Maintain and store housekeeping equipment and supplies PC18. Follow workplace procedures to deal with any accidental damage caused during the cleaning process PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements PC20. Return the equipment, materials and personal protective equipment that were

	<p>used to the right places making sure they are clean, safe and securely stored</p> <p>PC21. Dispose the waste garnered from the activity in an appropriate manner</p> <p>PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly</p>
General	<p>PC23. Maintain schedules and records for housekeeping duty</p> <p>PC24. Replenish any necessary supplies or consumables</p>
Knowledge and Understanding (K)	
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The levels of hygiene required by workplace and why it is important to maintain them during your work</p> <p>KB2. How to inspect a work area to decide what cleaning it needs</p> <p>KB3. Methods and materials that used for cleaning variety of surfaces</p> <p>KB4. The types of cleansing agents that are not to be mixed together</p> <p>KB5. The correct method for cleaning equipment and/or machinery used during your work</p> <p>KB6. The importance of personal protective equipment</p> <p>KB7. Appropriate personal protective equipment for the work area, cleaning equipment, tools, materials and chemicals used</p> <p>KB8. The correct sequence for cleaning the work area</p> <p>KB9. The time taken by the treatment to work</p> <p>KB10. The importance of following manufacturer's instructions on cleaning agents</p> <p>KB11. The most appropriate place to carry out test cleans and why this should be done before applying treatments</p> <p>KB12. The importance of applying treatments evenly and the effect of not doing this</p> <p>KB13. Process of cleaning the surfaces without causing injury or damage</p> <p>KB14. The method to check the treated surface and equipment on completion of cleaning</p> <p>KB15. Procedures for reporting any unidentified soiling</p> <p>KB16. Procedures for disposing off waste</p> <p>KB17. Procedures for disposing off or storing personal protective equipment</p> <p>KB18. Escalation procedures for soils or stains that could not be removed</p>
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p>

	<p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>
	<p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p>
	<p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues, or get help from an appropriate person, in a way that preserves goodwill and trust</p>
	<p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one's own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in one's area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p>
	<p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively, rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>

B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: Handle injection moulding machine Assemble/load mould on the plate Handle rubber compound Handle chemicals The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. seek clarification on problems from others SB3. apply problem-solving approaches in different situations SB4. refer anomalies to the line manager
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB 5. Interpret quality for sheet SB 6. Suggest improvements(if any) in process/product/materials based on results and experience
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. Proper collection of waste material SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience Diagnose common problems in the machine based on visual inspection, sound , temperature etc Suggest improvements(if any) in process based on experience
	Critical Thinking
The user/individual on the job needs to know and understand how to: SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others SB10. apply problem-solving approaches in different situations SB11. refer anomalies to the line manager	

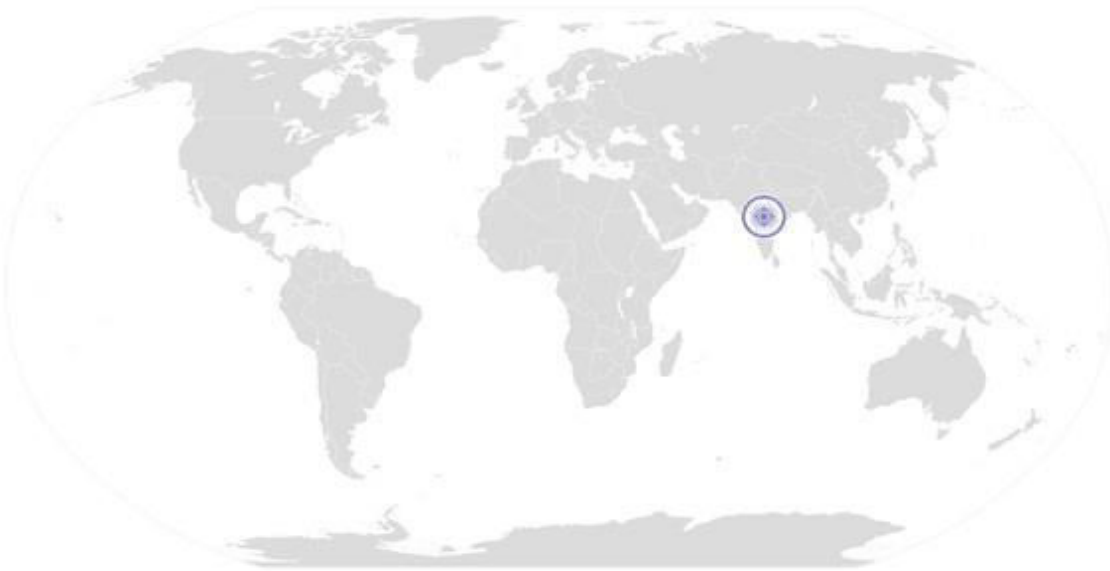
NOS Version Control

NOS Code	RSC / N 5001		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



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National Occupational Standard



Overview

This unit is about reporting and documentation

Unit Code	RSC / N 5002
Unit Title (Task)	To carry out reporting and documentation
Description	This unit is about carrying out reporting and documentation
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Reporting of data/problem/incidents etc • Documentation • Information Security
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reporting	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Report data/problems/incidents as applicable in a timely manner</p> <p>PC2. Report to the appropriate authority as laid down by the company</p> <p>PC3. Follow reporting procedures as prescribed by the company</p>
Recording and Documentation	<p>PC4. Identify documentation to be completed relating to one's role</p> <p>PC5. Record details accurately in appropriate format</p> <p>PC6. Complete all documentation within stipulated time according to company procedure</p> <p>PC7. Ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly</p> <p>PC8. Make sure documents are available to all appropriate authorities to inspect</p>
Information Security	<p>PC9. Respond to requests for information in an appropriate manner whilst following organizational procedures</p> <p>PC10. Inform the appropriate authority of requests for information received</p>
Knowledge and Understanding (K)	
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Different methods of recording information</p> <p>KB2. Various documents that need to be maintained</p> <p>KB3. Company procedure for filling/maintaining up the documents</p> <p>KB4. Procedures for reporting to the appropriate authority</p> <p>KB5. Procedures for recording damage, breakages etc</p> <p>KB6. Reporting incidents where standard operating procedures are not followed</p> <p>KB7. The importance of complete and accurate documentation</p> <p>KB8. How to maintain complete documentation accurately and within agreed timescales</p>

To Carry Out Reporting And Documentation

	<p>KB9. The importance of ensuring that the documents are correct</p> <p>KB10. The actions to be taken if the documents are not correct</p> <p>KB11. The importance of maintaining the security and confidentiality of recorded information</p> <p>KB12. Procedures to maintain confidentiality of information</p> <p>KB13. The appropriate method for responding to requests for information</p> <p>KB14. The reporting procedures to followed before disclosing information to any outside party</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p> <p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
Oral Communication (Listening and Speaking skills)	

To Carry Out Reporting And Documentation

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p> <p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust</p> <p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one’s own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in ones’s area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one’s learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p> <p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>Handle injection moulding machine</p> <p>Assemble/load mould on the plate</p> <p>Handle rubber compound</p> <p>Handle chemicals</p> <p>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</p>

	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. seek clarification on problems from others SB3. apply problem-solving approaches in different situations SB4. refer anomalies to the line manager
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB 5. Interpret quality for sheet SB 6. Suggest improvements(if any) in process/product/materials based on results and experience
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. Proper collection of waste material SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience Diagnose common problems in the machine based on visual inspection, sound , temperature etc Suggest improvements(if any) in process based on experience
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others SB10. apply problem-solving approaches in different situations SB11. refer anomalies to the line manager

NOS Code	RSC / N 5002		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



National Occupational Standard



Overview

This unit is about carrying out quality checks

Unit Code	RSC / N 5003
Unit Title (Task)	To carry out quality checks
Description	This unit is about carrying out quality control activities
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Carrying out quality checks to identify problems Take corrective actions Reporting the results
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Inspection	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Ensure that total range of checks are regularly and consistently performed</p> <p>PC2. Use appropriate measuring instruments, equipment, tools, accessories etc ,as required</p>
Analysis	<p>PC3. Identify non-conformities to quality assurance standards</p> <p>PC4. Identify potential causes of non-conformities to quality assurance standards</p> <p>PC5. Identify impact on final product due to non-conformance to company standards</p> <p>PC6. Evaluating the need for action to ensure that problems do not recur</p> <p>PC7. Suggest corrective action to address problem</p> <p>PC8. Review effectiveness of corrective action</p>
Reporting	<p>PC9. Interpret the results of the quality check correctly</p> <p>PC10. Take up results of the findings with QC in charge/appropriate authority.</p> <p>PC11. Take up the results of the findings within stipulated time</p> <p>PC12. Record of results of action taken</p> <p>PC13. Record adjustments not covered by established procedures for future reference</p> <p>PC14. Review effectiveness of action taken</p> <p>PC15. Follow reporting procedures where the cause of defect cannot be identified</p>
Knowledge and Understanding (K)	
A. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The importance of quality control procedures</p> <p>KB2. Relevance and importance of activities and how they contribute to the achievement of the quality objectives,</p>

	<p>KB3. Proper procedure for selecting the material/product and performing quality checks without affecting the material</p> <p>KB4. Availability of work instructions, as necessary,</p> <p>KB5. Characteristics of the product/material</p> <p>KB6. Use of suitable equipment</p> <p>KB7. Availability and use of monitoring and measuring devices,</p> <p>KB8. Requirements of records</p> <p>KB9. Importance of maintaining accurate up-to-date records</p> <p>KB10. The need to report within the stipulated time</p> <p>KB11. Implications of inaccurate measuring and testing instruments and equipment</p> <p>KB12. The cost of non-conformance to quality standards</p> <p>KB13. Implications (impact on internal/external customers) of defective products, materials or components</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p> <p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
Oral Communication (Listening and Speaking skills)	

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p> <p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues , or get help from an appropriate person, in a way that preserves goodwill and trust</p> <p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one’s own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in ones’s area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one’s learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p> <p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively , rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>
B. Professional Skills	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>Handle injection moulding machine</p> <p>Assemble/load mould on the plate</p> <p>Handle rubber compound</p> <p>Handle chemicals</p> <p>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</p>

	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. seek clarification on problems from others SB3. apply problem-solving approaches in different situations SB4. refer anomalies to the line manager
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB 5. Interpret quality for sheet SB 6. Suggest improvements(if any) in process/product/materials based on results and experience
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. Proper collection of waste material SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience Diagnose common problems in the machine based on visual inspection, sound , temperature etc Suggest improvements(if any) in process based on experience
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others SB10. apply problem-solving approaches in different situations SB11. refer anomalies to the line manager

NOS Version Control

NOS Code	RSC / N 5003		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



National Occupational Standard



Overview

This unit is about problem identification and escalation

Unit Code	RSC / N 5004
Unit Title (Task)	To carry out problem identification and escalation
Description	This unit is about problem identification and escalation
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Identify problems across: <ul style="list-style-type: none"> - Raw materials - Compounds - Product - Equipment - Others • Identify solutions to problems • Take corrective action • Escalation of unresolved identified problems
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Problem Identification	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify defects/indicators of problems</p> <p>PC2. Identify any wrong practices that may lead to problems</p> <p>PC3. Identify practices that may impact the final product quality</p> <p>PC4. Identify if the problem has occurred before</p> <p>PC5. Identify other operations that might be impacted by the problem</p> <p>PC6. Ensure that no delays are caused as a result of failure to escalate problems</p>
Necessary Action	<p>PC7. Take appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required)</p> <p>PC8. Consider possible reasons for identification of problems</p> <p>PC9. Consider applicable corrections and formulate corrective action</p> <p>PC10. Formulate action in a timely manner</p> <p>PC11. Communicate problem/remedial action to appropriate parties</p> <p>PC12. Take corrective action in a timely manner</p> <p>PC13. Take corrective action for problems identified according to the company procedures</p> <p>PC14. Report/document problem and corrective action in an appropriate manner</p> <p>PC15. Monitor corrective action</p> <p>PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved</p>

	<p>PC17. Ensure that corrective action selected is viable and practical</p> <p>PC18. Ensure that correct solution is identified to an identified problem</p> <p>PC19. Take corrective action for problems identified according to the company procedures</p> <p>PC20. Ensure that no delays are caused as a result of failure to take necessary action</p>
Problem Escalation	<p>PC21. Escalate problem as per laid down escalation matrix</p> <p>PC22. Escalate the problem within stipulated time</p> <p>PC23. Escalate the problem in an appropriate manner</p> <p>PC24. Ensure that no delays are caused as a result of failure to escalate problems</p>
Knowledge and Understanding (K)	
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Indicators of problems</p> <p>KB2. The working of the equipment and accessories(if applicable)</p> <p>KB3. The impact of operations on the user and equipment(if applicable)</p> <p>KB4. The impact of operations on the final product (if applicable)</p> <p>KB5. The effect of not rectifying the problems identified</p> <p>KB6. The reason for the occurrence of previous problems</p> <p>KB7. Measures and steps that have been taken to address the previous problems</p> <p>KB8. Possible solutions for various problems</p> <p>KB9. The correct method for carrying out corrective actions outlined for each problem</p> <p>KB10. The impact of not carrying out the corrective actions</p> <p>KB11. The documentation procedure for recording such problems, as per company norms</p> <p>KB12. The escalation matrix for reporting problems</p> <p>KB13. Escalation matrix for reporting unresolved problems</p> <p>KB14. The time frame within which in which each problem needs to be escalated</p> <p>KB15. Manner in which each problem needs to be escalated</p>
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication</p> <p>SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company</p> <p>SA3. Write simple letters, mails, etc</p> <p>SA4. Perform functional mathematical operations, including apply basic mathematical principles, such as numbers and space, and techniques such as estimation and approximation, for practical purposes</p>

To Carry Out Problem Identification And Escalation

	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read and understand manuals, health and safety instructions, memos, reports, job cards etc</p> <p>SA6. Read images, graphs, diagrams</p> <p>SA7. Understand the various coding systems as per company norms</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Express statements, opinions or information clearly so that others can hear and understand</p> <p>SA9. Respond appropriately to any queries</p> <p>SA10. Communicate with supervisor</p> <p>SA11. Communicate with upstream and downstream teams</p> <p>SA12. Work in a team and other behavioral skills required to support the small group activities (Quality Circle, Cross Functional Team, Suggestion Scheme)</p>
	<p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA13. Practice honesty with respect to company property and time</p> <p>SA14. Communicate with people in a form and manner and using language that is open and respectful</p> <p>SA15. Resolve any difficulties in relationships with colleagues, or get help from an appropriate person, in a way that preserves goodwill and trust</p> <p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. Take responsibility for completing one's own work assignment</p> <p>SA17. Take initiative to enhance/learn skills in one's area of work</p> <p>SA18. The capacity to learn from experience in a range of settings and scenarios and the capacity to reflect on and analyse one's learning.</p> <p>SA19. Is open to new ways of doing things</p> <p>SA20. The capacity to envisage and articulate personal goals; to develop strategies and take action to achieve them.</p> <p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA21. Avoid absenteeism</p> <p>SA22. Act objectively, rather than impulsively or emotionally when faced with difficult/stressful or emotional situations</p> <p>SA23. Work in disciplined factory environment</p> <p>SA24. Be punctual</p>
	Decision Making

B. Professional Skills	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> Handle injection moulding machine Assemble/load mould on the plate Handle rubber compound Handle chemicals <p>The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.</p>
	Plan and Organize
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB2. seek clarification on problems from others SB3. apply problem-solving approaches in different situations SB4. refer anomalies to the line manager
	Customer Centricity
	NA
	Problem Solving
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB 5. Interpret quality for sheet SB 6. Suggest improvements(if any) in process/product/materials based on results and experience
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB7. Proper collection of waste material SB8. Identify defects in the material and communicate it at the earliest and suggest improvements(if any) in process/material based on experience Diagnose common problems in the machine based on visual inspection, sound , temperature etc Suggest improvements(if any) in process based on experience
	Critical Thinking
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB9. Handle equipment/rubber sheet SB6. seek clarification on problems from others SB10. apply problem-solving approaches in different situations SB11. refer anomalies to the line manager 	

RSC / N 5004
To Carry Out Problem Identification And Escalation

NOS Version Control

NOS Code	RSC / N 5004		
Credits(NSQF)	TBD	Version number	1.0
Industry	Rubber Manufacturing	Drafted on	20/03/13
Industry Sub-sector	Tyre and Non- tyre	Last reviewed on	29/12/15
Occupation	Moulding/Curing	Next review date	29/12/17



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CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Injection Moulding Operator
Qualification Pack Code: RSC/ Q 0207
Sector Skill Council: Rubber Skill Development Council

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessment Strategy		Marks Allocation		
NOS	Performance Criteria	Total	Theory	Practical
1. RSC/ N0701 (Prepare injection moulding machine)	PC1. Ensure that injection moulding machine is clean and fit for use as per SOP	5	3	2
	PC2. Ensure upstream feeding device is loaded and ready for operation	5	3	2
	PC3. Ensure emergency safety feature of machine is working	5	3	2
	PC4. Select the correct mould and distribution system (sprue, drop, runners & gates)	5	3	2
	PC5. Ensure that the mould is clean	5	3	2
	PC6. Ensure that barrel & distribution system (sprue, drop, runners & gates) are clean	5	3	2
	PC7. Assemble the mould & distribution system properly on the platen machine	5	3	2
	PC8. Load the mould and distribution system on the machine press for preheating	5	3	2
	PC9. Set parameters for the injection moulding equipment (injection cycle time, temperature and clamping pressure), as per company's SOP	5	3	2
	PC10. Keep all the accessories like cleaning brush, mould release lever (made of brass or aluminum flat), ready including mould release agent	5	3	2
	PC11. Apply the mould release agent appropriately as per SOP	5	3	2

	PC12. Ensure that identified rubber compound strip or granule is ready for feeding into the Injection Moulding machine for the entire shift	5	3	2
	PC13. Ensure that rubber compound strip or granule to be fed is approved by laboratory	5	3	2
	PC14. Match the batch code of each rubber compound with the batch code on the job schedule given by the planning department	5	3	2
	PC15. Ensure desired shape of rubber compound strip or granule for continuous feeding to Injection moulding machine.	5	3	2
	PC16. Ensure, by visual inspection, that rubber compound strip or granule is of desired quality (free of contamination/ bloom)	5	3	2
	PC17. Ensure housekeeping/safety in the moulding area as per SOP	4	2	2
	PC18. Use lifting equipment such as forklift / Trolleys while lifting heavy materials such as moulds and distribution systems to avoid physical injury.	4	2	2
	PC19. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning	3	2	1
	PC20. Ensure that signage indicating hot surfaces is put up wherever necessary	4	3	1
	PC21. Adhere to all safety norms (eg wearing protective gloves, shoes, safety glasses)	3	2	1
	PC22. Comply with health, safety, environment guidelines, regulations in accordance with international/national standards or organizational SOP	2	1	1
		100	60	40
2. RSC/ N0702 (Perform injection moulding operation)	PC1. Handle the rubber compound to avoid contamination	8	5	3
	PC2. Load the material in the correct pattern as per SOP to minimize material overflow/ wastage/ excess flash	9	5	4
	PC3. Check the identified feed strip for dimension uniformity/identified granules	8	5	3
	PC4. Make the rubber compound strip or granule ready for feeding into the machine	9	5	4
	PC5. Start the machine and feeding simultaneously	9	5	4
	PC6. Ensure that moulding pressure and temperature is maintained during the curing cycle	9	5	4
	PC7. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning	9	5	4
	PC8. Cure the product as per SOP	9	5	4
	PC9. Remove the cured product from the mould as per SOP.	9	5	4
	PC10. Ensure Housekeeping and Safety in mixing area	7	5	2
	PC11. Adhere to all other safety norms (like wearing shoes)	7	5	2
	PC12. Comply with health, safety, environment guidelines, regulations in accordance with international/national	7	5	2

	standards or organizational SOP			
		100	60	40
3. RSC/ N0703 (Undertake post moulding activities)	PC1. Remove cured product properly as per SOP	10	5	5
	PC2. Remove the cured compound from the pot/ flow grooves and ensure clean mould for next cycle	10	5	5
	PC3. Trim the piece to remove flash in a manner that does not cause injury to the operator or the product	10	5	5
	PC4. Ensure finishing operation including surface treatment of the cured product if required as per SOP before sending to inspection/warehouse.	10	5	5
	PC5. Dispose waste material in safe manner as per company's SOP	5	5	0
	PC6. Ensure identification and traceability by batch marking/ coding for the right product as per instructions laid down by the company (in terms of batch number, colour, date stamp)	10	5	5
	PC7. Send sample of specified compound/ batch in specified form to lab for testing	9	4	5
	PC8. Send the remaining material to the designated storage area	9	4	5
	PC9. Ensure mould lifting/ ejection/ slide mechanism of the press are properly functioning	9	4	5
	PC10. Adhere to all safety norms (like wearing protective gloves, shoes, safety glasses)	9	4	5
	PC11. Comply with health, safety, environment guidelines, regulations in accordance with international/national standards or organizational SOP	9	4	5
		100	50	50
4. RSC/ N5001 (To carry out housekeeping)	PC1. Inspect the area while taking into account various surfaces	3	3	0
	PC2. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain	3	3	0
	PC3. Ensure that the cleaning equipment is in proper working condition	3	3	0
	PC4. Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person	3	3	0
	PC5. Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces	3	3	0
	PC6. Inform the affected people about the cleaning activity	3	3	0
	PC7. Display the appropriate signage for the work being conducted	5	5	0
	PC8. Ensure that there is adequate ventilation for the work being carried out	8	3	5
	PC9. Wear the personal protective equipment required for the cleaning method and materials being used	8	3	5

	PC10. Use the correct cleaning method for the work area, type of soiling and surface	3	3	0
	PC11. Carry out cleaning activity without disturbing others	3	3	0
	PC12. Deal with accidental damage, if any, caused while carrying out the work	8	3	5
	PC13. Report to the appropriate person any difficulties in carrying out your work	8	3	5
	PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill	8	3	5
	PC15. Ensure that there is no oily substance on the floor to avoid slippage	3	3	0
	PC16. Ensure that no scrap material is lying around	3	3	0
	PC17. Maintain and store housekeeping equipment and supplies	3	3	0
	PC18. Follow workplace procedures to deal with any accidental damage caused during the cleaning process	8	3	5
	PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements	3	3	0
	PC20. Return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored	3	3	0
	PC21. Dispose the waste garnered from the activity in an appropriate manner	2	2	0
	PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly	2	2	0
	PC23. Maintain schedules and records for housekeeping duty	2	2	0
	PC24. Replenish any necessary supplies or consumables	2	2	0
		100	70	30
5. RSC/ N5002 (To carry out reporting and documentation)	PC1. Report data/problems/incidents as applicable in a timely manner	11	6	5
	PC2. Report to the appropriate authority as laid down by the company	11	6	5
	PC3. Follow reporting procedures as prescribed by the company	11	6	5
	PC4. Identify documentation to be completed relating to one's role	11	6	5
	PC5. Record details accurately an appropriate format	11	6	5
	PC6. Complete all documentation within stipulated time according to company procedure	11	6	5
	PC7. Ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly	11	6	5
	PC8. Make sure documents are available to all appropriate authorities to inspect	11	6	5

	PC9. Respond to requests for information in an appropriate manner whilst following organizational procedures	6	6	0
	PC10. Inform the appropriate authority of requests for information received	6	6	0
		100	60	40
6. RSC/ N5003 (To carry out quality checks)	PC1. Ensure that total range of checks are regularly and consistently performed	4	4	0
	PC2. Use appropriate measuring instruments, equipment, tools, accessories etc ,as required	4	4	0
	PC3. Identify non-conformities to quality assurance standards	8	4	4
	PC4. Identify potential causes of non-conformities to quality assurance standards	7	4	3
	PC5. Identify impact on final product due to non-conformance to company standards	7	4	3
	PC6. Evaluating the need for action to ensure that problems do not recur	7	4	3
	PC7. Suggest corrective action to address problem	7	4	3
	PC8. Review effectiveness of corrective action	7	4	3
	PC9. Interpret the results of the quality check correctly	7	4	3
	PC10. Take up results of the findings with QC in charge/appropriate authority.	7	4	3
	PC11. Take up the results of the findings within stipulated time	7	4	3
	PC12. Record of results of action taken	7	4	3
	PC13. Record adjustments not covered by established procedures for future reference	7	4	3
	PC14. Review effectiveness of action taken	7	4	3
	PC15. Follow reporting procedures where the cause of defect cannot be identified	7	4	3
		100	60	40
7. RSC/ N5004 (To carry out problem identification and escalation)	PC1. Identify defects/indicators of problems	5	3	2
	PC2. Identify any wrong practices that may lead to problems	5	3	2
	PC3. Identify practices that may impact the final product quality	5	3	2
	PC4. Identify if the problem has occurred before	5	3	2
	PC5. Identify other operations that might be impacted by the problem	5	3	2
	PC6. Ensure that no delays are caused as a result of failure to escalate problems	5	3	2
	PC7. Take appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required)	5	3	2
	PC8. Consider possible reasons for identification of problems	5	3	2
	PC9. Consider applicable corrections and formulate corrective action	5	3	2
	PC10. Formulate action in a timely manner	5	3	2

PC11. Communicate problem/remedial action to appropriate parties	5	3	2
PC12. Take corrective action in a timely manner	5	3	2
PC13. Take corrective action for problems identified according to the company procedures	4	2	2
PC14. Report/document problem and corrective action in an appropriate manner	4	2	2
PC15. Monitor corrective action	4	2	2
PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved	4	2	2
PC17. Ensure that corrective action selected is viable and practical	4	2	2
PC18. Ensure that correct solution is identified to an identified problem	4	2	2
PC19. Take corrective action for problems identified according to the company procedures	4	2	2
PC20. Ensure that no delays are caused as a result of failure to take necessary action	4	2	2
PC21. Escalate problem as per laid down escalation matrix	2	2	0
PC22. Escalate the problem within stipulated time	2	2	0
PC23. Escalate the problem in an appropriate manner	2	2	0
PC24. Ensure that no delays are caused as a result of failure to escalate problems	2	2	0
	100	60	40