Model Curriculum

FRP – Helper

SECTOR: RUBBER

SUB-SECTOR: PLASTICS PROCESSING

OCCUPATION: FIBRE REINFORCED PLASTICS

REF ID: RSC/Q4812 (CPC/Q1001), V 1.0

NSQF LEVEL: 1

Skill India
कौशल भारत-कुशल भारत

RSDC
RUBBER SKILL DEVELOPMENT COUNCIL

N·S·D·C
National
Skill Development
Corporation

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: **'FRP – Helper'**
QP No. **'RSC/Q4812 (CPC/Q1001), V1.0, NSQF Level 1'**

Date of Issuance: **December 26th, 2016**

Valid up to: **December 25th, 2021**

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

Authorised Signatory
(Rubber Skill Development Council)

TABLE OF CONTENTS

FRP – Helper

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of an "FRP- Helper", in the "Rubber Skill Development Council" Sector/Industry and aims at building the following key competencies amongst the learners.

Program Name	**FRP- Helper**		
Qualification Pack Name & Reference ID	RSC/Q4812 (CPC/Q1001), V 1.0		
Version No.	1.0	**Version Update Date**	29/05/2019
Pre-requisites to Training	Able to read and write		
Training Outcomes	**After completing this programme, participants will be able to:** • Identify the basic tools, materials, mould and machinery and their usage • Assist and help the manufacturing team in the FRP industries • Demonstrate effective working with others • Apply basic health and safety practices at the workplace.		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of "FRP- Helper" Qualification Pack issued by "Rubber Skill Development Council".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1.	**Introduction to the job role** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** Bridge Module	• List the major milestones in the developmental history of plastic • State the basic industrial scenario of plastics and its prospects • Identify types of reinforced plastic • List major industrial associations • Identify equipment used by FRP-helper • Describe the roles and responsibilities of an FRP- helper.	**Classroom equipment:** Charts, black / white board and duster.
2.	**Identify the tools, materials and machinery** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 25:00 **Corresponding NOS Code** RSC/N4838 (CPC/N1001)	• List the tools materials and machinery • Describe the usage of different types of materials, moulds and machinery • Identify the required tools, tackles, equipment and hardware necessary for the job • Check if the required tools, tackles, equipment and necessary hardware are in proper working condition • Check if required tools, tackles, equipment and necessary hardware match specification as per the job requirement • Identify the different types of the materials, moulds and machinery.	**Mould and machinery:** Mould, compressors, air compressor, transfer mould machine, compression moulding machine and press, injection moulding machine, thermoset injection moulding, two plate mould, three plate mould, compression mould, blow mould and transfer mould, CNC machine, mould polishing and assembly kit, computer hardware with auto-cad/cae / creo / nx, CNC machine, mould polishing and assembly kit, computer hardware and auto-cad software **Hand tools:** Sprayers, rollers, brushes, hammer, screw driver set with multiple heads, allen key hexagonal,twist drills bit, file triangular, hacksaw adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, struck or hammered tools, vises, clamps, snips, saws, drills and knives, etc.

			Other materials: Maintenance equipment, different fibre materials like Boren fibres, natural fibres, carbon, glass fibres, plastic resins like polyester, epoxy, etc. **Measuring equipment:** Scale, micrometer flat and double ball ended, Vernier caliper, radius gauge, feeler gauge, height gauge, thread gauge, measuring tape, weighing balance (1 no.)
3.	**Assist the manufacturing team in the FRP industries** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 30:00 **Corresponding NOS Code** RSC/N4839 (CPC/N1002)	• Describe the process of proper quantity measurement of resins and chemicals • Describe the process of preparing mould and machinery for manufacturing • Follow the procedure of collecting the right type of material from the storage location • Follow the procedure of carrying materials safely to the work place • Carry out proper quantity measurement of resin and chemicals • Prepare the mould and machinery for manufacturing	**Hand tools:** Sprayers, rollers, brushes, hammer, screw driver set with multiple heads, allen key hexagonal,twist drills bit, file triangular, hacksaw adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, struck or hammered tools, vises, clamps, snips, saws, drills and knives, etc. **Other materials:** Maintenance equipment, different fibre materials like Boren fibres, natural fibres, carbon, glass fibres, plastic resins like polyester, epoxy, etc. **Mould and machinery:** Mould, compressors, air compressor, transfer mould machine, compression moulding machine and press, injection moulding machine, thermoset injection moulding, two plate mould, three plate mould, compression mould, blow mould and transfer mould, CNC machine, mould polishing and assembly kit, computer

			hardware with auto-cad/cae / creo / nx, CNC machine, mould polishing and assembly kit, computer hardware and auto-cad software. **Measuring equipment:** Scale, micrometer flat and double ball ended, Vernier caliper, radius gauge, feeler gauge, height gauge, thread gauge, measuring tape, weighing balance (1 no.) **Personal protective equipment:** Hand gloves, safety goggles, rubber gloves, fire extinguisher, apron, helmet, first aid kit with medicines, safety chart, cleaning materials.
4.	**Maintain basic health and safety practices at the workplace, 5S** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 55:00 **Corresponding NOS Code** RSC/N4101 (CPC/N0411)	• Explain the significance of safe working practices • List the environmental and safety policies of the organization • List the good housekeeping practices • Comply with environmental and safety policies of organisation • Follow personal safety , job safety and machine safety procedures • Coordinate resources at the workplace to achieve a healthy, safe and secure environment • Identify any hazards like, accidents, fire or any other natural calamity and take appropriate action. • Demonstrate safe working practices while dealing with hazards • Practise good housekeeping standards at all times • Demonstrate the correct use of a fire extinguisher • Demonstrate rescue techniques applied during fire hazard • Identify potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud	**Classroom equipment:** LCD projector/screen, computer, charts, black / white board & duster. **Measuring equipment:** Scale, micrometer flat and double ball ended, vernier caliper, radius gauge, feeler gauge, height gauge, thread gauge, measuring tape, weighing balance (1 no.) **Personal protective equipment:** Safety goggles, rubber gloves, asbestos gloves, fire extinguisher, apron, helmet, first aid box with medicines

		noise • Conduct regular checks with support of the maintenance team on machine health • Create awareness amongst others by sharing information on the identified risks • Demonstrate the sorting process for equipment • 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 • Categorize the types of wastes and their disposal • Segregate the items which are labelled as red tag items for the process area and keep them in the correct places • Categorize the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers • Practise proper stacking of various types of boxes and containers as per the size/ utility • Identify the floor markings/ area markings used for demarcating the various sections in the plant • Comply with the given instructions for labelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc. • Organize all material and tools in the designated places as indicated in the 5S instructions.	
5.	**Effective working with others** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 30:00 **Corresponding NOS Code** RSC/N4203 (CPC/N7014)	• Practise appropriate communication etiquette while working • Demonstrate active listening skills while interacting with others • Demonstrate responsible and disciplined behaviours at the workplace • Receive information and instructions from the supervisor and fellow workers accurately • Pass on information to authorized persons accurately • Assist others in performing tasks	**Classroom equipment:** LCD projector/screen, computer, charts, black / white board & duster.

		positively • Assist others to maximize effectiveness and efficiency in carrying out tasks • Escalate grievances and problems to appropriate authority.	
	Total Duration **Theory Duration 50:00** **Practical Duration 150:00**	**Unique Equipment Required:** **1. Classroom equipment:** LCD projector/screen, computer, charts, black / white board and duster. **2. Mould and machinery:** Mould, compressors, air compressor, transfer mould machine, compression moulding machine and press, injection moulding machine, thermoset injection moulding, two plate mould, three plate mould, compression mould, blow mould and transfer mould, CNC machine, mould polishing and assembly kit, computer hardware with auto-cad/ cae / creo / nx, CNC machine, mould polishing and assembly kit, computer hardware and auto-cad software **3. Hand tools:** Sprayers, rollers, brushes, hammer, screw driver set with multiple heads, allen key hexagonal, twist drills bit, file triangular, hacksaw adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, struck or hammered tools, vises, clamps, snips, saws, drills and knives, etc. **4. Personal protective equipment:** Hand gloves, safety goggles, rubber gloves, fire extinguisher, apron, helmet, first aid kit with medicines, safety chart, cleaning materials. **5. Other materials:** Maintenance equipment, different fibre materials like Boren fibres, natural fibres, carbon, glass fibres, plastic resins like polyester, epoxy, etc. **6. Measuring equipment:** Scale, micrometer flat and double ball ended, vernier caliper, radius gauge, feeler gauge, height gauge, thread gauge, measuring tape, weighing balance (1 no.)	

Grand Total Course Duration: **200 Hours 0 Minutes**

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

Trainer Prerequisites for Job role: "FRP – Helper" mapped to Qualification Pack: "RSC/Q4812 (CPC/Q1001)" Version 1.0

Sr. No.	Area	Details
1	**Description**	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "RSC/Q4812 (CPC/Q1001), V 1.0".
2	**Personal Attributes**	A Trainer should be free from socio-economic preferences and prejudice. He/ she should be safety conscious and proficient in handling and use security/ safety equipment. Besides being knowledgeable, he/ she should be energetic, motivating, innovative and good at communication. The trainer should be able to establish rapport with the trainees and employ innovative methods to impart instructions.
3	**Minimum Educational Qualification**	No Previous Training Required
4a	**Domain Certification**	Certified for Job Role "FRP – Helper " mapped to the Qualification Pack "RSC/Q4812 (CPC/Q1001), V 1.0" issued by RSDC. 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" with scoring of minimum 80%.
5	**Experience**	As per the standards set by relevant SSC to practice in different industry sectors.

Annexure: Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES
Job Role: FRP – Helper **Qualification Pack Code: RSC/Q4812 (CPC/Q1001), V 1.0** **Sector Skill Council: Rubber Skill Development Council**

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also laydown 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 centre (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on 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.

Assessable outcomes		Assessment criteria for the outcome		
NOS	**Assessable outcome Description**	**Total**	**Theory**	**Practical**
RSC/N4838 (CPC/N1001): Identification and use of basic tools, materials, Mould and machinery.	PC1. identify in consultation with the supervisor the required tools, tackles, equipment and necessary hardware for the job to be carried out	6.5	1.5	5
	PC2. adhere to the time limits given by the supervisor	6	1	5
	PC3. ensure the required tools, tackles equipment and necessary hardware are in proper working condition and match specification as per the job requirement and the list being provided by the supervisor	6	1	5
	PC4. identify the types of the materials, moulds and machinery	6	1	5
	Total	**24.5**	**4.5**	**20**
RSC/N 4839 (CPC/N1002): Understand the job requirements for assisting and helping the manufacturing team in the FRP industries.	PC1. collect the right type of material from the storage location and carry safely to the work place.	8	2	6
	PC2. arrange properly measured quantity of resin and chemicals as instructed by the supervisor.	7	2	5
	PC3. prepare the mould and machinery as instructed by the operator for manufacturing.	7	1	6
	Total	**22**	**5**	**17**
RSC/N4101 (CPC/N0411): Maintain basic Health and safety practices at workplace, 5S.	PC1. wear protective clothing/equipment for specific tasks and work conditions	2.5	0.5	2
	PC2. carry out safe working 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. demonstrate rescue 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. identify activities which can cause	2.5	0.5	2

	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			
	PC7. inform the concerned authorities on the potential risks identified in the processes, workplace area/layout, materials used etc., Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	2.5	0.5	2
	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 & 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. follow the technique of waste disposal and waste storage in the proper bins as per SOP	1.5	0.5	1
	PC12. segregate the items which are labeled as red tag items for the process area and keep them in the correct places	1.5	0.5	1
	PC13. sort the tools/ 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	1.5	0.5	1
	PC15. ensure 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 of 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. follow the proper labelling mechanism of instruments/ boxes/ containers and	1.5	0.5	1

	maintaining reference files/ documents with the codes and the lists			
	PC19. ensure to check 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 labelling 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. to 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**
RSC/N4203 (CPC/N7014) Effective working with others	PC1 display appropriate and adequate communication while working	2	1	1
	PC2 display active listening skills while interacting with others at work	2	1	1
	PC3 demonstrate responsible and disciplined behaviors at the workplace	2	1	1
	PC4 accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	1.5	0.5	1
	PC5 accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt	1.5	0.5	1
	PC6 display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible	1.5	0.5	1
	PC7 consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	1.5	0.5	1
	PC8 escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	1.5	0.5	1
	Subtotal	**13.5**	**5.5**	**8**
	Total	**100**	**25**	**75**