
APPRENTICESHIP CURRICULUM

FOR

MIXING SUPERVISOR

Program

SECTOR: RUBBER

BLOCK I (Basic Training):

COURSE NAME: Mixing Supervisor

QP Name, QP Code and Version No., and NSQF Level: Mixing Supervisor:
RSC/Q0111, V 1.0, NSQF Level 5

Training Duration: 504 Hours (3 Months)

BLOCK II (Training at Employer Location):

COURSE NAME: Mixing Supervisor

QP Name, QP Code and Version No., and NSQF Level: Mixing Supervisor,
RSC/Q0111, V 1.0 NSQF Level 5

Training Duration: 1512 Hours (9 Months)

TOTAL PROGRAM DURATION: 2016 Hours (12 Months)

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PROGRAM CURRICULUM

Program Name	Mixing Supervisor		
Program Duration	504 Hours (3 Months)		
Version No.	1.0	Version Update Date	02/12/15
Minimum Educational Qualifications	XII/Diploma/ITI/Graduate in Science Post Graduate in Science		
Block 1 Training Outcomes for Mixing Supervisor Course	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Employ apt methods to supervise the preparatory activities for mixing • Employ apt methods to supervise the mixing operations • Demonstrate the process of conducting post-mixing supervisory operation • Demonstrate how to carry out housekeeping • Illustrate how to carry out reporting and documentation • Practice how to carry out quality checks • Demonstrate how to carry out problem identification and escalation 		
Block II Training Mixing Supervisor Course	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Discuss methods to supervise the preparatory activities for mixing • Demonstrate how to supervise the mixing operations • Demonstrate the process of conducting post-mixing supervisory operation • Demonstrate how to carry out housekeeping • Practice reporting and documentation • Practice how to carry out quality checks • Demonstrate how to carry out problem identification and escalation 		

Note: 1 week has 42 hours of learning (8 hrs. a day x 5 days a week). For example:

S. No.	QP2 Durations (in hrs)	Weeks	Months
1	504	12	3
2	1512	36	9
3	2016	48	12

Block I: This is a training block done in the Instructor-Led training approach, with theory and practical sessions. The training sessions may be held at training provider's premises.

Block II: This is a training block done at the Employer location. This is largely hands-on with inputs/guidance provided by the on-site mentors and supervisors. The employer may conduct instructor-led

sessions in classrooms/ workshops and may also look at new age – technology-based performance support tools for additional support.

Basic Training (Block I)

General Information

1. **Course Name:** Mixing Supervisor
2. **QP Code with Version No. and QP Name:** RSC/Q0111 V1.0, Mixing Supervisor
3. **NSQF Level:** 5
4. **Theory hours:** 164 Hrs
5. **Practical hours:** 340 Hrs
6. **Batch Size:** 30
7. **Power Norms:** 6 KW for Workshop
8. **Space Norms:** 10 (x20=200sq) feet
9. **Assessment:** QP based assessment is conducted by an Assessment Agency as deputed by the respective Sector Skill Council.
10. **Tools, Equipment, and Machinery required:** As per Annexure I
11. **Trainer Qualification:** Trainer Prerequisites for Course: Mixing Supervisor

Sr. No.	Area	Details
1	Job Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "RSC/Q0111 Version 1.0".
2	Personal Attributes	<p>Aptitude for conducting training, and pre/post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, authoritative ability in delivering commands for work implementation; a passion for quality and for developing others; well-organized and focused, strong reasoning and analytical mind set.</p> <p>This job requires the individual to have good leadership qualities. The individual should be able to delegate task appropriately, considering the ability and availability of manpower in his team; possess effective time management skill for getting the work done in a given time frame, and keep the team members motivated for carrying out operations efficiently and learning new methods.</p>
3	Minimum Educational Qualifications	XII/Diploma/ITI/Graduate in Science Post Graduate in Science

4a	Domain Certification	<p>Certified for Job Role “Mixing Supervisor” mapped to QP “RSC/Q0111 Version 1.0”. Minimum accepted score is 80% as per SSC guidelines.</p> <p>5 years of work/training experience with respect to QP/Occupation Additional certification in customer orientation, dealing with difficult customers, written communication etc. will be an added advantage.</p>
4b	Platform Certification	<p>Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score for the trainer is 80% as per SSC guidelines.</p>
5	Experience	<p>Field experience: Minimum 5 years’ experience in the same domain</p>

Curriculum

Block I is aimed at training candidates for the course of a “Mixing Supervisor”, in the “Rubber” Sector/Industry and aims at building the following key competencies amongst the learner.

S. No.	Module Name	Key Learning Outcomes	Equipment Required
1.	Supervise the Preparatory Activities for Mixing Theory Duration (hh:mm) 25:00 Practical Duration (hh:mm) 58:00 Corresponding NOS Code RSC/N0130	<ul style="list-style-type: none"> Evaluate and ensure that all the equipment and machines are operational Identify and ensure all tools required for the mixer area operations are readily available Analyse and ensure regular checks are conducted for machines for accuracy and readiness for operation Identify defective equipment and take action as per SOP Recognise and set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement Evaluate and observe, in case settings on automated mixer are set by technical associates, ensure operator doesn't fiddle with settings and follows only authorized settings List and arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation Estimate and ensure that all services such as steam, water, electricity, etc. are available at all times Comply with the maintenance schedule and ensure that maintenance programme of the mixer are carried out on regular basis Assemble and batch off mill gauge and proper cooling water flow. Demonstrate the method of roller die set up. List and check the material coming from raw material stores and confirm that it is as per the scheduler Evaluate and ensure the receiving of correct material in mixing area 	<ul style="list-style-type: none"> 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 Carbon black pellets Ribbon blender Internal mixer, recording

		<p>i.e. the material has lab release ID tags or colour code marking</p> <ul style="list-style-type: none"> • Inspect the material carefully to detect torn bag, contaminated material etc. and report the same to the stores supervisor and his foreman before starting the mixing operation and arrange for replacement of affected material in case required • Collect and get the pigments /chemicals filled in the appropriate bins for facilitating weighing • Inspect and ensure polymer bales or precut and are kept near the put up conveyors for final weighing and charging into mixer when the mixing operation commences • Devise methods to ensure functioning of carbon black manual or auto feeders • Devise methods to ensure functioning of process oil manual or auto feeding units • Devise methods to ensure availability of slab dip or dip slurry for cooling and using as separating agents for mixed compound slabs/sheets • Devise methods to ensure the manpower required for achieving the compound mix schedule are available. • Arrange for the substitute in case of absenteeism of any team member due to any injury, accident, leave etc. • Assess and delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame • Organize and train the manpower for handling emergency situations • Identify and resolve issues (if any) among the team members before the commencement of mixing operations • Identify and ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes). • Demonstrate how to manage first aid, general medication etc. of the team members 	
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		<ul style="list-style-type: none"> • Arrange for hospitalization in case of accident • Identify and ensure no tampering of safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area • Assess and avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department • Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards. 	
2.	<p>Supervise the Mixing Operations</p> <p>Theory Duration (hh:mm) 25:00</p> <p>Practical Duration (hh:mm) 58:00</p> <p>Corresponding NOS Code RSC/N0131</p>	<ul style="list-style-type: none"> • Assess and ensure that the operator follows the sequence of addition of ingredients and mixing instructions as per the authorized mixing instructions issued by technical (manually/through automated operations). • Assess and ensure that the operator follow the sequence to make available different compound mix as per the requirement. • Evaluate and ensure mixers temperature/pressure/volume restrictions are respected and followed. • List and ensure all laid out procedures/guidelines are in compliance. • Organise and keep a check on cycle time (between one batch to another) to attain efficiency. • Arrange properly and ensure no by passing/ short cutting of sequence in compound preparation. • Calculate and ensure adequate cooling of mixed compound before laying down on skids/pallets/ gondolas. • Demonstrate how to avoid contamination while carrying out the mixing operation. • Calculate and ensure proper application of slab dip /dip slurry for facilitating the stacking of mixed compounds and its easy usage for next processing. • Manipulate and ensure compliance of compounds disposition for work 	<ul style="list-style-type: none"> • Power point presentation • LCD projector • Computer • LCD screen • White board • Marker • Pointer • Range • Conveyor • Industrial truck • Turn table • Dock leveller • Pallets • Skids • Tote pans • Cartons • Shrink wraps • Pallet rack • Drive through rack

		<p>away through mixers respecting the directive.</p> <ul style="list-style-type: none"> Recognise and ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes). Arrange for hospitalization in case of accident. Demonstrate how to manage first aid, general medication etc. of the team members. State how to avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards. 	
3.	<p>Conduct Post-mixing Supervisory Operation</p> <p>Theory Duration (hh:mm) 23:00</p> <p>Practical Duration (hh:mm) 56:00</p> <p>Corresponding NOS Code RSC/N0132</p>	<ul style="list-style-type: none"> Arrange and ensure identification and traceability by batch marking/coding for the compound as per the instructions laid down by the company. List and send sample of the prepared mix in the specified sample size and method as directed by the company. Organise and set the mixed compound stored on designated skids/ gondolas/pallets with proper ID tags and hold until release tags in the allotted storage area. Assess and ensure the storage is done to facilitate the FIFO. Categorize and ensure compliance of FIFO by the user department. Evaluate and get the mixer properly clean and ready after completion of mixing operation. Assess on continuous operations, and ensure mandatory cleaning procedures, as per instructions from Technical, between compound changes and at shift ends are complied with. Compute maintenance time for any repair and scheduled long maintenance of mixer/s. Arrange to place DO NOT USE tag on compound having any defects; 	<ul style="list-style-type: none"> 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>either hold it for any other use, reschedule its preparation.</p> <ul style="list-style-type: none"> • Arrange to reschedule the mixing of the affected compound urgently to keep the plant process on for smooth running. • Reorganise and ensure the storage of master batch in mixing area only; release only the final batch for further processing. • Identify and send the defective/rejected material to hold area and keep the storage space free for OK material. • Provide mixers on scheduled dates for Mixer inspections/ rotor clearance checks. • Assess and ensure all the mixing details are properly recorded in the forms/formats/log books/computers. • Evaluate and update the production sheet with the details of prepared material and record down time with details on reasons, time from to end and mention action taken to solve the down time. • List of paper /computer documents must be complete and traceable in all respect. • List and records of the team members for work done, availability in shift, working hours etc. • Organize and maintain inventory of mixed compounds. • Identify and ensure the held up compound is disposed of by technical. • Calculate and ensure the action on disposition of off spec material is carried out promptly. • Identify and ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes). • Arrange for hospitalization in case of accident. • Demonstrate how to manage first aid, general medication etc. of the team members. • State how to avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department. 	
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		<ul style="list-style-type: none"> Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards. 	
4.	<p>To Carry out Housekeeping</p> <p>Theory Duration (hh:mm) 24:00</p> <p>Practical Duration (hh:mm) 47:00</p> <p>Corresponding NOS Code RSC/N5001</p>	<ul style="list-style-type: none"> Inspect the area while taking into account various surfaces. Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain. Appraise and ensure that the cleaning equipment is in proper working condition. Choose the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person. Analyse and plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces Judge the situation and inform the affected people about the cleaning activity. Employ methods to display the appropriate signage for the work being conducted. Analyse and ensure that there is adequate ventilation for the work being carried out. Demonstrate how to wear the personal protective equipment required for the cleaning method and materials being used. Use the correct cleaning method for the work area, type of soiling and surface. Demonstrate how to carry out cleaning activity without disturbing others. Illustrate how to deal with accidental damage, if any, caused while carrying out the work. Report to the appropriate person any difficulties in carrying out your work. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill. 	<ul style="list-style-type: none"> White Board Marker Black board Chalk Duster Laptop/PC Projector or Flipcharts Participant Handbook / Copies of Hand-outs Different Cleaning Equipment

		<ul style="list-style-type: none"> Administer and ensure that there is no oily substance on the floor to avoid slippage. Assess and ensure that no scrap material is lying around. Manage, maintain and store housekeeping equipment and supplies. List and follow workplace procedures to deal with any accidental damage caused during the cleaning process. Assess and ensure that, on completion of the work, the area is left clean and dry and meets requirements. Describe how to return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored. Employ methods to dispose the waste garnered from the activity in an appropriate manner. Employ methods to dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly. Organize and maintain schedules and records for housekeeping duty. List and replenish any necessary supplies or consumables. 	
5.	<p>To Carry out Reporting and Documentation</p> <p>Theory Duration (hh:mm) 22:00</p> <p>Practical Duration (hh:mm) 33:00</p> <p>Corresponding NOS Code RSC/N5002</p>	<ul style="list-style-type: none"> Report to the appropriate authority as laid down by the company. Assess and follow reporting procedures as prescribed by the company. Identify documentation to be completed relating to one's role. Record details accurately an appropriate format. Analyse and complete all documentation within stipulated time according to company procedure. Evaluate and ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly. 	<ul style="list-style-type: none"> White Board Marker or Black Board Chalk Duster Laptop/PC Projector or Flipcharts Participant Handbook Sample of Documentations Sample of Reports Sample of Procedure Sample of Work Instructions

		<ul style="list-style-type: none"> • Arrange and make sure documents are available to all appropriate authorities to inspect • Describe how to respond to requests for information in an appropriate manner whilst following organizational procedures. • Inform the appropriate authority of requests for information received. 	
6.	<p>To Carry out Quality Checks</p> <p>Theory Duration (hh:mm) 22:00</p> <p>Practical Duration (hh:mm) 43:00</p> <p>Corresponding NOS Code RSC/N5003</p>	<ul style="list-style-type: none"> • Evaluate and ensure that total ranges of checks are regularly and consistently performed. • Use appropriate measuring instruments, equipment, tools, accessories etc., as required. • Identify non-conformities to quality assurance standards. • Identify potential causes of non-conformities to quality assurance standards. • Identify impact on final product due to non-conformance to company standards. • Evaluate the need for action to ensure that problems do not recur. • Analyse and suggest corrective action to address problem. • Plan and review effectiveness of corrective action. • Interpret the results of the quality check correctly. • Inspect and take up results of the findings with QC in charge/appropriate authority. • Inspect and take up the results of the findings within stipulated time. • Formulate record of results of action taken. • Interpret and record adjustments not covered by established procedures for future reference. • Revise and review effectiveness of action taken. • Identify and follow reporting procedures where the cause of defect cannot be identified. 	<ul style="list-style-type: none"> • White Board • Marker or Black board • Chalk • Duster • Laptop/PC • Projector or Flipcharts • Participant Handbook / Copies of Handouts • Tyre / Rubber products with different Quality defects • Magnifying glass • Inspection table with appropriate light arrangement
7.	<p>To Carry out Problem Identification and Escalation</p> <p>Theory Duration (hh:mm)</p>	<ul style="list-style-type: none"> • Identify defects/indicators of problems. • Identify any wrong practices that may lead to problems. • Identify practices that may impact the final product quality. 	<ul style="list-style-type: none"> • White Board • Marker • Black board • Chalk • Duster

	<p>23:00</p> <p>Practical Duration (hh:mm) 45:00</p> <p>Corresponding NOS Code RSC/N5004</p>	<ul style="list-style-type: none"> • Identify if the problem has occurred before. • Identify other operations that might be impacted by the problem. • Assess and ensure that no delays are caused as a result of failure to escalate problems. • Arrange and take appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required). • Appraise and consider possible reasons for identification of problems. • Compare and consider applicable corrections and formulate corrective action. • Formulate action in a timely manner. • Demonstrate how to communicate problem/remedial action to appropriate parties. • Illustrate the accurate procedures to take corrective action in a timely manner. • Demonstrate how to take corrective action for problems identified according to the company procedures. • Analyse and report/document problem and corrective action in an appropriate manner. • Analyse and monitor corrective action. • Evaluate implementation of corrective action taken to determine if the problem has been resolved. • Evaluate and ensure that corrective action selected is viable and practical. • Examine and ensure that correct solution is identified to an identified problem. • Analyse and take corrective action for problems identified according to the company procedures. • Assess and ensure that no delays are caused as a result of failure to take necessary action. 	<ul style="list-style-type: none"> • Laptop/PC • Projector or Flipcharts • Participant Handbook / Copies of Hand-outs
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		<ul style="list-style-type: none"> • Demonstrate how to escalate problem as per laid down escalation matrix. • Demonstrate how to escalate the problem within stipulated time. • Demonstrate how to escalate the problem in an appropriate manner. • Assess and ensure that no delays are caused as a result of failure to escalate problems. 	
	<p>Total Duration</p> <p>Theory Duration 164:00</p> <p>Practical Duration 340:00</p> <p>Total 504:00</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none"> • White Board, Markers and Eraser. • Projector with screen. • Flip chart with markers. • Faculty's PC/Laptop with latest configuration and internet connection. • Supporting software / applications for projecting audio, video, recording. • Presentation tools to support learning activities: <ul style="list-style-type: none"> ○ Intranet. ○ Email. ○ IMs. ○ Learning management system e.g. Moodle, Blackboard to enable blended learning. • Microphone / voice system for lecture and class activities. • Handy Camera. • Stationery kit – Staples, Glue, Chart Paper, Sketch Pens, Paint Box, Scale, A4 Sheets. • For IT Lab sessions: Computer Lab with 1:1 PC: trainee ratio and having internet connection, MS Office / Open office, Browser, Chat Tools. • Assessment and Test Tools for day to day online Tests and Assessments. • For team discussions: Adequate seating arrangement in full / half circle format for one or more teams as per planned team composition. • Reading Resources: Access to relevant sample documents and learning forums to enable self-study before and after each training session. 	

Grand Total Course Duration: 504 Hours, 0 Minutes

Hands-On at Employer Location (Block II)

General Information

1. **Name of the Course:** Mixing Supervisor
2. **QP Code with Version No. and QP Name:** RSC/Q0111, V1.0, Mixing Supervisor
3. **NSQF Level:** 5
4. **Training Duration:** 1512 Hrs
5. **Batch Size:** 30
6. **Assessment:** QP based assessment is conducted at an industry-level during the OJT phase
7. **Tools, Equipment, and Machinery required:** As per Annexure I
8. **Trainer Qualification:** Trainer Prerequisites for course: Mixing Supervisor

Sr. No.	Area	Details
1	Job Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “RSC/Q0111 Version 1.0”.
2	Personal Attributes	<p>Aptitude for conducting training, and pre/post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, authoritative ability in delivering commands for work implementation; a passion for quality and for developing others; well-organized and focused, strong reasoning and analytical mind set.</p> <p>This job requires the individual to have good leadership qualities. The individual should be able to delegate task appropriately, considering the ability and availability of manpower in his team; possess effective time management skill for getting the work done in a given time frame, and keep the team members motivated for carrying out operations efficiently and learning new methods.</p>
3	Minimum Educational Qualifications	XII/Diploma/ITI/Graduate in Science Post Graduate in Science
4a	Domain Certification	<p>Recommended: Certified for Job Role “Mixing Supervisor” mapped to QP “RSC/Q0111 Version 1.0”. Minimum recommended score is 80%.</p> <p>5 years of work/training experience with respect to QP/Occupation Additional certification in customer orientation, dealing with difficult customers, written communication etc. will be an added advantage.</p>
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted score for the trainer is 80% as per SSC guidelines.
5	Experience	Field experience: Minimum 5 years’ experience in the same domain

Curriculum

Block II is aimed at training candidates for the course of a “Mixing Supervisor”, in the “Rubber” Sector/Industry and aims at building the following key competencies amongst the learner.

S. No.	Module Name	Key Learning Outcomes	Equipment Required
1.	Supervise the Preparatory Activities for Mixing Theory Duration (hh:mm) 44:00 Practical Duration (hh:mm) 175:00 Corresponding NOS Code RSC/N0130	<ul style="list-style-type: none"> Select and ensure that all the equipment and machines are operational Explain rubber compound processing with different types of Mixers Evaluate and ensure that all tools required for the mixer area operations are readily available Categorize the different type of Mixers and their operation Organize regular checks for machines for accuracy and readiness for operation Illustrate the effect of improper processing on properties of rubber compound & product Identify defective equipment and take action as per SOP List the implications (impact on internal/external customers) of defective products, materials or components Test and set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement Demonstrate the process of proper compound mixing and ingredient dispersion Evaluate and ensure that operator doesn't fiddle with settings and follows only authorized settings if settings on automated mixer are set by technical associates Arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation Assess and ensure that all services such as steam, water, electricity, etc. are available at all times 	<ul style="list-style-type: none"> Open Mixing mills Compounding mixers Drying oven Carbon black pellets Internal mixer Bunkers for keeping different chemical ingredients Oil bunkers Pellets for keeping compounded Rubber Knife Weighing balance Pyrometer Stop watch Polythene sheets for covering rubber compound Gloves Apron Safety shoes Face mask Trolleys for compound transport

		<ul style="list-style-type: none"> • Comply with the maintenance schedule and ensure that maintenance programme of the mixer are carried out on regular basis • Use of Computer/application software • Assemble and batch off mill gauge and proper cooling water flow • Demonstrate the method of roller die set up • List and check the check the material coming from raw material stores and confirm that it is as per the scheduler • List the specifications of materials and its importance in the compound preparation • Evaluate and ensure the receiving of correct material in mixing area i.e. the material has lab release ID tags or colour code marking • Inspect the material carefully to detect torn bag, contaminated material etc. and report to the stores supervisor before starting the mixing operation and arrange for replacement of affected material, if required • Collect and get the pigments /chemicals filled in the appropriate bins to facilitate weighing • State the importance of proper weighing of rubber and other ingredients • Illustrate the effect of wrong weighing of ingredients • Inspect and ensure polymer bales or pre-cut are kept near the put up conveyors for final weighing and charging into mixer when the mixing operation commences • Devise methods to ensure functioning of carbon black manual or auto feeders, process oil manual or auto feeding units • Devise methods to ensure availability of slab dip or dip slurry for cooling and using as separating agents for mixed compound slabs/sheets • Devise methods to ensure that the manpower required for achieving 	
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		<p>the compound mix schedule are available</p> <ul style="list-style-type: none"> • Arrange for the substitute if a team member is absent due to any injury, accident, leave etc. • State the relevance of addressing issues with superiors / HR that is beyond his control • Assess and delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame • State the importance of effective time and human resource management • Manage and train the manpower for handling emergency situations • Construct MSDS (Material Safety Data Sheet) for all incoming raw materials • Assess and resolve issues (if any) among the team members before the commencement of mixing operations • Identify and ensure that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes) and the given environment guidelines and regulations • Demonstrate the proper handling of rubbers & chemicals • Construct Material Safety Data Sheets (MSDS) for all the materials used • Demonstrate how to manage first aid, general medication, hospitalization in case of an accident, etc. of the team members • Demonstrate appropriate responses to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster • Evaluate and ensure no safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area are tampered • Assess and avoid spillage and in case spillage occurs, follow the prescribed safety measures provided by the department 	
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<p>2.</p>	<p>Supervise the Mixing Operations</p> <p>Theory Duration (hh:mm) 41:00</p> <p>Practical Duration (hh:mm) 169:00</p> <p>Corresponding NOS Code RSC/N0131</p>	<ul style="list-style-type: none"> • Assess and follow the sequence of addition of ingredients and mixing instructions as per the authorized mixing instructions issued by technical (manually/through automated operations) • Use of correct and updated formulation • Categorize the properties of material in use and compound prepared • Analyze and ensure that the operator follows the sequence to make available different compound mix as per the requirement • Demonstrate rubber compound processing with different types of Mixers • Analyze and ensure mixers temperature/pressure/volume restrictions are respected and followed • State the implications of not restricting the violation of mixer machine limitations on temperature /pressure/mix batch volumes • Judge and ensure all laid out procedures/guidelines are in compliance • Examine proper monitoring of manpower and machines • Evaluate and keep a check on cycle time (between one batch to another) to attain efficiency • State the importance of meeting schedules for mixing operation • Explain the implications of delay in mixing operations • State the importance of maintaining efficiency and attain scheduled target shift wise • Describe the implications of not meeting the requirement of the other departments in a timely manner • Analyze and ensure no bye passing/ shortcutting of sequence in compound preparation • State the importance of following SOP for compound preparation • Analyze and ensure adequate cooling of mixed compound before 	<ul style="list-style-type: none"> • Conveyor • Industrial truck • Turn table • Pallets • Cartons • Pallet rack • Open Mixing mills • Compounding mixers • Drying oven • Carbon black pellets • Internal mixer • Bunkers for keeping different chemical ingredients • Oil bunkers • Pellets for keeping compounded Rubber • Knife • Weighing balance • Pyrometer • Stop watch • Polythene sheets for covering rubber compound • Gloves • Apron • Safety shoes • Face mask • Trollies for compound transport • Crayon for identification
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		laying down on skids/pallets/ gondolas <ul style="list-style-type: none"> Assess and avoid contamination while carrying out the mixing operation Practice proper application of slab dip /dip slurry for facilitating the stacking of mixed compounds and its easy usage for next processing Explain the implications of non-confirming compound preparation Explain the implications of poor or improper usage of slab dip /dip slurry for compound sheet easy storage and separation Practice compliance of compounds dispositional for work away through mixers respecting the directive State the implications of not meeting the quality specifications Devise strategies so that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes), and the prescribed environment guidelines and regulations Practice proper handling of rubbers and chemicals Demonstrate how to manage first aid, general medication, hospitalization in case of an accident, etc. of the team members Assess and avoid spillage and in case of spillage occur, follow safety measures as laid down by the safety department 	
3.	Conduct Post-mixing Supervisory Operation Theory Duration (hh:mm) 44:00 Practical Duration (hh:mm) 174:00 Corresponding NOS Code RSC/N0132	<ul style="list-style-type: none"> Explain and ensure identification and traceability by batch marking/coding for the compound as per the company instructions State the importance of quality checks and the process involved in it Demonstrate batch marking techniques State the implications of incorrect batch marking Demonstrate the coding systems for identification and traceability Analyse and send sample of the prepared mix in the specified 	<ul style="list-style-type: none"> Mixing mills Compounding mixers Drying conveyor Industrial truck Turn table Pallets Cartons Pallet rack Open mixing mills Compounding mixers Drying Oven

		<p>company directed sample size and method</p> <ul style="list-style-type: none"> • Construct Material Safety Data Sheets (MSDS) for all the materials used Procedures for storing and retention period for samples • Collect and get the mixed compound stored on designated skids/ gondolas/pallets with proper ID tags and hold until the release of tags in the allotted storage area • Describe aspects related to weighing scales • Schedule and ensure the storage is done to facilitate the FIFO • Evaluate compliance of FIFO by the user department • Collect and get the mixer properly clean and ready after completion of mixing operation • Demonstrate mandatory cleaning procedures during continuous operations between compound changes and at shift ends are complied with, as per instructions from technical • Demonstrate methods and techniques involved in mixing operation • Compute maintenance time for any repair and scheduled long maintenance of mixer/s • Arrange and place DO NOT USE tag on compounds having any defects; either hold it for any other use, reschedule its preparation • categorize the types of defects leading to rejections and their indicators, reasons and possible solutions • Arrange to reschedule the mixing of the affected compound urgently to keep the plant in process for smooth running • Assess and ensure the storage of master batch in mixing area only; release only the final batch for further processing • Explain the storage life of prepared compound, ambient temperature and its effect on final product 	<ul style="list-style-type: none"> • Carbon black pellet • Internal mixer • Bunkers for keeping different chemical ingredients • Oil bunkers • Pellets for keeping compounded rubber • Knife • Weighing balance • Pyrometer • Stopwatch • Polythene sheets for covering rubber compound • Gloves • Apron • Safety shoes • Face mask • Trollies for compound transport • Crayon for identification • Identification tags • Laptop/PC
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		<ul style="list-style-type: none"> • Test and send the defective/rejected material to hold area and keep the storage space free for OK material • Inspect and provide mixers on scheduled dates for Mixer inspections/ rotor clearance checks • State the importance of timely delivery of prepared compound • Prepare record logs/books where all mixing details are properly recorded in the forms/formats/log books/computers • Use of Computer/application software – Use password as per Company SOP under information leaking problem • Explain the importance of record maintenance • Prepare and update the production sheet with the details of prepared material and record the time with details on reasons, time from to end and mention undertaken action • Demonstrate how to obtain and interpret records, charts, specifications, equipment manuals, history/technical support reports, and other documents • Organize paper /computer documents and ensure them to be complete and traceable in all respect • Explain the aspects of traceability • Organize records of the team members according to work done, availability in shift, working hours etc. • Demonstrate effective communication at different levels • Analyze and keep track of team members • Maintain inventory of mixed compounds • Demonstrate how held up compound is disposed of following technical directions • State the implications of inappropriate waste disposal 	
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		<ul style="list-style-type: none"> Assess and ensure the action on disposition of off-spec material is carried out promptly Demonstrate the removal of waste material and downgraded material from each area operations to concerned places Identify and ensure that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes), and the ascribed environment guidelines and regulations Demonstrate how to manage first aid, general medication, arrangement for hospitalization in case of an accident, etc. of the team members Assess and avoid spillage and in case if spillage occurs, follow the measures laid down by safety department 	
4.	<p>To Carry out Housekeeping</p> <p>Theory Duration (hh:mm) 42:00</p> <p>Practical Duration (hh:mm) 170:00</p> <p>Corresponding NOS Code RSC/N5001</p>	<ul style="list-style-type: none"> Demonstrate pre housekeeping activities Inspect the area, taking into account various surfaces Demonstrate how to inspect a work area to decide what cleaning it needs Identify the most appropriate place to carry out test cleans and why this should be done before applying treatments Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain Demonstrate methods and list materials used for cleaning variety of surfaces Assess if the cleaning equipment is in proper working condition Demonstrate the correct method for cleaning equipment and/or machinery used during your work Choose the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available, and inform the appropriate person 	<ul style="list-style-type: none"> White Board Marker or Blackboard + Chalk Duster Laptop/PC + Projector or Flipcharts Participant Handbook / Copies of Handout Different Cleaning Equipment

		<ul style="list-style-type: none"> • Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces • Formulate the correct sequence for cleaning the work area • Analyze and inform the affected people about the cleaning activity • Demonstrate the appropriate signage for the work being conducted • Assess if there is adequate ventilation for the work being carried out • Practice wearing personal protective equipment required for the cleaning method and materials being used • Explain the importance of personal protective equipment • List appropriate personal protective equipment for the work area, cleaning equipment, tools, materials and chemicals used • Use the correct cleaning method for the work area, type of soiling and surface • Categorize the types of cleansing agents that are not to be mixed together • State the importance of applying treatments evenly and the effect of not doing this • Demonstrate how to carry out cleaning activity without disturbing others • Evaluate and deal with accidental damage, if caused while carrying out the work • Demonstrate the process of cleaning the surfaces without causing injury or damage • Evaluate and report to the appropriate person for any difficulties while working • Demonstrate the procedures for reporting any unidentified soiling • Identify and report to the appropriate person any additional cleaning that is required outside one's responsibility or skill • Explain the escalation procedures for soils or stains that could not be removed 	
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		<ul style="list-style-type: none"> • Analyze and ensure that no scrap material is lying around, and there is no oily substance on the floor to avoid slippage • Organize and maintain store housekeeping equipment and supplies • Illustrate workplace procedures to deal with any accidental damage caused during the cleaning process • Analyze and ensure that, on completion of the work, the area is left clean and dry and meets requirements • Outline the time taken by the treatment to work • List the methods to check the treated surface and equipment on completion of cleaning • Identify and return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored • Illustrate the procedures for disposing of or storing personal protective equipment • Demonstrate the process of disposal of the waste garnered from the activity in an appropriate manner • Demonstrate the procedures for disposing of waste • Demonstrate the process of disposal of the used and unused solutions according to the manufacturer's instructions, and clean the equipment thoroughly • Explain the importance of following manufacturer's instructions on cleaning agents • Illustrate the process of maintaining schedules and records for housekeeping duty and replenish any necessary supplies or consumables • Describe the levels of hygiene required by the workplace and why it is important to maintain them during your work 	
5.	To Carry out Reporting and Documentation	<ul style="list-style-type: none"> • Select and ensure that all the equipment and machines are operational 	<ul style="list-style-type: none"> • Open Mixing mills

	<p>Theory Duration (hh:mm) 44:00</p> <p>Practical Duration (hh:mm) 174:00</p> <p>Corresponding NOS Code RSC/N5002</p>	<ul style="list-style-type: none"> • Explain rubber compound processing with different types of Mixers • Evaluate and ensure that all tools required for the mixer area operations are readily available • Categorize the different type of Mixers and their operation • Organize regular checks for machines for accuracy and readiness for operation • settings on automated mixer are set by technical associates • Arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation • Assess and ensure that all services such as steam, water, electricity, etc. are available at all times • Comply with the maintenance schedule and ensure that maintenance programme of the mixer are carried out on regular basis • Demonstrate the proper handling of rubbers & chemicals • Construct Material Safety Data Sheets (MSDS) for all the materials used • Demonstrate how to manage first aid, general medication, hospitalization in case of an accident, etc. of the team members • Demonstrate appropriate responses to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster • Evaluate and ensure no safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area are tampered • Assess and avoid spillage and in case spillage occurs, follow the prescribed safety measures provided by the department • State the importance of effective time and human resource management • Mange and train the manpower for handling emergency situations • Devise methods to ensure availability of slab dip or dip slurry for cooling and using as separating 	<ul style="list-style-type: none"> • Compounding mixers • Drying Oven • Carbon black pellets • Internal mixer • Bunkers for keeping different chemical ingredients • Oil bunkers • Pellets for keeping compounded Rubber • Knife • Weighing balance • Pyrometer • Stopwatch • Polythene sheets for covering rubber compound • Gloves • Apron • Safety shoes • Face mask • Trollies for compound transport
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		<p>agents for mixed compound slabs/sheets</p> <ul style="list-style-type: none"> • Devise methods to ensure that the manpower required for achieving the compound mix schedule are available • Collect and get the pigments /chemicals filled in the appropriate bins to facilitate weighing • State the importance of proper weighing of rubber and other ingredients • Illustrate the effect of wrong weighing of ingredients • List and check the check the material coming from raw material stores and confirm that it is as per the scheduler • List the specifications of materials and its importance in the compound preparation • Use of Computer/application software • Assemble and batch off mill gauge and proper cooling water flow • Demonstrate the method of roller die set up • Identify and ensure that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes) and the given environment guidelines and regulations • Construct MSDS (Material Safety Data Sheet) for all incoming raw materials • Assess and resolve issues (if any) among the team members before the commencement of mixing operations • Arrange for the substitute if a team member is absent due to any injury, accident, leave etc. • State the relevance of addressing issues with superiors / HR that is beyond his control • Assess and delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame • Inspect and ensure polymer bales or pre-cut are kept near the put up conveyors for final weighing and 	
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		<p>charging into mixer when the mixing operation commences</p> <ul style="list-style-type: none"> • Devise methods to ensure functioning of carbon black manual or auto feeders, process oil manual or auto feeding units • Evaluate and ensure the receiving of correct material in mixing area i.e. the material has lab release ID tags or colour code marking • Inspect the material carefully to detect torn bag, contaminated material etc. and report to the stores supervisor before starting the mixing operation and arrange for replacement of affected material, if required • Illustrate the effect of improper processing on properties of rubber compound & product • Identify defective equipment and take action as per SOP • List the implications (impact on internal/external customers) of defective products, materials or components • Test and set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement • Demonstrate the process of proper compound mixing and ingredient dispersion • Evaluate and ensure that operator doesn't fiddle with settings and follows only authorized settings if settings on automated mixer are set by technical associates 	
6.	<p>To Carry out Quality Checks</p> <p>Theory Duration (hh:mm) 44:00</p> <p>Practical Duration (hh:mm) 174:00</p> <p>Corresponding NOS Code</p>	<ul style="list-style-type: none"> • List and check the check the material coming from raw material stores and confirm that it is as per the scheduler • List the specifications of materials and its importance in the compound preparation • Use of Computer/application software • Assemble and batch off mill gauge and proper cooling water flow • Demonstrate the method of roller die set up 	<ul style="list-style-type: none"> • Open Mixing mills • Compounding mixers • Drying Oven • Carbon black pellets • Internal mixer • Bunkers for keeping different chemical ingredients

	RSC/N5003	<ul style="list-style-type: none"> • Identify and ensure that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes) and the given environment guidelines and regulations • Construct MSDS (Material Safety Data Sheet) for all incoming raw materials • Assess and resolve issues (if any) among the team members before the commencement of mixing operations • Arrange for the substitute if a team member is absent due to any injury, accident, leave etc. • State the relevance of addressing issues with superiors / HR that is beyond his control • Assess and delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame • Inspect and ensure polymer bales or pre-cut are kept near the put up conveyors for final weighing and charging into mixer when the mixing operation commences • Devise methods to ensure functioning of carbon black manual or auto feeders, process oil manual or auto feeding units • Evaluate and ensure the receiving of correct material in mixing area i.e. the material has lab release ID tags or colour code marking • Inspect the material carefully to detect torn bag, contaminated material etc. and report to the stores supervisor before starting the mixing operation and arrange for replacement of affected material, if required • Illustrate the effect of improper processing on properties of rubber compound & product • Identify defective equipment and take action as per SOP • List the implications (impact on internal/external customers) of defective products, materials or components 	<ul style="list-style-type: none"> • Oil bunkers • Pellets for keeping compounded Rubber • Knife • Weighing balance • Pyrometer • Stopwatch • Polythene sheets for covering rubber compound • Gloves • Apron • Safety shoes • Face mask • Trollies for compound transport
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		<ul style="list-style-type: none"> • Test and set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement • Demonstrate the process of proper compound mixing and ingredient dispersion • Evaluate and ensure that operator doesn't fiddle with settings and follows only authorized settings if settings on automated mixer are set by technical associates • Select and ensure that all the equipment and machines are operational • Explain rubber compound processing with different types of Mixers • Evaluate and ensure that all tools required for the mixer area operations are readily available • Categorize the different type of Mixers and their operation • Organize regular checks for machines for accuracy and readiness for operation • settings on automated mixer are set by technical associates • Arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation • Assess and ensure that all services such as steam, water, electricity, etc. are available at all times • Comply with the maintenance schedule and ensure that maintenance programme of the mixer are carried out on regular basis • Demonstrate the proper handling of rubbers & chemicals • Construct Material Safety Data Sheets (MSDS) for all the materials used • Demonstrate how to manage first aid, general medication, hospitalization in case of an accident, etc. of the team members • Demonstrate appropriate responses to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster 	
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		<ul style="list-style-type: none"> Evaluate and ensure no safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area are tampered Assess and avoid spillage and in case spillage occurs, follow the prescribed safety measures provided by the department State the importance of effective time and human resource management Manage and train the manpower for handling emergency situations Devise methods to ensure availability of slab dip or dip slurry for cooling and using as separating agents for mixed compound slabs/sheets Devise methods to ensure that the manpower required for achieving the compound mix schedule is available Collect and get the pigments /chemicals filled in the appropriate bins to facilitate weighing State the importance of proper weighing of rubber and other ingredients Illustrate the effect of wrong weighing of ingredients 	
7.	<p>To Carry out Problem Identification and Escalation</p> <p>Theory Duration (hh:mm) 43:00</p> <p>Practical Duration (hh:mm) 174:00</p> <p>Corresponding NOS Code RSC/N5004</p>	<ul style="list-style-type: none"> Inspect and ensure polymer bales or pre-cut are kept near the put up conveyors for final weighing and charging into the mixer when the mixing operation commences Devise methods to ensure the functioning of carbon black manual or auto feeders, process oil manual or auto feeding units Devise methods to ensure availability of slab dip or dip slurry for cooling and using as separating agents for mixed compound slabs/sheets Devise methods to ensure that the manpower required for achieving the compound mix schedule is available Construct Material Safety Data Sheets (MSDS) for all the materials used Demonstrate how to manage a first aid, general medication, 	<ul style="list-style-type: none"> Open Mixing mills Compounding mixers Drying Oven Carbon black pellets Internal mixer Bunkers for keeping different chemical ingredients Oil bunkers Pellets for keeping compounded Rubber Knife Weighing balance

		<p>hospitalization in case of an accident, etc. of the team members</p> <ul style="list-style-type: none"> • Demonstrate appropriate responses to emergencies e.g. Power failures, fire and system failures and manual intervention to avoid disaster • Evaluate and ensure no safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area are tampered • Assess and avoid spillage and in case of spillage occurs, follow the prescribed safety measures provided by the department • Select and ensure that all the equipment and machines are operational • Explain rubber compound processing with different types of Mixers • Evaluate and ensure that all tools required for the mixer area operations are readily available • Categorize the different type of Mixers and their operation • Organize regular checks for machines for accuracy and readiness for operation • Illustrate the effect of improper processing on properties of rubber compound & product • Identify defective equipment and take action as per SOP • List the implications (impact on internal/external customers) of defective products, materials or components • Test and set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement • Demonstrate the process of proper compound mixing and ingredient dispersion • Evaluate and ensure that operator doesn't fiddle with settings and follows only authorized settings if settings on the automated mixer are set by technical associates • Arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation 	<ul style="list-style-type: none"> • Pyrometer • Stopwatch • Polythene sheets for covering rubber compound • Gloves • Apron • Safety shoes • Face mask • Trolleys for compound transport
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		<ul style="list-style-type: none"> • Assess and ensure that all services such as steam, water, electricity, etc. are available at all times • Comply with the maintenance schedule and ensure that maintenance programme of the mixer is carried out on a regular basis • Use of Computer/application software • Assemble and batch off mill gauge and proper cooling water flow • Demonstrate the method of roller die set up • List and check the check the material coming from raw material stores and confirm that it is as per the scheduler • List the specifications of materials and its importance in the compound preparation • Evaluate and ensure the receiving of correct material in the mixing area i.e. the material has lab release ID tags or color code marking • Inspect the material carefully to detect torn bag, contaminated material etc. and report to the store supervisor before starting the mixing operation and arrange for replacement of affected material, if required • Collect and get the pigments /chemicals filled in the appropriate bins to facilitate weighing • State the importance of proper weighing of rubber and other ingredients • Illustrate the effect of wrong weighing of ingredients • Arrange for the substitute if a team member is absent due to any injury, accident, leave etc. • State the relevance of addressing issues with superiors / HR that is beyond his control • Assess and delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame • State the importance of effective time and human resource management 	
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		<ul style="list-style-type: none"> • Arrange and train the manpower for handling emergency situations • Construct MSDS (Material Safety Data Sheet) for all incoming raw materials • Assess and resolve issues (if any) among the team members before the commencement of mixing operations • Identify and ensure that team members adhere to all health, safety norms (such as wearing protective gloves, masks, goggles and safety shoes) and the given environment guidelines and regulations • Demonstrate the proper handling of rubbers & chemicals 	
	<p>Total Duration</p> <p>Theory Duration 302:00</p> <p>Practical Duration 1210:00</p> <p>Total 1512:00</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none"> • White Board, Markers and Eraser. • Projector with screen. • Flip chart with markers. • Faculty's PC/Laptop with the latest configuration and internet connection. • Supporting software/applications for projecting audio, video, recording. • Presentation tools to support learning activities: <ul style="list-style-type: none"> ○ Intranet. ○ Email. ○ IMs. ○ Learning management system e.g. Moodle, Blackboard to enable blended learning. • Microphone/voice system for lecture and class activities. • Handy Camera. • Stationery kit – Staples, Glue, Chart Paper, Sketch Pens, Paint Box, Scale, A4 Sheets. • For IT Lab sessions: Computer Lab with 1:1 PC: trainee ratio and having internet connection, MS Office / Open Office, Browser, Chat Tools. • Assessment and Test Tools for day to day online Tests and Assessments. • For team discussions: Adequate seating arrangement in full/half circle format for one or more teams as per planned team composition. • Reading Resources: Access to relevant sample documents and learning forums to enable self-study before and after each training session. 	

Grand Total Course Duration: 1512 Hours, 0 minutes

Assessment Criteria

Job Role	Mixing Supervisor
Qualification Pack	RSC/Q0111, V1.0
Sector Skill Council	Rubber Skill Council of India

S. No.	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 these 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 Outcomes	Assessment Criteria for Outcomes	Total Marks	Out Of (80+20)	Theory	Skills Practical
1. RSC/N0130 Supervise the preparatory activities for mixing	PC1. Ensure that all the equipment and machines are operational	100	1	0	1
	PC2. Ensure all tools required for the mixer area operations are readily available		1	0	1
	PC3. Ensure regular checks are conducted for machines for accuracy and readiness for operation		2	2	0
	PC4. Identify defective equipment and take action as per SOP		15	8	7
	PC5. Set pressure and other parameters; set mixing time and follow the sequence to make available different compound mix as per the requirement		15	8	7
	PC6. In case settings on automated mixer are set by technical associates, ensure operator doesn't fiddle with settings and follows only authorized settings		2	2	0
	PC7. Arrange to provide tools like mill knives, butcher knives masks, gloves, rags etc. for workers before starting the mixing operation		2	0	2

PC8. Ensure that all services such as steam, water, electricity, etc. are available at all times	2	2	0
PC9. Comply with the maintenance schedule and ensure that maintenance programme of the mixer are carried out on regular basis	2	2	0
PC10. Batch off mill gauge and proper cooling water flow.	2	0	2
PC11. Roller die set up.	2	0	2
PC12. Check the material coming from raw material stores and confirm that it is as per the scheduler	2	2	0
PC13. Ensure the receiving of correct material in mixing area i.e. the material has lab release ID tags or colour code marking	3	3	0
PC14. Inspect the material carefully to detect torn bag, contaminated material etc. and report the same to the stores supervisor and his foreman before starting the mixing operation and arrange for replacement of affected material in case required	8	3	5
PC4. Get the pigments /chemicals filled in the appropriate bins for facilitating weighing	2	2	0
PC15. Ensure polymer bales or precut and are kept near the put up conveyors for final weighing and charging into mixer when the mixing operation commences	2	0	2
PC16. Ensure functioning of carbon black manual or auto feeders	7	4	3
PC17. Ensure functioning of process oil manual or auto feeding units	7	4	3
PC18. Ensure availability of slab dip or dip slurry for cooling and using as separating agents for mixed compound slabs/sheets	2	2	0
PC19. Ensure that the manpower required for achieving the compound mix schedule is available.	2	2	0
PC20. Arrange for the substitute in case of absenteeism of any team member due to any injury, accident, leave etc.	1	1	0

	PC21. Delegate the task and inform the team members well in time about the mixing schedule to be met in the given time frame		1	1	0
	PC22. Train the manpower for handling emergency situations		2	2	0
	PC23. Resolving issues (if any) among the team members before the commencement of mixing operations		2	2	0
	PC24. Ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes).		4	2	2
	PC25. Manage first aid, general medication etc. of the team members		1	1	0
	PC26. Arrange for hospitalization in case of accident		1	1	0
	PC27. Ensure no tampering of safety ropes/switches/extinguishers/alarms fitted on the machines or mixer area		2	1	1
	PC28. Avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department		4	2	2
	PC29. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.		1	1	0
			100	60	40
2. RSC/N0131 Supervise Mixing Operations	PC1. Ensure that the operator follows the sequence of addition of ingredients and mixing instructions as per the authorized mixing instructions issued by technical (manually/through automated operations)	100	12	4	8
	PC2. Ensure that the operator follow the sequence to make available different compound mix as per the requirement		12	4	8
	PC3. Ensure mixers temperature/pressure/volume restrictions are respected and followed		10	6	4
	PC4. Ensure all laid out procedures/guidelines are in compliance		10	3	7
	PC5. Keep a check on cycle time (between one batch to another) to attain efficiency.		6	3	3

	PC6. Ensure no bye passing/ short cutting of sequence in compound preparation		9	3	6
	PC7. Ensure adequate cooling of mixed compound before laying down on skids/pallets/ gondolas		7	3	4
	PC8. Avoid contamination while carrying out the mixing operation		9	4	5
	PC9. Ensure proper application of slab dip /dip slurry for facilitating the stacking of mixed compounds and its easy usage for next processing		8	2	6
	PC10. Ensure compliance of compounds dispositioned for work away through mixers respecting the directive		3	0	3
	PC11. Ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes).		6	2	4
	PC12. Arrange for hospitalization in case of accident		1	1	0
	PC13. Manage first aid, general medication etc. of the team members		1	1	0
	PC14. Avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department		4	2	2
	PC15. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.		2	2	0
			100	40	60
3. RSC/N0132 Conduct Post-Mixing Supervisory Operations	PC1. Ensure identification and traceability by batch marking/coding for the compound as per the instructions laid down by the company.	100	11	6	5
	PC2. Send sample of the prepared mix in the specified sample size and method as directed by the company		4	2	2
	PC3. Get the mixed compound stored on designated skids/ gondolas/pallets with proper ID tags and hold until release tags in the allotted storage area.		5	2	3
	PC4. Ensure the storage is done to facilitate the FIFO		4	2	2

PC5. Ensure compliance of FIFO by the user department	7	3	4
PC6. Get the mixer properly clean and ready after completion of mixing operation	6	2	4
PC7. On continuous operations, ensure mandatory cleaning procedures, as per instructions from Technical, between compound changes and at shift ends are complied with	6	2	4
PC8. Manage to provide maintenance time for any repair and scheduled long maintenance of mixer/s	2	2	0
PC9. Arrange to place DO NOT USE tag on compound having any defects; either hold it for any other use, reschedule its preparation,	6	2	4
PC10. Arrange to reschedule the mixing of the affected compound urgently to keep the plant process on for smooth running	2	2	0
PC11. Ensure the storage of master batch in mixing area only; release only the final batch for further processing.	2	2	0
PC12. Send the defective/rejected material to hold area and keep the storage space free for OK material	6	4	2
PC13. Provide mixers on scheduled dates for Mixer inspections/ rotor clearance checks	6	4	2
PC14. Ensure all the mixing details are properly recorded in the forms/formats/log books/computers	8	2	6
PC15. Update the production sheet with the details of prepared material and record down time with details on reasons, time from to end and mention action taken to solve the down time	2	2	0
PC16. Paper /computer documents must be complete and traceable in all respect	2	2	0
PC17. Records of the team members for work done, availability in shift, working hours etc.	3	3	0
PC18. Maintain inventory of mixed compounds	3	3	0

	PC19. Ensure the held up compound is disposed of by technical.		3	3	0
	PC20. Ensure the action on disposition of off spec material is carried out promptly		1	1	0
	PC21. Ensure that team members adhere to all safety norms (such as wearing protective gloves, masks, goggles and safety shoes).		1	1	0
	PC22. Arrange for hospitalization in case of accident		1	1	0
	PC23. Manage first aid, general medication etc. of the team members		1	1	0
	PC24. Avoid spillage and in case of spillage occur, follow safety measures as laid down by safety department		6	4	2
	PC25. Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards		2	2	0
			100	60	40
4. RSC/N5001 To Carry Out Housekeeping	PC1. Inspect the area while taking into account various surfaces	100	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		2	2	0
	PC7. Display the appropriate signage for the work being conducted		3	3	0
	PC8. Ensure that there is adequate ventilation for the work being carried out		3	3	0

	PC9. Wear the personal protective equipment required for the cleaning method and materials being used		3	3	0
	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		3	3	0
	PC13. Report to the appropriate person any difficulties in carrying out your work		3	3	0
	PC14. Identify and report to the appropriate person any additional cleaning required that is outside one's responsibility or skill		3	3	0
	PC15. Ensure that there is no oily substance on the floor to avoid slippage		9	3	6
	PC16. Ensure that no scrap material is lying around		9	3	6
	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		3	3	0
	PC19. Ensure that, on completion of the work, the area is left clean and dry and meets requirements		8	6	2
	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		9	3	6
	PC22. Dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly		9	3	6
	PC23. Maintain schedules and records for housekeeping duty		3	3	0
	PC24. Replenish any necessary supplies or consumables		3	3	0
			100	70	30

5. RSC/N5002 To Carry Out Reporting and Documentation	PC1. Report data/problems/incidents as applicable in a timely manner	100	12	8	4
	PC2. Report to the appropriate authority as laid down by the company		12	8	4
	PC3. Follow reporting procedures as prescribed by the company		12	8	4
	PC4. Identify documentation to be completed relating to one's role		10	4	6
	PC5. Record details accurately in an appropriate format		16	6	10
	PC6. Complete all documentation within stipulated time according to company procedure		14	4	10
	PC7. Ensure that the final document meets with the requirements of the persons who requested it or make any amendments accordingly		6	4	2
	PC8. Make sure documents are available to all appropriate authorities to inspect		6	4	2
	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 ranges of checks are regularly and consistently performed	100	24	10	14
	PC2. Use appropriate measuring instruments, equipment, tools, accessories etc., as required		24	10	14
	PC3. Identify non-conformities to quality assurance standards		6	4	2
	PC4. Identify potential causes of non-conformities to quality assurance standards		5	3	2
	PC5. Identify impact on final product due to non-conformance to company standards		5	3	2
	PC6. Evaluating the need for action to ensure that problems do not recur		6	4	2
	PC7. Suggest corrective action to address problem		5	3	2

	PC8. Review effectiveness of corrective action		5	3	2
	PC9. Interpret the results of the quality check correctly		4	4	0
	PC10. Take up results of the findings with QC in charge/appropriate authority.		3	3	0
	PC11. Take up the results of the findings within stipulated time		3	3	0
	PC12. Record of results of action taken		3	3	0
	PC13. Record adjustments not covered by established procedures for future reference		3	3	0
	PC14. Review effectiveness of action taken		2	2	0
	PC15. Follow reporting procedures where the cause of defect cannot be identified		2	2	0
			100	60	40
7. RSC/N5004 To Carry Out Problem Identification and Escalation Problem	PC1. Identify defects/indicators of problems	100	7	4	3
	PC2. Identify any wrong practices that may lead to problems		6	3	3
	PC3. Identify practices that may impact the final product quality		6	3	3
	PC4. Identify if the problem has occurred before		5	3	2
	PC5. Identify other operations that might be impacted by the problem		6	4	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)		8	5	3
	PC8. Consider possible reasons for identification of problems		8	5	3
	PC9. Consider applicable corrections and formulate corrective action		3	3	0
	PC10. Formulate action in a timely manner		3	3	0
	PC11. Communicate problem/remedial action to appropriate parties		7	5	2
	PC12. Take corrective action in a timely manner		2	2	0

	PC13. Take corrective action for problems identified according to the company procedures		2	2	0
	PC14. Report/document problem and corrective action in an appropriate manner		8	5	3
	PC15. Monitor corrective action		2	2	0
	PC16. Evaluate implementation of corrective action taken to determine if the problem has been resolved		2	2	0
	PC17. Ensure that corrective action selected is viable and practical		2	2	0
	PC18. Ensure that correct solution is identified to an identified problem		2	2	0
	PC19. Take corrective action for problems identified according to the company procedures		1	1	0
	PC20. Ensure that no delays are caused as a result of failure to take necessary action		1	1	0
	PC21. Escalate problem as per laid down escalation matrix		4	3	1
	PC22. Escalate the problem within stipulated time		4	3	1
	PC23. Escalate the problem in an appropriate manner		3	2	1
	PC24. Ensure that no delays are caused as a result of failure to escalate problems		3	2	1
		Total	100	70	30
	Grand Total		700	420	280
	Percentage Weightage:			84	224
	Minimum Pass % to qualify (aggregate):			154	

Annexure I: Tools and Equipment for Basic Training (Block I)

Sector: Rubber

Block I Code with Version No. or Course Code: RSC/Q0111, V1.0

Block I & II QP Name or Course Name: Mixing Supervisor

Block I NSQF Level: 5

S. No.	Equipment Name	Minimum number of Equipment required (per batch of 30 trainees)	Unit Type	Is this a mandatory Equipment to be available at the Training Center (Yes/No)	Dimension/Specification / Description of the Equipment/ ANY OTHER REMARK
1	Comfortable adequate lighting, controlled temperature, and acoustics for training and learning	30	Nos	Yes	1:1
2	Presentation Tools to support learning activities: Intranet, Email, IMs, Learning management system e.g. Moodle, Blackboard to enable blended learning	30	Nos	Yes	1:1
3	For IT Lab sessions: Computer Lab with 1:1 PC: trainee ratio and having an internet connection, commonly used search engines, MS Office / Open Office, Browser, HTML, etc.	30	Nos	Yes	1:1
4	Assessment and Test Tools for day to day online Tests and Assessments	30	Nos	Yes	1:1
5	For team discussions: Adequate seating arrangement in full/half circle format for one or more teams as per	30	Nos	Yes	1:1

	planned team composition				
6	Reading Resources: Access to relevant sample documents and learning forums to enable self-study before and after each training session	1 - library or 30 - e-library	Nos	Yes	1:1
7	White Board	1	Nos	Yes	
8	Markers	3	Nos	Yes	Different Colours
9	Eraser (Whiteboard duster)	2	Nos	Yes	
10	Projector with screen	1	Nos	Yes	
11	Flip chart	1	Nos	Yes	
12	Faculty's PC/Laptop with the latest configuration and internet connection	2	Nos	Yes	1 - for use another as back up
13	Supporting software/applications for projecting audio, video, recording	6	Nos	Yes	1:5
14	Microphone/voice system for lecture and class activities	2	Nos	Yes	1 - for use another as back up
15	Handy Camera	2	Nos	Yes	1 - for use another as back up
16	Stationery kit – Staples, Glue, Chart Paper, Sketch Pens, Paint Box, Scale, A4 Sheets	3	Nos	Yes	1:10

Annexure II: Tools and Equipment for Hands-On at Employer Location (Block II)

Sector: Rubber

Block II QP Code with Version No. or Course Code: RSC/Q0111, V1.0

Block I & II QP Name or Course Name: Mixing Supervisor

Block I NSQF Level: 5

S. No.	Equipment Name	Minimum number of Equipment required (per batch of 30 trainees)	Unit Type	Is this a mandatory Equipment to be available at the Training Center (Yes/No)	Dimension/Specification / Description of the Equipment/ ANY OTHER REMARK
1	Open Mixing mills	As per batch requirement	Nos	Yes	As per batch requirement
2	Compounding mixers	As per batch requirement	Nos	Yes	As per batch requirement
3	Drying Oven	As per batch requirement	Nos	Yes	As per batch requirement
4	Carbon black pellets	As per batch requirement	Nos	Yes	As per batch requirement
5	Internal mixer	As per batch requirement	Nos	Yes	As per batch requirement
6	Bunkers for keeping different chemical ingredients	As per batch requirement	Nos	Yes	As per batch requirement
7	Oil bunkers	As per batch requirement	Nos	Yes	As per batch requirement
8	Pellets for keeping compounded Rubber	As per batch requirement	Nos	Yes	As per batch requirement
9	Knife	As per batch requirement	Nos	Yes	As per batch requirement
10	Weighing balance	As per batch requirement	Nos	Yes	As per batch requirement
11	Pyrometer	As per batch requirement	Nos	Yes	As per batch requirement
12	Stopwatch	As per batch requirement	Nos	Yes	As per batch requirement

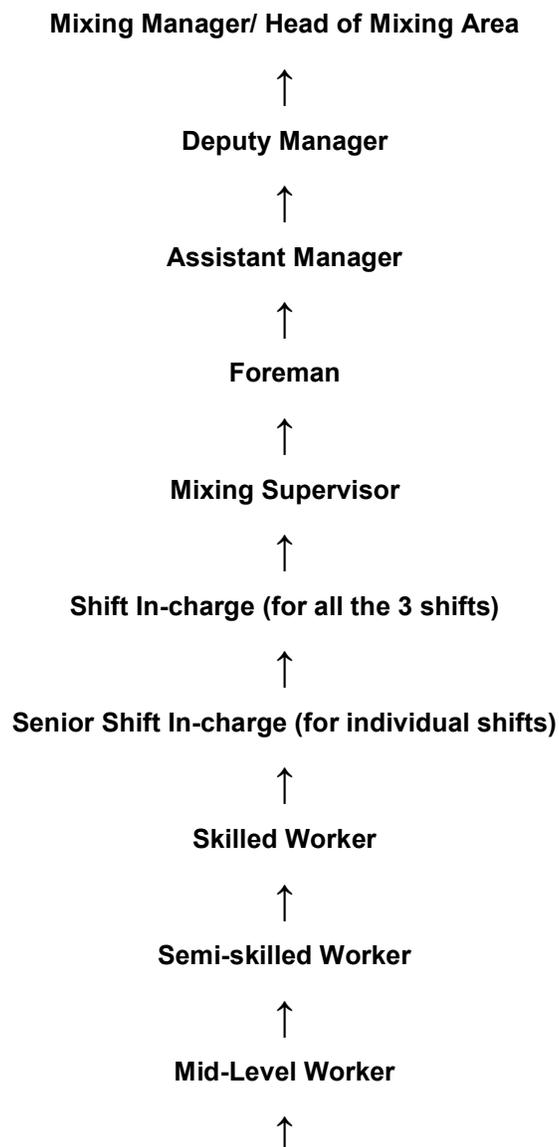
13	Polythene sheets for covering rubber compound	As per batch requirement	Nos	Yes	As per batch requirement
14	Gloves	As per batch requirement	Nos	Yes	As per batch requirement
15	Apron	As per batch requirement	Nos	Yes	As per batch requirement
16	Safety shoes	As per batch requirement	Nos	Yes	As per batch requirement
17	Face mask	As per batch requirement	Nos	Yes	As per batch requirement
18	Trollies for compound transport	As per batch requirement	Nos	Yes	As per batch requirement
19	Industrial truck	As per batch requirement	Nos	Yes	As per batch requirement
20	Turn table	As per batch requirement	Nos	Yes	As per batch requirement
21	Pallets	As per batch requirement	Nos	Yes	As per batch requirement
22	Cartons	As per batch requirement	Nos	Yes	As per batch requirement
23	Pallet Rack	As per batch requirement	Nos	Yes	As per batch requirement
24	Crayon for identification	As per batch requirement	Nos	Yes	As per batch requirement
25	Mixing mills	As per batch requirement	Nos	Yes	As per batch requirement
26	Drying conveyor	As per batch requirement	Nos	Yes	As per batch requirement
27	Carbon black pellet	As per batch requirement	Nos	Yes	As per batch requirement
28	White Board	As per batch requirement	Nos	Yes	As per batch requirement
29	Marker or Blackboard + Chalk	As per batch requirement	Nos	Yes	As per batch requirement
30	Duster	As per batch requirement	Nos	Yes	As per batch requirement
31	Laptop/PC + Projector or Flipcharts	As per batch requirement	Nos	Yes	As per batch requirement
32	Participant Handbook / Copies of Handout	As per batch requirement	Nos	Yes	As per batch requirement

33	Different Cleaning Equipment	As per batch requirement	Nos	Yes	As per batch requirement
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Further Learning

Learning Pathways

After completion of apprenticeship, training the candidates will have wide career choices available with them in the various sub-sectors of Rubber Industry. As a fresher, a candidate typically joins at the mid-level profile. Thereafter, the individual has the option to acquire more skills horizontally as well as vertically under the broad occupation of Rubber industry.



Unskilled Worker (works partially on machine and partially on rubber)

Employment Opportunities

Apart from above-mentioned avenues, the apprentice can always aspire to be employed in one of the following:

1. **Assistant/Deputy Manager:** The apprentice may be employed with the biggest players of the Rubber industry. The individual has to coordinate with interdepartmental functions like purchase, quality, and maintenance. He or she needs to ensure that quality standards of the mixed compounds are met by the mixing department. Added to this, he/ she have to ensure that material movement/ flow, storage, plant layout, and upkeep are maintained.
2. **Sr. Engineer Chemist (Rubber Mixing):** The apprentice will be encouraged to work on rubber processing and troubleshooting issues related to it. Added to it, the individual will also have to be involved in various rubber testing and mixing procedures to determine that the equipment in use or the process is functioning efficiently.
3. **Foreman:** The apprentice will be encouraged to work with various rubber mixing machines and coordinate with different departments and worker groups.