

### CONTACT DETAILS OF THE AWARDING BODY FOR THE QUALIFICATION

**Name and address of awarding body:** Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of. India, Head Office, Guindy, Chennai

### Name and contact details of individual dealing with the submission

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### List of documents submitted in support of the Qualifications File:

1. Qualification Document - FRP – Assistant
2. Curriculum/ Syllabus
3. Training delivery Plan
4. Criteria for Assessment of Trainees
5. Occupational Map
6. Composition of core committee for QP Development order, DCPC, MoCF, GOI
7. Presentation of 2nd core group committee meeting along with Minutes of meeting approved by members
8. Assessment Process flow
9. Documents supporting need of the Qualification:
  - a. Report of the Coordination Committee address the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India
  - b. A Report on Human Resource and Skill requirement for the Chemicals and Pharmaceutical sector (2022) by NSDC.
  - c. Brief report of Chemicals and petrochemicals Industry in India, April 2015, Corporate Catalyst India Pvt Ltd, Page 4
  - d. Report on Indian Plastics Industry 2013-17, edition 2, Nov 2014, PlastIndia Foundation.
  - e. Indian Plastics Industry – Vision 2012, Leverage Plastic, A report by CRISIL
  - f. Potential of Downstream Plastics Industry in North India, 26 June 2012, Knowledge and Strategy paper by Tata Strategic management Group & FICCI
  - g. Potential of plastics industry in Northern India with special focus on Plasticulture and Food Processing- 2014. A report on Plastic Industry by Tata Strategic management Group & FICCI.

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- h. Plastic Industry in India a BPF Overview for PlastIndia International Exhibition 2012, New Delhi
- i. Porters Five force Analysis of the Plastics Industry by Santanu Mandal, International Journal of Multidisciplinary Research, Vol 1, Issue 7, November 2011, ISSN 2231 5780
- j. Industry Engagement certificate in preparation of learning outcomes and Job Role Identification in Petrochemicals sector

## QUALIFICATION FILE

### SUMMARY

**Qualification Title:** FRP - Assistant

**Nature and Purpose of the qualification:**

A CIPET trade certificate for FRP - Assistant and main purpose of the Qualification is to work as a assistant to operator/technicians, etc. for performing the job safely, smoothly and within given time frame. The job is all about carrying the tools and tackles to job site as per requirement, assisting for smooth & safe operation.

**Body/bodies which will award the qualification:**

The Academic Cell – HO, Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

**Body which will accredit providers to offer courses leading to the qualification:**

The Academic Cell – HO, Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

**Body/bodies which will be responsible for assessment:**

The assessment is being carried out at individual Centre level. Training Assessment Wing is created in Head Office (HO) of Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Guindy, Chennai is responsible for overall assessment.

**Occupation(s) to which the qualification gives access:**

FRP – Assistant occupation in Plastics product manufacturing process

**Proposed level of the qualification in the NSQF:** Level 2

**Anticipated volume of training/learning required to complete the qualification:**

320 Notional hours.

**Entry requirements / recommendations:**

Minimum qualification – Preferably 5<sup>th</sup> Standard, Minimum age - 18 years completed.

**Progression from the qualification:**

The FRP- Assistant (Level 2) has a clear pathway to Fibre Reinforced Plastics (FRP) Operator (Level 3).

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### Planned arrangements for the Recognition of Prior learning (RPL):

RPL arrangements are being developed and will be informed in due course of time.

**International comparability where known:** It will be carried out in next phase as comparability is being verified.

**Date of planned review of Qualification:** 04.08.2017

### Format Structure of the Qualification:

Title and Identification code of component	Mandatory/ Optional	Estimated Size (Notional Hours)	Level
CPC/N 1005: Identification and use of basic tools, materials, Mould and machinery.	M	65	2
CPC/N 1006: Understand the job requirements for assisting the operator in manufacturing various type of FRP products through different manufacturing process	M	65	2
CPC/N 1007: Understand and apply safety measures and maintain housekeeping in the shop floor.	M	65	2
CPC/N 1008: Work effectively with other fellow workers to achieve the goals of the organization.	M	45	2
CPC/N 1009: Reading and writing reports.	M	40	2
CPC/N 1010: Assisting for smooth manufacturing operation at the work place.	M	40	2
<b>Total</b>		<b>320</b>	

Qualifications Document - FRP - Assistant attached as Annexure.

## QUALIFICATION FILE

### SECTION 1

#### ASSESSMENT

##### **Body/Bodies which will carry out assessment:**

A Separate department/ body -Training Assessment Wing of Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

##### **Will the assessment body be responsible for RPL assessment?**

RPL arrangements are being developed and will be informed in due course of time.

##### **Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:**

With uniformity and setting of learning outcomes for different Jobs Roles the assessment of candidates will be at learning outcome level. Assessment criterion has been defined for each learning outcome and it includes both theoretical and practical skills on which the candidate will be assessed. The question suite which will be used to check the skills of the trainee would include

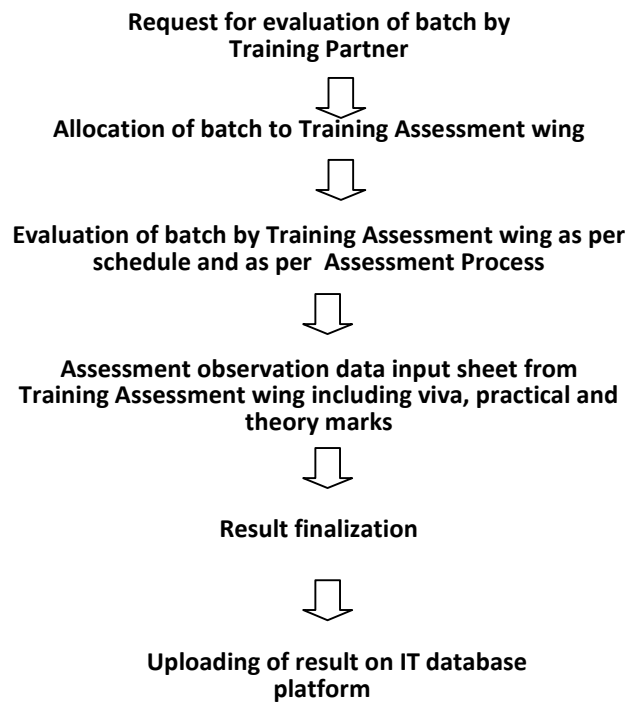
- **Theoretical test suite** – Will include multiple choice questions, audio-video question etc. which will test the trainee on his knowledge of the subject
- **Practical Knowledge suite** – Practical knowledge can be tested through Assessor driven evaluation/test, Situational Judgment Tests etc to test practical core competence. A mix of these would be able to evaluate the trainee on his practical knowledge of the Qualification Document.

##### **Assessment strategy:**

- Assessment criteria for Qualification Document have been developed. Each Learning Outcome have separate marks for Theory and Practical Skills.
- The Training Assessment Wing will have assessors who will not be associated with training activities and will be provided training on the said work. Thus it will ensure that the assessment carried out is fair and consistent.
- Set of question bank developed to assess the theoretical and practical knowledge. To ensure the quality, each trainees get the unique set of question
- Student has to score minimum marks separately for theoretical and practical skill and overall percentage should also be 50% for theory and 70% for practical.
- Empanelment of subject matter expert as assessor to assess trainee specifically on practical skills
- Assessments are preferably conducted by written examination papers in English/regional languages according to the requirement.
- It has been ensure that TP/trainer should not be present during assessment

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### Assessment Process Flow:



### Summative Assessment:

Based on the Total Marks allotted for the specific subject, formal evaluation shall be conducted. Based on secured marks, candidates shall be declared pass or fail.

Steps undertaken for summative assessment:

1. Based on Completion of Batch, Evaluation Schedule shall be prepared
2. Identified Assessor is nominated for Evaluation
3. Setting up of separate Question Paper for Theory & Practical Examination
4. Conduct of examination as per the schedule
5. Evaluation & Certification

**Evidence Collected during Assessment:** Theoretical Answer Sheets, Practical Exam Sheets, Evaluation Sheets, Jobs produced during practical Exams.

### Protocol for Selection of Assessors:

- The Assessors should have the minimum qualification: Degree in Engineering.
- The Assessors should have minimum 5 years of Experience in the relevant field.

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### ASSESSMENT EVIDENCE

#### Assessment Guidelines:

1. Criteria for assessment for each Qualification Document will be created by CIPET.
2. Each Assessable outcome (AO) will be assigned marks proportional to its importance in Learning Outcome and few performance criteria may be allotted marks in combine.
3. Each Learning Outcome will be assessed both for theoretical knowledge and practical which is being proportionately demonstrated in the table below.
4. The assessment for the theory part will be based on knowledge bank of questions created by CIPET which will contain multiple choice theory questions and Practical question database with mark allotment criteria.
5. To pass the Qualification Document, every trainee should score a minimum of 50 % in Functional and all Generic Learning Outcome's.
6. In case of successfully passing only certain number of Learning Outcome's, the trainee is eligible to take Subsequent assessment on the balance Learning Outcome's to pass the Qualification Document.

**Title of the Component:** FRP – Assistant

Assessable outcomes		Assessment criteria for the outcome		
LO	Assessable outcome Description	Theory	Practical	Total
CPC/N 1005: Identification and use of basic tools , materials, Mould and machinery	AO1. To identify in consultation with the supervisor the required tools, tackles, equipment and necessary hardware for the job to be carried out.	3	9	12
	AO2. Adhere to the time limits given by the supervisor, 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.	3	9	12
	AO3. Identify the types of the materials, moulds and machinery.	2	6	8
	AO4. Assist in operation of various machinery in the shop floor.	2	6	8
	<b>Sub Total</b>		<b>10</b>	<b>30</b>
CPC/N 1006: Understand the job requirements for assisting the operator for	AO1. Collect the right type of material from the storage location and carry safely to the work place.	2	6	8
	AO2. Arrange properly measured quantity of resin and chemicals as instructed by the	3	9	12

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manufacturing various products by different manufacturing process	supervisor.			
	AO3. Prepare the mould and machinery as instructed by the operator for manufacturing.	2	6	8
	AO4. Operate the machine and follow the established guidelines to complete the manufacturing process.	3	9	12
	<b>Sub Total</b>	<b>10</b>	<b>30</b>	<b>40</b>
CPC/N 1007: Understand and apply safety measures and maintain housekeeping in the shop floor	AO1. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise etc. Identify areas in the plant which are potentially hazardous/ unhygienic in nature.	2	6	8
	AO2. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine & 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	6	8
	AO3. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions & follow the technique of waste disposal and waste storage in the proper bins as per SOP.	2	6	8
	AO4. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places	2	6	8
	AO5. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions.	2	6	8
	<b>Sub Total</b>	<b>10</b>	<b>30</b>	<b>40</b>
CPC/N 1008: Work effectively with other fellow workers to achieve the goals of the organization	AO1. Inspect at the work place to identify types of tools, tackles and hardware required for the job and the work site is clear from all obstructions.	1	3	4
	AO2. Ensure availability of tools, tackles and hardware required for the job. Ensure tools, tackles and hardware required for the job are fit and ready to use.	1	3	4
	AO3. Assist the operator in operation of the machine by providing necessary material and following instructions to complete the process.	2	4	6



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	AO4. Extend necessary help for smooth and timely completion of the job. Ensure at the work place is clean before starting the job.	2	4	6
	AO5. Extend help to dismantle, assemble and carry out maintenance activities required at the work place. Ensure to oil and grease the parts of the equipments post completion of the job.	1	3	4
	AO6. Ensure on completion if the job the tools tackles and hardware to be carried back to department /store. Inform supervisor on completion of the assigned job.	1	5	6
	<b>Sub Total</b>	<b>8</b>	<b>22</b>	<b>30</b>
CPC/N 1009: Reading & Writing Reports	AO1. Able to read the language of reports either in English or any vernacular language.	1	3	4
	AO2. Understand the meaning of these reports and its importance.	1	3	4
	AO3. Fill up the reports in time.	1	4	5
	AO4. Filing of the reports and formats in proper location.	1	3	4
	AO5. Retrieval and producing the specific reports/files to the supervisor as and when required.	1	3	4
	AO6. Numbering and orderliness maintenance of files in safe locations.	1	3	4
	<b>Sub Total</b>	<b>6</b>	<b>19</b>	<b>25</b>
CPC/N 1010: Assisting for smooth operation at the work place	AO1. Inspect at the work place to identify types of tools, tackles and hardware required for the job and the work site is clear from all obstructions.	1	3	4
	AO2. Ensure availability of tools, tackles and hardware required for the job. Ensure tools, tackles and hardware required for the bob are fit and ready to use.	1	3	4
	AO3. Identify the required tools, tackles and hardware required for any particular job	1	4	5
	AO4. Extend necessary assistance for smooth and timely completion of the job. Ensure at the work place is clean before starting the job.	1	3	4
	AO5. Assist to dismantle, assemble and carry out maintenance activities required at the work place. Ensure to oil and grease the parts of the equipments post completion of the job.	1	3	4

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	AO6. Ensure on completion if the job the tools tackles and hardware to be carried back to department /store. Inform supervisor on completion of the assigned job.	1	3	4
	<b>Sub Total</b>	<b>6</b>	<b>19</b>	<b>25</b>
	<b>Total</b>	<b>50</b>	<b>150</b>	<b>200</b>

### Means of assessment 1:

The assessment comprise of –

- Theory Assessment
- Viva voce
- Practical assessment

### Means of assessment 2:

**Pass/Fail**

**The Pass mark of theory written assessment is 50% and for viva and practical assessment is 70%.  
The candidate has to pass separately in Theory and Practical.**

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### SECTION 2

#### EVIDENCE OF LEVEL

Level of qualification: 2

Title /Name of Qualification/Component: FRP Assistant		Level: 2	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF Level descriptors	NSQF Level
Process	<p>The FRP Assistant is expected to assist the manufacturing team and be part of the following regular activities under close supervision of the shop floor supervisor. He also applies little application of understanding with more of practice.</p> <ul style="list-style-type: none"> <li>• Support the operator in organizing and executing basic operation required for FRP products.</li> <li>• Maintain the time limits for allotted work.</li> <li>• Performs simple fittings like drilling, hack-sawing, measuring etc under direct supervision of the operator.</li> <li>• Operation of various machinery in the shop floor along with the operator, to complete the manufacturing process as per the established guidelines.</li> <li>• Identifies the types of resin material as required for the product.</li> <li>• Safely handles the resin during working.</li> <li>• Helps in measurement and mixing of materials.</li> <li>• Prepares mould and machinery for the specific operation.</li> <li>• Follow techniques of waste disposal and waste storage in</li> </ul>	<p>The job role of the FRP assistant is to carry out the processes that are repetitive in nature, on a regular basis. While learning and from the practice, he applies his understanding to perform his duties in a better way. So it relates to the NSQF level descriptor.</p>	2

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	<p>proper bins as per Sop.</p> <ul style="list-style-type: none"><li>• Sort the tools /equipment and fasteners /spare parts etc as per 5 'S' guide lines.</li><li>• Able to read the safety &amp; other instructions written in the plant/equipment, shop floor, and understand them. if required ask the supervisor.</li><li>• Fill up the reports as required from time to time.</li><li>• Know the function of all machines available in the shop floor.</li><li>• Inspects the work place before start of the job to ensure availability of tools and tackles required.</li><li>• Identifies the dirty areas/ items and cleans them.</li><li>• Numbering and maintaining of the files in orderly format.</li><li>• Keeps the files, records, registers etc. in safe locations as instructed by the supervisor.</li><li>• Traces the specific report/file from the storage location and produce to the supervisor.</li><li>• Understand the activities which can cause potential injury.</li><li>• Conducts regular checks with support of maintenance team to identify the abnormal wear and tear and informs this to the supervisor.</li><li>• Ensures to oil and grease the parts of the equipment post completion of the job.</li><li>• Segregate the items which are labelled as red tag items for the process area and</li></ul>		
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	<p>keep them in the correct places &amp; sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions.</p>		
<b>Professional knowledge</b>	<ul style="list-style-type: none"> <li>• Understands the Different types of tools, tackles, equipments and hardware requires for carrying out jobs pertaining to the manufacturing activities of FRP products in the shop floor.</li> <li>• Familiar with common terminology used in the FRP products, machines, materials &amp; processes.</li> <li>• Understands the various manufacturing processes in FRP.</li> <li>• Understands the value of safety and hygiene.</li> <li>• Understands the significance of quality and applies his understanding to achieve this.</li> </ul>	<p>This knowledge is related to the materials, tools in limited context. The job role also requires understanding of work related to quality.</p>	02
<b>Professional skill</b>	<ul style="list-style-type: none"> <li>• Prioritize and execute tasks within time limit.</li> <li>• Understanding the operational requirement.</li> <li>• Weight and dimensions of the products manufactured by the specific industry.</li> <li>• Safely handles all type of resins/fibres and chemicals as specified in the operating procedures/packing details.</li> <li>• Plan and organize his own work</li> <li>• schedule, work area, tools &amp; equipments &amp; materials to maintain decorum for safe and improved productivity.</li> <li>• Display active listening skills.</li> </ul>	<p>The skills expected under this category are related to tools, quality, safety etc in limited context. So it matches with the NSQF level descriptor.</p>	02

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	<ul style="list-style-type: none"> <li>Persuade co team members to follow discipline and good house keeping.</li> </ul>		
<b>Core skill</b>	<ul style="list-style-type: none"> <li>Read and understand the safety warnings, work instructions and standard operation procedures.</li> <li>Read work instructions and Standard operation procedures.</li> <li>Effectively understand about operational requirements.</li> <li>Answer the queries raised by the operating team as well as others.</li> <li>Communication with people in proper manner, in a polite manner.</li> <li>Know the various types of forms and formats used.</li> <li>Make proper oral communications. Listening attentively.</li> <li>Be punctual and attentive.</li> <li>Follows safety information, maintains cleanliness and uses Personal protection equipments.</li> </ul>	The job roles listed in these category involves reading and writing of instructions and warnings, Oral communication with coworkers, familiarity with socio religious culture, hygiene and environment as listed in the NSQF level descriptor.	02
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>The FRP assistant is performing his own job and personal safety and hygiene. Involves in cleanliness all around the shop floor. Works with the operating team. Works under continuous instruction &amp; close supervision of supervisor.</li> </ul>	The FRP helper works under close supervision and continuous instruction and hence has no responsibility.	02

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### SECTION 3

#### EVIDENCE OF NEED

##### **What evidence is there that the qualification is needed?**

Qualification document has been developed by suggestion and approval of Chemicals and Petrochemicals Core committee constituted by Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India vide order no. 45012/86/2015-PC-IV Dt. 10.03.2016 which consist of senior leaders and experts from Plastics and Allied Industry, Associations etc and has been further substantiated by various study reports, Annual reports etc. A report on the Coordination Committee addresses the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. of India (page no. 4, Attached as Annexure 9(a)).

##### **What is the estimated uptake of this qualification and what is the basis of this estimate?**

The Skill gap report states that, there will be 11.6 Lakhs additional manpower is required by 2023-24 is based on the Machinery & Sector growth and Technical Manpower. Refer: Name of the Report **"A report of the coordination committee to address the issues related with human resources/skilled manpower required of the industry"** (page no. 6, Attached as Annexure 9 (a)) (Copy of the Skill Gap Report is enclosed).

##### **What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?**

Mapping of FRP Assistant has been done with National Classification of Occupation 2004 to ensure the qualification does not duplicate, the Qualification have being checked with qualification pack of other sectors like Rubber, Electronics etc and there is no duplicity observed in terms of contents, module/syllabus covered etc.

The NSDC list of approved and under developed Qualification Packs was checked prior to stating the work to ensure no duplicity.

##### **What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?**

Qualification documents shall be revised every two years and the feedback from Industries/ Associations, Alumni will be collected and necessary revisions/updating in Qualification document will be carried out. The feedback received from the industry in term of employability, course coverage, placement factors etc will be checked and growth indicators will be identified and reviewed.

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### ANNEXURE:

7. Presentation of 2nd core group committee meeting along with Minutes of meeting approved by members
9. Documents supporting need of the qualification:
  - a. Report of the Coordination Committee address the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India
  - b. A Report on Human Resource and Skill requirement for the Chemicals and Pharmaceutical sector (2022) by NSDC.
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  - i. Porters Five force Analysis of the Plastics Industry by Santanu Mandal, International Journal of Multidisciplinary Research, Vol 1, Issue 7, November 2011, ISSN 2231 5780



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### SECTION 4

#### EVIDENCE OF RECOGNITION AND PROGRESSION

**What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?**

Relevant information was collected from Industries and allied sector working in this area. The Plastics industries are recruiting people based on the qualification acquired. Maximum of the industries accept this as qualification for selection/short listing of the individual ***(Minutes of Meeting of Core committee is attached)***.

The skills acquired at level 2 for a particular duration makes it easy for the Individual to progress to the next level.

ANNEXURE:

7. Presentation of 2nd core group committee meeting along with Minutes of meeting approved by members.

#### **Vertical Pathway:**

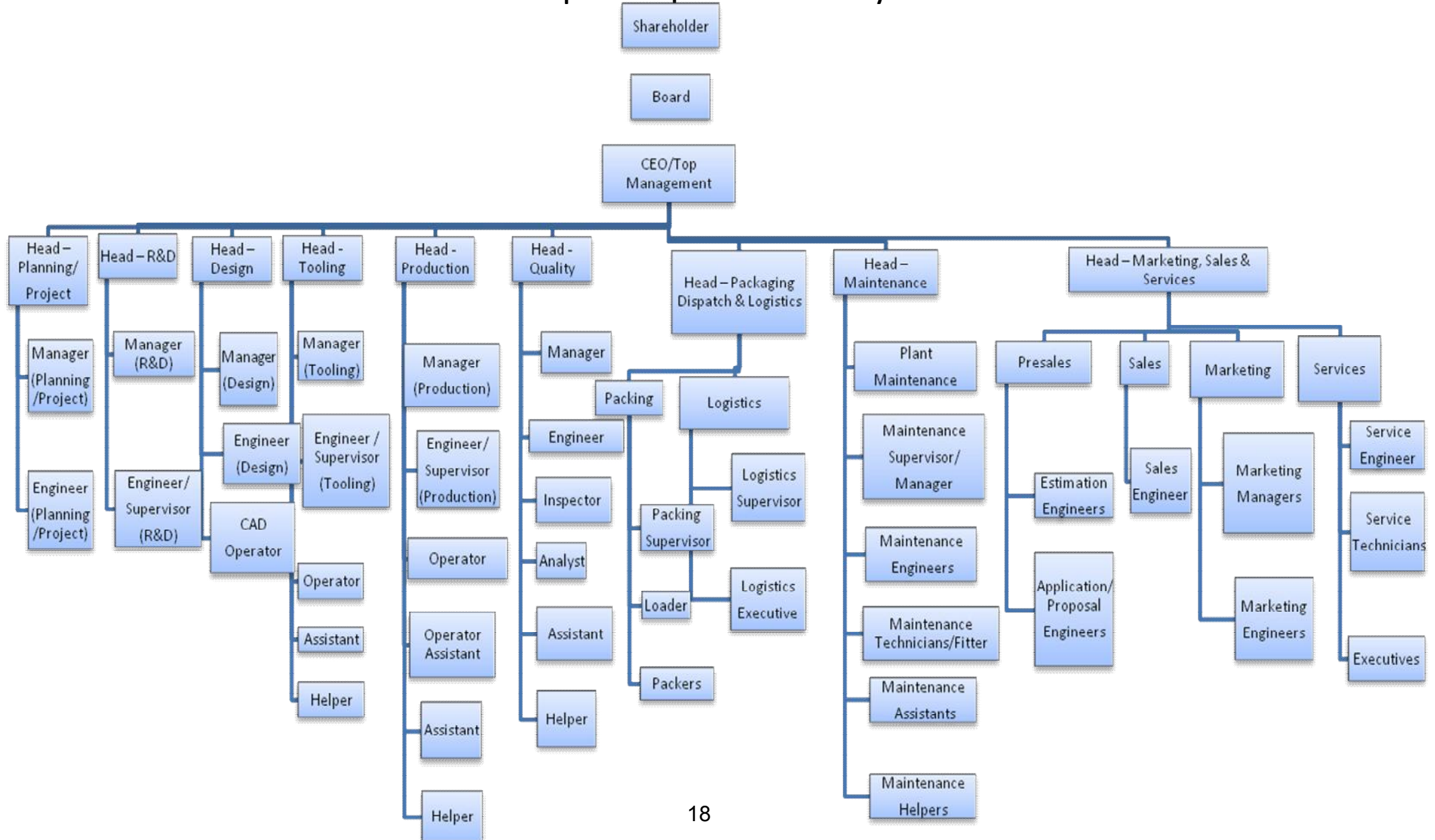
The Occupational Map has been created & attached.

The FRP- Assistant (Level 2) has a clear pathway to Fibre Reinforced Plastics (FRP) Operator (Level 3).

#### **Horizontal Pathway:**

The individual can migrate within the Plastics Processing related industries.

Occupation Map – Vertical Pathway



Job Role: FRP- Assistant