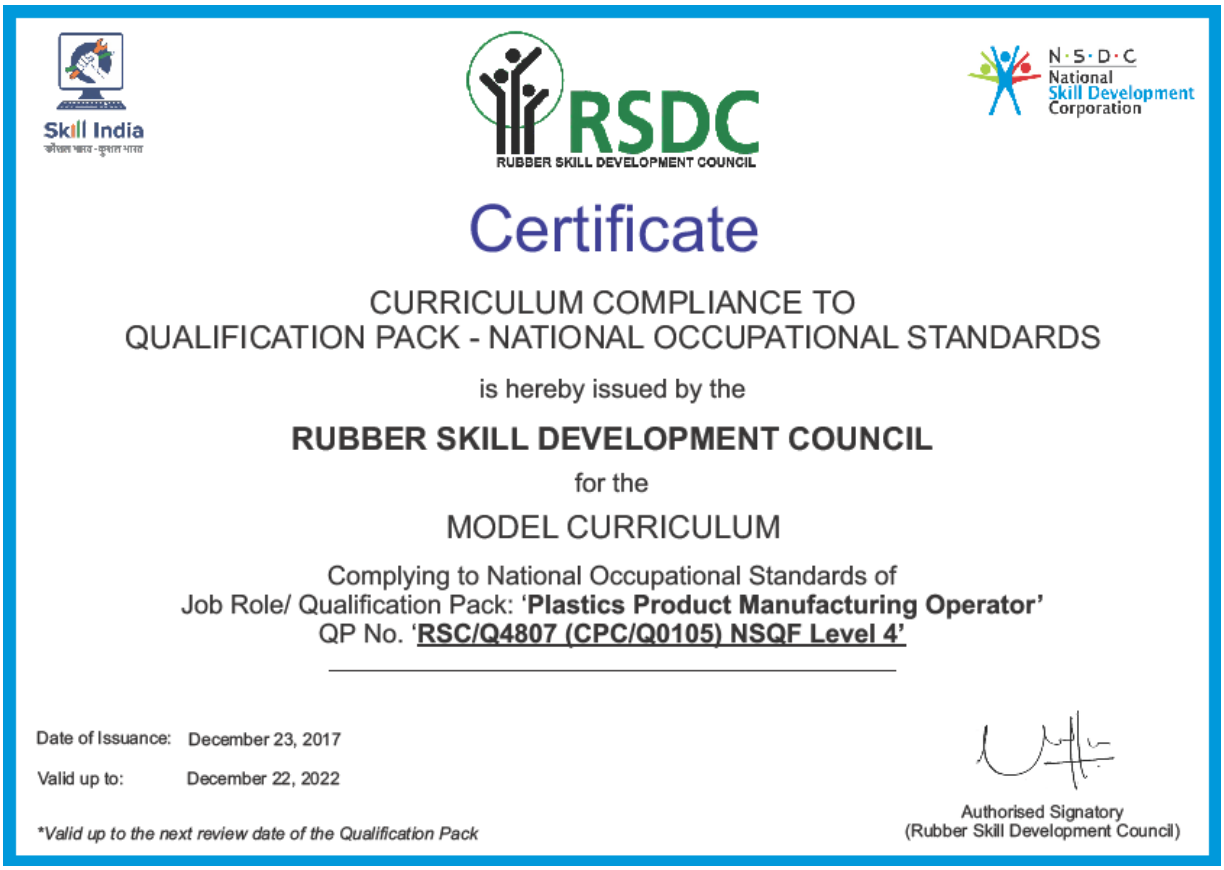
Model Curriculum

Plastics Product Manufacturing Operator

SECTOR: Rubber
SUB-SECTOR: Plastics Processing
OCCUPATION: Plastics Product manufacturing
REF ID: RSC/Q4807 (CPC/Q0105), V1.0
NSQF LEVEL: 4



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RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

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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: '**Plastics Product Manufacturing Operator**'
QP No. '**RSC/Q4807 (CPC/Q0105) NSQF Level 4**'

Date of Issuance: December 23, 2017

Valid up to: December 22, 2022

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

Authorised Signatory
(Rubber Skill Development Council)

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Plastics Product Manufacturing Operator

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Plastics Product Manufacturing Operator", in the "Rubber" Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	**Plastics Product Manufacturing Operator**		
Qualification Pack Name & Reference ID	RSC/Q4807 (CPC/Q0105), v1.0		
Version No.	1.0	**Version Update Date**	29/05/2019
Pre-requisites to Training	VIIIth Standard		
Training Outcomes	**After completing this programme, participants will be able to:** • Describe the various methods used to process plastic, advantages and disadvantages of each method and their suitability for specific applications. • Describe the different types of plastics materials being used in the industry, their basic knowhow and properties. • Perform the Injection moulding independently and safely. • Demonstrate the operations of the extrusion machine independently and safely. • Demonstrate the operations of the blow moulding machine independently and safely. • Comply with the health, safety and security procedures stated by the organisation. • Apply entrepreneurship skill in plastic product manufacturing. • Create plan and budgeting for plastic product manufacturing.		

This course encompasses 7 out of 7 NOS (National Occupational Standards) of "Plastics Product Manufacturing Operator" Qualification Pack issued by "Rubber Skill Development Council".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction** **Theory Duration** (hh:mm) 16:00 **Practical Duration** (hh:mm) 8:00 **Corresponding NOS Code** Bridge Module	• Explain the developmental history of plastics. • Describe current industrial scenario of plastics and prospects. • Identify types of plastic. • Recognise major industrial associations. • Identify equipment used for plastic processing. • Describe the roles and responsibilities of a "Plastics Product Manufacturing Operator".	White board, marker duster, laptop/PC, projector, flipcharts, samples – Plastic injection moulded products, plastic extruded products, plastic blow moulded products
2	**Basics of plastics processing** **Theory Duration** (hh:mm) 48:00 **Practical Duration** (hh:mm) 48:00 **Corresponding NOS Code** RSC/N4104 (CPC/N0414)	• Describe the use of all major plastics processing machineries. • Explain the definition and terminology related to plastic processing. • Perform the primary processing methods as per procedure. • Perform the secondary processing methods as per procedure. • Describe the types of conversion techniques. • Identify the material to be processed for producing various plastic products. • Interpret the product design, configuration and tolerance. • Determine the process limitations. • Describe necessary steps during process for producing quality products.	White board, marker duster, laptop/PC, projector, flip charts
3	**Basics of plastic material** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 48:00 **Corresponding NOS Code** RSC/N4802 (CPC/N0114)	• Identify the type of raw material being used in the industry. • Describe the properties of different plastic raw material. • Determine the melting temperature and processing temperature for plastic raw material. • Identify the processing characteristics of the plastics material being used. • Determine the requisite additives to blend with plastics material. • Clean the area around the machine for any oil, grease, water etc.	White board, marker duster, laptop/PC, projector, different samples of plastic raw material, different samples of finished products of same plastic

Sr. No.	Module	Key Learning Outcomes	Equipment Required
4	**Prepare injection moulding machine** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4807 (CPC/N0115)	• Determine the work schedule for injection moulding production. • Determine the information on the job card. • Determine the availability of data sheet, manual and work instructions required for the job. • Examine the power supply, hydraulic oil level, water connections. • Determine the requirement of the tools, materials and ancillary equipment's for the work. • Perform the setup of the equipment and machineries for production. • Determine the availability and readiness of ancillary equipment's like chiller, mould temperature controller, hopper loader, cooling towers etc. • Perform the trial run to get sample piece before production run. • Perform the injection moulding process with minimum wastage.	White board, marker duster, laptop/PC, projector, steel ruler, weighing balance, hand mould, two plate mould, plastic injection moulding machine, automatic hopper loader, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, air blow gun, cooling tower, hand operated injection moulding machine, semi automatic horizontal / vertical injection moulding machine, fully automatic horizontal injection moulding machine, micro processor based injection moulding machine, cleaning equipment, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box
5	**Carry out Injection moulding** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4807 (CPC/N0115)	• Perform injection moulding operations independently and safely. • Check of injection moulded product visually. • Perform the post injection moulding operations during the cycle time run. • Demonstrate the process of storing the final product in specified area. • Perform the cleaning process of the injection moulding machine and ancillary equipment at regular interval. • Perform preventive maintenance of the machines and ancillary equipment. • Coordinate with maintenance department for resolving breakdown. • Perform the root cause analysis of moulding defects. • Apply the corrective and preventive action for identified injection moulding defects. • Create the report of defects of the moulds that requires superior's	White board, marker duster, laptop/PC, projector, steel ruler, micrometer, vernier caliper, radius gauge, feeler gage, Steel measuring tape, weighing balance, plastic injection moulding machine, automatic hopper loader, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, air blow gun, cooling tower, hand operated injection moulding machine, semi automatic horizontal / vertical injection moulding machine, fully automatic

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		intervention. • Apply quality systems to get better product. • Follow the safety and health guidelines at work place.	horizontal injection moulding machine, micro processor based injection moulding machine, cleaning equipment, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box
6	**Prepare extrusion machine** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4808 (CPC/N0116)	• Determine the production plan for extrusion machine production. • Determine the product related information on the job card. • Determine the availability of data sheet, manual and work instructions required for carrying out the production. • Examine the power supply, hydraulic oil level, water connections of extrusion machine. • Determine the requirement of the tools, materials and ancillary equipment's for the extrusion. • Perform the setup of the equipment and machineries for production. • Determine the availability and readiness of ancillary equipment. • Perform material availability check for extrusion production. • Perform the trial run to get extruded sample after machine set up.	White board, marker duster, laptop/PC, projector, extrusion dies, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, air blow gun, cooling tower, single screw pipe extrusion plant (HDPE) with accessories, twin screw pipe extrusion plant (PVC) with accessories, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box
7	**Perform extrusion machine operations** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4808 (CPC/N0116)	• Perform extrusion operations independently and safely. • Check the final extruded parts visually. • Demonstrate the process of storing the final product in specified area. • Perform the cleaning process of the extrusion machine and other equipment at regular interval. • Work in compliance with specified health and safety standards. • Undertake preventive maintenance of the machines and ancillary equipment. • Coordinate with maintenance department for resolving breakdown maintenance. • Perform the root cause analysis of extrusion defects	White board, marker duster, laptop/PC, projector, weighing balance, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, air blow gun, cooling tower, single screw pipe extrusion plant (HDPE) with accessories, twin screw pipe extrusion plant (PVC) with accessories, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Apply the corrective and preventive action for the identified defects. • Report the defects in the process to the superior whenever required. • Use quality system to get better product. • Apply safety and health guidelines and rules.	
8	**Blow moulding machine operations** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4809 (CPC/N0117)	• Determine the production plan for blow moulding production. • Examine the information on the job card. • Determine the availability of data sheet, manual and work instructions required for the job. • Examine the power supply, hydraulic oil level, water connections. • Determine the requirement of the tools, materials and ancillary equipment's for the work. • Setup the equipment and machineries for production. • Determine the availability and readiness of ancillary equipment's like chiller, mould temperature controller, hopper loader, cooling towers etc. • Perform the trial run to get sample piece before production run. • Perform the blow moulding process with minimum wastage.	White board, marker duster, laptop/PC, projector, blow mould, automatic hopper loader, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, hot air blow gun, cooling tower, hand operated blow moulding machine, semi-automatic blow moulding machine,fully automatic single stage blow moulding machine, full automatic double stage blow moulding machine, injection stretch blow moulding machine, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box
9	**Blow moulding machine operations** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4809 (CPC/N0117)	• Perform blow moulding operations independently and safely. • Check of blow moulded product. • Perform the post blow molding operations during the cycle time run. • Store the final product in specified area. • Clean the blow moulding machine and ancillary equipment at regular interval. • Undertake preventive maintenance of the machines and ancillary equipment. • Coordinate with maintenance department for resolving breakdown. • Perform the root cause analysis of the blow moulding defects. • Apply the corrective and preventive action for identified blow moulding	White board, marker duster, laptop/PC, projector, blow mould, automatic hopper loader, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, hot air blow gun, cooling tower, hand operated blow moulding machine, semi-automatic blow moulding machine,fully automatic single stage blow moulding machine, full automatic double stage blow moulding machine, injection

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		defects. • Report the defects to the superior wherever required • Apply quality systems to get better product. • Apply safety and health guidelines at work place.	stretch blow moulding machine, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box
10	**Health and safety at the workplace** **Theory Duration** (hh:mm) 32:00 **Practical Duration** (hh:mm) 64:00 **Corresponding NOS Code** RSC/N4101 (CPC/N0411)	• Demonstrate safe working practices while dealing with hazards to ensure the safety of self and others. • Use the various appropriate fires extinguishers on different types of fires. • Demonstrate rescue techniques applied during fire hazard. • Apply good housekeeping in order to prevent fire hazards. • Identify activities which can cause potential injury. • Inform the concerned authorities about the potential risks identified. • Perform the sorting process for the tools, fixtures and jigs. • Segregate the waste in hazardous and non-hazardous waste categories • Demonstrate the technique of waste disposal and waste storage as per standard operating procedure. • Determine the proper labeling mechanism of instruments/ boxes/ containers.	White board, marker, duster, laptop/PC, projector, safety goggles, rubber gloves, heat protecting gloves, fire extinguisher, apron, helmet, first aid box
11	**Entrepreneurship in plastics processing** **Theory Duration** (hh:mm) 24:00 **Practical Duration** (hh:mm) 72:00 **Corresponding NOS Code** RSC/N4825 (CPC/N1108)	• Demonstrate planning and budgeting process. • Keep the books of accounts and handle various transactions. • Determine the prices of various inputs and products from the market. • Determine the influence of various quality parameters of products/pellets on the product pricing. • Build cordial relations with various clients for the benefit of industry. • Determine the needs and requirement of the clients. • Create one's own unique selling proposition.	White board, marker, duster, Laptop/PC, projector, flipcharts

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Choose appropriate buyer in a given situation of market parameters. • Identify best ways of attracting market price for one's produce. • Analyze environmental setup relating to industry and business.	
	Total Duration: **Theory Duration 288:00** **Practical Duration 672:00**	**Unique Equipment Required:** White board, marker duster, laptop/PC, projector, weighing balance, hand mould, two plate mould, plastic injection moulding machine, automatic hopper loader, hot air oven, dryer, dehumidifier, mould temperature controller, scrap grinder, crane, air compressor, hot air blow gun, cooling tower, hand operated injection moulding machine, semi automatic horizontal / vertical injection moulding machine, fully automatic horizontal injection moulding machine, micro processor based injection moulding machine, hand operated blow moulding machine, semi-automatic blow moulding machine, fully automatic single stage blow moulding machine, full automatic double stage blow moulding machine, injection stretch blow moulding machine, single screw pipe extrusion plant (HDPE) with accessories, twin screw pipe extrusion plant (PVC) with accessories, safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box.	

Grand Total Course Duration: 960 Hours, 0 Minutes.

*(This syllabus/ curriculum has been approved by **Rubber Skill Development Council)***

Trainer Prerequisites for Job role: "Plastics Product Manufacturing Operator" mapped to Qualification Pack: "RSC/Q4807 (CPC/Q0105), v1.0"

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "RSC/Q4807 (CPC/Q0105) 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- organized and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	**Minimum Educational Qualifications**	Any Graduate preferably in plastic technology.
4a	**Domain Certification**	Certified for Job Role: "Plastics Product Manufacturing Operator" mapped to QP: "RSC/Q4807 (CPC/Q0105)". Minimum accepted score as per SSC guidelines is 80%.
4b	**Platform Certification**	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/ Q2601". Minimum accepted score as per SSC guidelines is 80%.
5	**Experience**	5+ years of relevant work-experience, above supervisor level.

Annexure: Assessment Criteria

Assessment Criteria	
Job Role:	**Plastics Product Manufacturing Operator**
Qualification Pack Code:	**RSC/Q4807 (CPC/Q0105)**
Sector Skill Council:	**Rubber Skill Development Council**

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 this criterion.
5	To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
6	In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
RSC/N4104 (CPC/N0414) Basics of Plastics Processing methods	PC1.Learn the all plastics processing machineries.	60	3	1	2
	PC2.Identify merits and demerits of blow mouldingto over the all others plastic process.		3	1	2
	PC3.Ensure definition and terminology related to plastic processing.		3	1	2
	PC4.Ensure finishing operation including surface treatment of the fabricated product if required as per SOP.		4	1	3
	PC5.Follow the primary processing methods as per company's SOP.		3	1	2
	PC6.Follow the secondary processing methods as per company's SOP.		3	1	2
	PC7.Follow the fundamentals of processing methods.		3	1	2
	PC8.Adhere the type of process to be used depends on a variety of factors, including product shape and size, plastic type, quantity to be produced, quality and accuracy (Tolerances) required, design load performance, cost limitation, and time schedule.		3	1	2
	PC9.Follow the machine operation terminology: as per manual, semiautomatic, fully automatic.		5	1	4
	PC10.Learn the type of conversion techniques: Injection, Blow, Compression, Transfer, Rotational and Other processes.		5	1	4
	PC11.Identify Material to be processed.		5	1	4
	PC12.Ensure the product design / configuration, tolerance.		5	1	4
	PC13.Ensure the process limitations		5	1	4
	PC14.Ensure the quality.		5	1	4
	PC15.Ensure the cost / performance balance.		5	1	4
	Total		**60**	**15**	**45**
RSC/N4802 (CPC/N0110) Basic knowledge about different plastic material	PC1.Discuss about the type of raw material being used in the industry and for work Order required for the process and with the supervisor.	80	3	1	2
	PC2.Refer all material related documents to understand properties of the required work output and able to identify the material.		8	2	6
	PC3.Follow the process requirements for the plastics material in terms of temperature of the heater, rotating speed of the screw, pressure, injection as mentioned in the Work Instruction /SOP/ control diagrams		10	2	8

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC4.Study the melting temperature, processing temperature etc. for plastic raw material		10	2	8
	PC5.Identify the processing characteristics of the plastics material being used for conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document / SOP manual		10	2	8
	PC6.Ensure that the required material is available before starting the process		10	2	8
	PC7.Ensure that the plastics material is blended with requisite additives		9	1	8
	PC8.Ensure that machine / mould / die are cleaned properly and no foreign material is entrapped in parts of machine/ mould/ die.		9	1	8
	PC9. Ensure cleaning of the materials spilled around the machine.		7	1	6
	PC10. Ensure cleaning of the area around the machine for any oil, grease, water etc.		4	1	3
	Total		**80**	**15**	**65**
RSC/N4807 (CPC/N0115) Operate the injection moulding machine and its trouble shooting	PC1.Plan work schedule in concurrence with superior.	**125**	2.5	0.5	2
	PC2. Obtain and check the data on the job card and carry out functions in line with the responsibilities of job role.		2.5	0.5	2
	PC3. Ensure availability of data sheet, manual, work instructions.		3	1	2
	PC4.Ensure power supply, hydraulic oil level, water connections		3	1	2
	PC5. Ensure availability of the tools, materials and ancillary equipment's for the work.		3	1	2
	PC6. Setup the equipment and machineries as per the job requirement.		3	1	2
	PC7. Update and develop knowledge of the products.		3	1	2
	PC8. Plan for Minimum wastage and its safe disposal.		3	1	2
	PC9. Work in conformance to legal requirements, organizational policies and procedures.		5	1	4
	PC10. Ensure that the mould is ready and having no problem in dry run.		5	1	4
	PC11. Check material is available for production. If required arrange for pre drying.		5	1	4

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC12. Check the availability and readiness of ancillary equipment's like chillier, mould temperature controller, hopper loader, Cooling towers etc.		5	1	4
	PC13. Load the material and pigment (if required) in the hopper.		5	1	4
	PC14. Set the parameters of the machine i.e. temperature, pressure, speed etc.		5	1	4
	PC15. Check the temperature on the barrel with respect to set temperature		5	1	4
	PC16. Conduct trial run to get sample piece once machine is set		3	1	2
	PC17. Adjust parameters unless getting final product.		3	1	2
	PC18. Ensure the Visual check of final product.		3	1	2
	PC19. Define accepted products and defective products as per approved plan.		3	1	2
	PC20. Carry out post melding operation during the cycle time run such as. Trimming, apply protective tapes, putting labels on each product for identification.		3	1	2
	PC21. Store the final product in specified area.		3	1	2
	PC22. Clean the machine and equipment's at regular interval.		3	1	2
	PC23. Work in compliance with specified health and safety standards.		3	1	2
	PC24. Keep Preventive maintenance of machines and ancillary equipment's		3	1	2
	PC25. Keep coordination with maintenance department for resolving breakdown maintenance in minimum possible time.		3	1	2
	PC26. Find the Root cause analysis of moulding defects		3	1	2
	PC27. Analysis of data sheets available in department.		3	1	2
	PC28. Take all corrective and preventive action.		3	1	2
	PC29. Report the problems caused by machines to superior, when not resolved by operator.		3	1	2
	PC30. Report defects in the moulds that one do not have the authority to repair.		3	1	2
	PC31. Report major processing defects beyond control of operator.		3	1	2
	PC32. Keep records of machine log book, data sheet of machine parameter.		3	1	2

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC33. Keep the Documents related to incoming and outgoing material.		3	1	2
	PC34. Meet targets and goals for production.		2.5	0.5	2
	PC35. Minimize defects in final product.		2.5	0.5	2
	PC36. Follow quality system to get better product.		2.5	0.5	2
	PC37. Keep work area clean and systematic.		2.5	0.5	2
	PC38. Comply to safety and health guidelines and rules.		2.5	0.5	2
	Total		**125**	**35**	**90**
RSC/N4808 (CPC/N0116) Operate the extrusion machine & its trouble shooting	PC1. Plan work schedule in concurrence with superior.	**135**	2.5	0.5	2
	PC2.Obtain and check the data on the job card and carry out functions in line with the responsibilities of job role.		2.5	0.5	2
	PC3. Ensure availability of data sheet, manual, work instructions.		2.5	0.5	2
	PC4. Check for power supply, oil level in gear box, water connections.		2.5	0.5	2
	PC5. Ensure availability and functioning of the tools, materials and ancillary equipment's l like air compressor, cooling Tower, high speed mixer etc. for the work.		2.5	0.5	2
	PC6. Setup the equipment and machineries as per the job requirement.		2.5	0.5	2
	PC7. Update and develop knowledge of the products to be produced.		2.5	0.5	2
	PC8. Planning for Minimum rejection and its safe reuse/disposal.		2.5	0.5	2
	PC9. Safety aspects of machine operation.		2.5	0.5	2
	PC10. Work in conformance to legal requirements, organizational policies and procedures.		3	1	2
	PC11. Check material is available for production. Compounding / colour blending.		3	1	2
	PC12. Check the availability and readiness of ancillary equipment's like air compressor, hopper loader, dehumidifier, Cooling towers etc.		5	1	4
	PC13. Load the material in the hopper.		5	1	4
	PC14. Set the parameters of the machine i.e. temperatures, speeds etc.		5	1	4

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC15. Check the temperature on the barrel with respect to set temperature.		5	1	4
	PC16. Conduct trial run to get extruded sample once machine is set.		5	1	4
	PC17. Adjust parameters unless getting final product.		5	1	4
	PC18. Ensure the Visual check of final product.		5	1	4
	PC19. Define accepted products and defective products as per approved plan.		5	1	4
	PC20. Do the Corona treatment and printing, if required.		5	1	4
	PC21. Store the final product in specified area.		5	1	4
	PC22. Clean the machine and equipment's at regular interval Work in compliance with specified health and safety standards.		4.5	0.5	4
	PC23. Preventive maintenance of machines and ancillary equipment's.		4.5	0.5	4
	PC24. Keep Coordination with maintenance department for resolving breakdown maintenance in minimum possible time.		4.5	0.5	4
	PC25. Find the Root cause analysis of extrusion defects.		4.5	0.5	4
	PC26. Analysis of data sheets available in department.		5	1	4
	PC27. Take all corrective and preventive action.		4.5	0.5	4
	PC28. Report the problems caused by machines to superior, when not resolved by operator.		4.5	0.5	4
	PC29. Report defects in the moulds that one does not have the authority to repair.		4.5	0.5	4
	PC30. Report major processing defects beyond control of operator.		2.5	0.5	2
	PC31. Keep records of machine log book, data sheet of machine parameter.		2.5	0.5	2
	PC32. Keep the Documents related to incoming and outgoing material.		2.5	0.5	2
	PC33. Meet targets and goals for production.		2.5	0.5	2
	PC34. Minimize defects in final product.		2.5	0.5	2
	PC35. Follow quality system to get better product.		2.5	0.5	2
	PC36. Keep work area clean and systematic.		2.5	0.5	2
	PC37. Comply to safety and health guidelines and rules.		2.5	0.5	2
	Total		**135**	**25**	**110**

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
RSC/N4809 (CPC/N0117) Operate the blow moulding machine & its trouble shooting	PC1. Learn the process, their types, operations involved.	130	6	2	4
	PC2. Discuss the work requirements for the process and with the supervisor.		6	2	4
	PC3. Refer all components / process related documents to understand dimensions and properties of the required work output.		6	2	4
	PC4. Follow the process requirements in terms of tools / mould / die required, temperature of the heater according to plastics material being used, Hydraulic / pneumatic pressure /		6	2	4
	Rotating speed of the screw, Parson formation, Parson Programming, Blowing time etc. as mentioned in the Work. Instruction / SOP / Control Diagrams Clearly understanding the do's and don'ts of the blow melding process as defined in SOPs / Work Instructions or as defined by supervisors.				
	PC5. Follow the conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document /SOP manual.		6	2	4
	PC6. Follow the conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document / SOP manual.		6	2	4
	PC7. Ensure the raw material like plastics granules, bonding additives etc. required for production.		6	2	4
	PC8. Ensure that the required material with enough stock is available before starting the process.		6	2	4
	PC9. Ensure the type of Mould / Die required to complete the conversion operation and ensure that the same is available for moulding operations.		6	2	4
	PC10. Ensure the availability of spare parts for continuous operation of machine.		6	2	4
	PC11. Ensure the troubleshooting of the blow moulding process. Knows the quality defects observed in blow moulding, their causes and remedies.		5	1	4
	PC12. Set the parameters to ensure manufacturing of good product.		5	1	4
	PC13. Ensure that mould / Die are cleaned properly and no foreign material is trapped in parts of mould/die.		5	1	4
	PC14. Ensure cleaning of the other moulding machine tools, auxiliaries (if any)		5	1	4
	PC15. Ensure cleaning of the area around the machine for any oil, grease, water etc.		5	1	4

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC16. Ensure cleaning of the area around the machine for any oil, grease, water etc.		5	1	4
	PC17. Ensure cleaning of the area around the machine for any oil, grease, water etc.		5	1	4
	PC18. Report major processing defects beyond control of operator.		5	1	4
	PC19. Keep records of machine log book, data sheet of machine parameter.		5	1	4
	PC20. Keep the Documents related to incoming and outgoing material.		5	1	4
	PC21. Meet targets and goals for production.		5	1	4
	PC22. Minimize defects in final product.		5	1	4
	PC23. Follow quality system to get better product.		4	1	3
	PC24. Keep work area clean and systematic.		3	1	2
	PC25. Comply to safety and health guidelines and rules.		3	1	2
	Total		**130**	**35**	**95**
RSC/N4101 (CPC/N0411) Maintain basic health and safety practices at the workplace, 5S	PC1.Wear protective clothing/ equipment for specific tasks and work conditions.	**40**	2.5	0.5	2
	PC2.Carryoutsafeworking practices while dealing with hazards to ensure the safety of self and others.		2.5	0.5	2
	PC3.Apply good housekeeping practices at all times.		2.5	0.5	2
	PC4.Use the various appropriate fire extinguishers on different types of fires correctly.		2.5	0.5	2
	PC5.Demonstraterescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.		2.5	0.5	2
	PC6.Identifyactivities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise, and Identify areas in the plant which are potentially hazardous/unhygienic in nature. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine.		2.5	0.5	2
	PC7.Informtheconcernedauthorities on the potential risks identified in the processes, work place area/layout, materials used etc. Inform the concerned authorities about machine break downs, damages which can potentially harm man/ machine during operations.		2.5	0.5	2

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC8. Create awareness amongst other by sharing information on the identified risks.		2.5	0.5	2
	PC9.Follow the sorting process and check that the tools, fixtures and jigs that are lying on workstations are the ones in use and un- necessary items are not cluttering the workbenches or work surfaces.		2.5	0.5	2
	PC10.Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions.		2.5	0.5	2
	PC11.Followthetechnique of waste disposal and waste storage in the proper bins as per SOP.		1.5	0.5	1
	PC12.Segregate the items which are labelled as red tag items for the process area and keep them in the correct places.		1.5	0.5	1
	PC13.Sortthetools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions.		1.5	0.5	1
	PC14. Ensure that areas of material storage areas are not overflowing. PC15. Properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required.		1.5	0.5	1
	PC16.Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area.		1.5	0.5	1
	PC17.Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.		1.5	0.5	1
	PC18.Followtheproperlabellingmechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists.		1.5	0.5	1
	PC19.Check that the items in the respective areas have been identified as broken or damaged.		1.5	0.5	1
	PC20. Follow the given instructions and check for levelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same To avoid spillage, leakage, fire etc.		1.5	0.5	1
	PC21. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.		1.5	0.5	1
	Total		**40**	**10**	**30**

Assessable Outcome	Assessment Criteria	Total Mark (800)	Out Of	Marks Allocation	
				Theory	Skills Practical
RSC/N4825 (CPC/N1108) Entrepreneurship in Plastics Processing	PC1. Plan and budgeting with reference to various components of Injection moulding.	30	4	2	2
	PC2.Keepbooks of accounts and various transactions.		4	2	2
	PC3. Arrange for financial assistance from various quarters in the light of various schemes available in setup for Injection Moulding.		4	2	2
	PC4. Ascertain the prices of various inputs and products from the market.		4	2	2
	PC5. Assess the influence of various quality parameters of products on the product pricing.		2	1	1
	PC6.Establish cordial relations with various clients for the benefit of industry.		2	1	1
	PC7. Assess the needs and requirement of the clients and assess one's own unique selling proposition.		2	1	1
	PC8.Extractcriticalmarket information that is otherwise not in the public domain.		2	1	1
	PC9. Choose appropriate buyer in a given situation of market parameters.		2	1	1
	PC10. Identify best ways of attracting market price for one's produce.		2	1	1
	PC11. Ensure quality before and during the sale activity to ensure good returns.		2	1	1
	Total		**30**	**15**	**15**
	Grand Total	**600**	**600**	**150**	**450**
	Percentage Weightage:			**25%**	**75%**
	Minimum Pass% to qualify (aggregate):			**70%**	