

Model Curriculum

Junior Rubber Technician

SECTOR: Rubber
SUB-SECTOR: Rubber Manufacturing
OCCUPATION: Production
REF ID: RSC/ Q 0831, V1.0
NSQF LEVEL: 3



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by
the

Rubber Skill Development Council
for the

MODEL CURRICULUM

Complying to National Occupational Standards
of

Job Role/ Qualification Pack: 'Junior Rubber Technician' QP No. 'RSC/ Q0831
NSQF Level 3'

Date of Issuance: **December 15, 2015**
Valid Upto: **December 15, 2016**

* Valid up to the next review date of the Qualification Pack



Authorised Signatory

Rubber Skill Development Council

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Junior Rubber Technician

CURRICULUM/SYLLABUS

This program is aimed at training candidates for the job of a “Junior Rubber Technician”, in the “Rubber” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Junior Rubber Technician		
Qualification Pack Name & Reference ID. ID	RSC/ Q 0831		
Version No.	1.0	Version Update Date	As per QP
Pre-requisites to Training	Preferred Class 10 th (High School Education)/ITI/Graduate in Science		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none">• Assisting the operator in material handling in weighing• Assisting the operator in production process and equipment handling• Assisting the operator in post-production process		

This course encompasses three out of three National Occupational Standards (NOS) of “RSC/ Q 0831” Qualification Pack issued by “Rubber Skill Development Council”.

S. No	Module	Key Learning Outcomes	Equipment
1	Global and National Status of Rubber Industry Theory 2 hours Practical 0 hours Corresponding NOS Bridge Module	<ul style="list-style-type: none"> Understand the global rubber industry Understand the rubber industry in India Know the various advantages of rubber 	Laptop, white board, marker, projector
2	Machines Used in Rubber Product Manufacturing Theory 20 hours Practical 45 hours Corresponding NOS Bridge Module	<ul style="list-style-type: none"> Understand different machineries used in rubber processing Identify various machines used in rubber processing Understand and identify mixing mills in rubber processing Understand mixing mill operation Identify and understand internal mixers Understand functioning of internal mixers and mixing methods Understand pre-mixer and post-mixer area equipment Understand extruders and types of extruders Understand combination of extruders and major parts of extruders Perform and understand extruder operation Understand calendar machines and calendaring process Understand classification of calendar and major parts of calendar Perform and understand extruder operation Understand different equipment of Latex based industry Identify and understand equipment like compounding mixer, drying oven, leaching tank, dipping tank, dehydration unit, vulcanising unit etc. 	Power point presentation, LCD projector, Computer, LCD screen, white board, marker, pointer, Hydraulic rubber moulding press, mixing mills, extruders, calendars, ball mills, compounding mixers, dipping tank, drying oven, leaching tank, vulcanisation, curing press
3	Maintenance and Upkeep of Machinery Theory 30 hours Practical 50 hours Corresponding NOS Bridge Module	<ul style="list-style-type: none"> Understand importance of preservation and protection of machines and equipment Understand and perform maintenance of machinery and equipment Understand objective of machine/equipment maintenance Identify various types of maintenance Perform maintenance type like Run To Failure (RTF), Preventive Maintenance (PM), Corrective Maintenance (CM) etc. Familiarise with various tools (hand tools etc.) 	Same as above

		<p>used in rubber processing</p> <ul style="list-style-type: none"> Identify and understand equipment like compounding mixer, drying oven, leaching tank, dipping tank, dehydration unit, vulcanising unit, and curing press. Identify various hazards and risks involved in maintenance activity Act on preventive measure to avoid hazards and risks 	
4	<p>Assisting in Material Handling</p> <p>Theory 36 hours</p> <p>Practical 50 hours</p> <p>Corresponding NOS RSC / N 3101</p>	<ul style="list-style-type: none"> Assist raw material handling Operators to identify various raw materials used in the rubber industry (polymer, filler, processing aids, curatives, special additives etc.) Assist raw material handling operators in the raw material storage area with respect identification, traceability including housekeeping & safety as per SOP. Assist Lab Technician for sampling of raw material from the storage area as per SOP. Assist raw material weighing operators for preparation of mix as per SOP. Assist Mixing Operators for mixing of compounds – master batch, final as per SOP Assist Lab Technician for collection of compounds with proper identification as per SOP. Assist mixing operators for identifying different compounds in the mixing area Assist Material Handling Operators for storage of compounds with proper identification in the storage area as per SOP. Assist Mixing Operator for maintaining records for traceability. Awareness on different safety devices (safety bar, safety guard etc.) attached with different Rubber Processing Machineries. Awareness on Material Safety Data Sheet (MSDS) Assist to carry out disposal of waste and left over tested material safely as per SOP 	<p>Power point presentation, LCD projector, Computer, LCD screen, white board, marker, pointer, crane, conveyor, industrial truck, turn table, dock leveller, pallets, skids, tote pans, cartons, shrink wraps, pallet rack, drive through rack</p>
5	<p>Assisting the operator in production process and equipment handling</p> <p>Theory 25 Hours</p> <p>Practical 20 hours</p> <p>Corresponding NOS RSC / N 3102</p>	<ul style="list-style-type: none"> Assist in identifying different material/compound and component required for different rubber processing (mixing, dipping, extrusion, calendaring, component preparation, building, moulding/curing). Assist in raw material handling operators in the raw material storage area with respect to identification, traceability including housekeeping & safety as SOP. Assist Lab Technician for sampling of raw material from the storage area, collection of compounds and components as per SOP. Assist raw material weighing operators for preparation of mix as per SOP. Assist Mixing Operators for mixing of compounds – master batch, final as per SOP. Assist extrusion operator for extrusion process 	<p>Power point presentation, LCD projector, Computer, LCD screen, white board, marker, pointer, Hydraulic rubber moulding press, mixing mills, extruders, calendars, ball mills, compounding mixers, dipping tank, drying oven, leaching tank, vulcanisation</p>

		(pre, during and post) <ul style="list-style-type: none"> Assist fabric dipping operation Assist calendering operation Assist component preparation Asst. Building operation Assist Curing/moulding operation Assist Finishing operation Assist Material Handling Operators for storage of compounds with proper identification in the storage area as per SOP. Assist Operators of Mixing, Extrusion, Calendering, dipping, stock preparation, building & curing/moulding area for maintaining records. Awareness on different safety devices (safety bar, safety guard etc.) attached with different Rubber Processing Machineries. Carry out disposal of waste and left over tested material safely as per SOP 	
6	Assisting the operator in post-production process Theory 15 Hours Practical 20 hours Corresponding NOS RSC / N 3103	<ul style="list-style-type: none"> Collection of components and check for building Prepare the machineries Building the products, Green Product inspection Curing/Moulding Finishing & finished product inspection. Sampling and Testing Awareness on different safety devices (safety bar, safety guard etc) attached with different Rubber Processing Machineries. Carry out disposal of waste and left over tested material safely as per SOP 	Same as above
7	Standards and Safety 05 Hours Practical 10 hours Corresponding NOS RSC/N3103	<ul style="list-style-type: none"> Collection of components and check for building Prepare the machineries Build the products, Inspect Green Product Perform Curing/Moulding Inspect Finishing & finished product Perform Sampling and Testing Identify Modern methods of quality management systems (ISO-9000, TS-16949, ISO-14001, OHSAS-18001) Identify and Implement 5S 	Power point presentation, LCD projector, Computer, LCD screen, white board, marker, pointer, reporting formats, registers, files,
8	IT Skills Theory 07 hours Practical 15 hours Corresponding NOS Bridge Module	<ul style="list-style-type: none"> Understand parts of a computer Understand basics of computer and concept of motherboard Use Microsoft Word Use Microsoft PowerPoint Use Microsoft Excel Understand Internet and its uses 	Power point presentation, LCD projector, Computer, LCD screen, white board, marker, pointer, Microsoft Office, Internet Connectivity
	Total 350 hours		



	Theory 140 Hours Practical 210 Hours		
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Grand Course Duration: 350 Hours
(This syllabus/ curriculum has been approved by [Rubber Skill Development Council](#))

Trainer Prerequisites for Job role: “Junior Rubber Technician” mapped to Qualification Pack: “RSC/Q 0831 Version 1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “RSC/Q0831 Version 1.0”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well- organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualification	Any Graduate preferably in rubber or polymer
4a	Domain Certification	Certified for Job Role: “Junior Rubber Technician” mapped to QP: “RSC/Q0831”. Minimum accepted score as per RSDC guidelines is 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/ Q1402”. Minimum accepted score as per RSDC guidelines is 80%.
5	Experience	5+ years of relevant work-experience, above supervisor level

Annexure: Assessment Criteria

Assessment Criteria for Junior Rubber Technician	
Job Role	Junior Rubber Technician
Qualification Pack	RSC/Q 0831 Version 1.0
Sector Skill Council	Rubber Skill Development Council

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for Qualification Pack has been created based on the NOSs and performance criteria by RSDC. Each Performance Criteria (PC) has been assigned marks proportional to its importance within NOS and weightages have also been given among the NOSs accordingly. RSDC has laid down the proportion of marks for Skills and Theory for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criteria
5	To pass the Qualification Pack , every trainee should score a minimum of 70% aggregate
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

Marks Allocation

Assessable Outcome	Assessment Criteria	Total	Theory	Practical
1. RSC / N 3101 Assisting the operator in material handling and weing	PC1. Assist raw material handling Operators to identify various raw materials used in the rubber industry (polymer, filler, processing aids, curatives, special additives etc.)	7	5	2
	PC2. Assist raw material handling operators in the raw material storage area with respect identification, traceability including housekeeping & safety as per SOP.	7	5	2
	PC3. Assist Lab Technician for sampling of raw material from the storage area as per SOP.	8	5	3
	PC4. Assist raw material weighing operators for preparation of mix as per SOP.	8	5	3
	PC5. Assist Mixing Operators for mixing of compounds – master batch, final as per SOP	10	5	5
	PC6. Assist Lab Technician for collection of compounds with proper identification as per SOP.	10	5	5
	PC7. Assist mixing operators for identifying different compounds in the mixing area	10	5	5
	PC8. Assist Material Handling Operators for storage of compounds with proper identification in the storage area as per SOP.	10	5	5
	PC9. Assist Mixing Operator for maintaining records for traceability.	10	5	5
	Awareness on different safety devices (safety bar, safety guard etc) attached with different Rubber Processing Machineries. Awareness on Material Safety Data Sheet (MSDS)	10	5	5
	PC10. Assist to carry out disposal of waste and left over tested material safely as per SOP	10	5	5
		100	55	45
2. RSC / N 3102 Assisting the operator in production process and equipment handling	PC1.Assist in identifying different material/compound and component required for different rubber processing (mixing, dipping, extrusion, calendaring, component preparation, building, moulding/curing).	5	5	0
	PC2.Assist in raw material handling operators in the raw material storage area with respect to identification, traceability including housekeeping & safety as SOP.	5	5	0
	PC3.Assist Lab Technician for sampling of raw material from the storage area, collection of compounds and components as per SOP.	5	5	0
	PC4. Assist raw material weighing operators for preparation of mix as per SOP.	5	5	0
	PC5. Assist Mixing Operators for mixing of compounds – master batch, final as per SOP.	10	5	5
	PC6. Assist extrusion operator for extrusion process (pre, during and post)	10	5	5
	PC7.Assist fabric dipping operation	5	5	0
	PC8.Assist calendaring operation	5	5	0
	PC9.Assist component preparation	5	5	0
	PC10.Asst. Building operation	10	5	5
	PC11.Assist Curing/moulding operation	10	5	5
	PC12.Assist Finishing operation	5	5	0
	PC13.Assist Material Handling Operators for storage of compounds with proper identification in the storage area as per SOP.	5	5	0

	PC14. Assist Operators of Mixing, Extrusion, Calendering, dipping, stock preparation, building & curing/moulding area for maintaining records. 10	5	5	0
	Awareness on different safety devices (safety bar, safety guard etc) attached with different Rubber Processing Machineries.	5	5	0
	PC15. Carry out disposal of waste and left over tested material safely as per SOP	5	5	0
		100	80	20
3. RSC/N 3103 Assisting the operator in post production process	PC1. Collection of components and check for building	10	5	5
	PC2. Prepare the machineries	0	5	5
	PC3. Building the products,	0	5	5
	PC4. Green Product inspection	0	5	5
	PC5. Curing/Moulding	0	5	10
	PC6. Finishing & finished product inspection.	0	5	5
	PC7. Sampling and Testing	0	5	10
	Awareness on different safety devices (safety bar, safety guard etc) attached with different Rubber Processing Machineries.	10	5	5
	PC8. Carry out disposal of waste and left over tested material safely as per SOP	0	5	5
		100	45	55



Rubber Skill Development Council
PHD House (4th Floor), Opp. Asian Games Village, Siri Fort Institutional Area, New Delhi - 110016