



QUALIFICATION FILE

MACHINE OPERATOR – INJECTION MOLDING

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 3.5

Submitted By:

Central Institute of Petrochemicals Engineering & Technology (CIPET)
Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India
CIPET Head office, T.V.K Industrial Estate, Guindy, Chennai – 600 032.

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Section 1: Basic Details

1.	Qualification Name	Machine Operator – Injection Molding (MO-IM)																
2.	Sector/s	Chemicals & Petrochemicals (CPC)																
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (change to previous, once approved) 2021/CP/CIPET/04623	Qualification Name of existing/previous version: Machine Operator – Injection Molding															
4.	a. OEM Name b. Qualification Name (Wherever applicable)	Not Applicable																
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-3.5-CP-04117-2025-V2-CIPET	6. NCrf/NSQF Level: Level 3.5															
7.	Award (Certificate/Diploma/Advanced Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																
8.	Brief Description of the Qualification	The Machine operator Injection molding understands the instructions from Supervisor for completing the work order and helps in handling plastics granules (raw material), operates the Plastic Injection Moulding machines & Quality and Inspection of product as per the requirement.																
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Grade 11th</td> <td>No Experience required</td> </tr> <tr> <td>2</td> <td>Grade 10th or equivalent</td> <td>1.5 years relevant experience</td> </tr> <tr> <td>3</td> <td>8th grade</td> <td>4.5 years relevant experience</td> </tr> <tr> <td>4</td> <td>Previous relevant Qualification of NSQF Level 3</td> <td>1.5 years relevant experience</td> </tr> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Grade 11 th	No Experience required	2	Grade 10 th or equivalent	1.5 years relevant experience	3	8 th grade	4.5 years relevant experience	4	Previous relevant Qualification of NSQF Level 3	1.5 years relevant experience
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1	Grade 11 th	No Experience required																
2	Grade 10 th or equivalent	1.5 years relevant experience																
3	8 th grade	4.5 years relevant experience																
4	Previous relevant Qualification of NSQF Level 3	1.5 years relevant experience																
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrf))	20	11. Common Cost Norm Category (I/II/III) (wherever applicable): I															
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	-																

13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	☒ Offline ☐ Online ☐ Blended <table border="1" data-bbox="952 140 2051 357"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>210</td> <td>360</td> <td>30</td> <td>-</td> <td>600</td> </tr> <tr> <td>Online</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <i>(Refer Blended Learning Annexure for details)</i>		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	210	360	30	-	600	Online	-	-	-	-	-
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																
Classroom (offline)	210	360	30	-	600																
Online	-	-	-	-	-																
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/8142.0501																			
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	Shift In-charge/ Supervisor in Injection Moulding Industry																			
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																			
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:																			
18.	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If "Yes", specify applicable type of Disability:																			
19.	How Participation of Women will be Encouraged	During selection of candidates for the training programme, Female candidates are given preference.																			
20.	Are Greening/ Environment Sustainability Aspects Covered (<i>Specify the NOS/Module which covers it</i>)	☐ Yes ☒ No																			
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No																			
22.	Name and Contact Details of Submitting / Awarding Body SPOC (<i>In case of CS or MS, provide details of both Lead AB & Supporting ABs</i>)	Name: Arunav Banerjee Email: cipethovtc@cipet.gov.in Contact No.: 9402183512 Website: www.cipet.gov.in																			
23.	Final Approval Date by NSQC: 26.05.2025	24. Validity Duration: 3 Years	25. Next Review Date: 25.05.2028																		

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s: 08

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weight age (%) (if applicable)
1.	Understand basic concepts, job requirements & basics know how related to process.	CPC/N0214 & V2.0	Core	3.5	3	30	60	-	-	90	38	34	-	-	72	-
2.	Perform the Injection moulding related operations, monitor process parameters and troubleshoot the process/product if any.	CPC/N0221 & V2.0	Core	3.5	9	90	180	-	-	270	86	229	-	-	315	-
3.	To conduct quality check and inspection of the Finished products with reference to approved products.	CPC/N0222 & V2.0	Core	3.5	3	30	60	-	-	90	26	75	-	-	101	-
4.	Maintain basic health and safety practices at the workplace, 5S	CPC/N0411 & V2.0	Non-Core	3.5	1	10	20	-	-	30	10	30	-	-	40	-
5.	Entrepreneurship in Injection Moulding	CPC/N0223 & V2.0	Non-Core	3.5	1	10	20	-	-	30	22	8	-	-	30	-
6.	Basics of MS Office / Open Source office suite software	CPC/N0219 & V2.0	Non-Core	3.5	1	10	20	-	-	30	8	14	-	-	22	-
7.	Employability Skills	DGT/VSQ/N0101 & V1.0	Non-Core	3.5	1	30	-	-	-	30	10	10	-	-	20	-
8.	On the Job Training (OJT)	N/A	Core	3.5	1	-	-	30	-	30	-	-	-	-	-	-
Duration (in Hours) / Total Marks			-	-	20	210	360	30	-	600	200	400	-	-	600	-

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.																
2.																
Duration (in Hours) / Total Marks																

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level:

50% for theory and 70% for practical (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise:

(Every Trainee should score a specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma with minimum 2 years experience in field of Plastics / Polymer Engineering / Technology
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B.E. / B.Tech. / M.Sc. with 2 years experience in the field of Plastics / Polymer Engineering / Science
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	Nil

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma with minimum 5 years experience in the field of Plastics / Polymer Engineering / Technology Or B.E. / B.Tech. with minimum 2 years experience in the field of Plastics / Polymer Engineering / Technology
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma with minimum 6 years experience in the field of Plastics / Polymer Engineering / Technology Or B.E. / B.Tech. with minimum 3 years experience in the field of Plastics / Polymer Engineering / Technology
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.E. / B.Tech. with minimum 4 years experience in the field of Plastics / Polymer Engineering / Technology Or M.E. / M.Tech. with minimum 2 years experience in the field of Plastics / Polymer Engineering / Technology
4.	Assessment Mode (Specify the assessment mode)	Physical Assessment
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): NO
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): NO
3.	Government /Industry initiatives/ requirement (Yes/No): YES
4.	Number of Industry validation provided: 05
5.	Estimated nos. of persons to be trained and employed: 7000 candidates
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: YES If "No", why:

Section 6: Annexure & Supporting Documents Checklist

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	- Entry Qualification for this course is Grade 11th with No Experience required OR Grade 10th or equivalent with 1.5 years relevant experience OR Grade 8th with 4.5 years relevant experience OR Previous relevant Qualification of NSQF Level 3 with 1.5 years relevant experience - After successful completion of training, Trainees / Candidates are eligible for Shift Incharge/ Supervisor in the Plastics Processing Industry. - Job description: The Machine operator handles the plastic granules (raw material), sets up and operates the Injection Moulding Machine & Auxiliary Equipment, finishes the product & stores in the desired place.
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Equipment Required: Classroom equipment: LCD Projector/Screen, Computer, charts, Black / White board & Duster. Measuring equipment: Steel Ruler, Micrometre, Vernier Calliper, Radius gauge, Feeler gauge, Steel measuring tape, Weighing Balance (1 No.) Hand Tools: Hammer, screwdriver set with Multiple heads, Allen key hexagonal, File triangular, Hacksaw, adjustable, Spanner set double side, Adjustable spanner Personal Protective equipment: Safety Goggles, Rubber Gloves, Asbestos gloves, Fire Extinguisher, Apron, Helmet, First Aid Box with Medicines. Plastics raw material: PP, HDPE, ABS, PPCP..etc., for training on machines of injection grade. Mould: Hand mould, Two/Three plate moulds. Equipment & Auxiliaries Equipment: Automatic Hopper Loader, Hot air oven and Dryer, Dehumidifier, Mould Temperature Controller, Scrap Grinder, Crane, Air Compressor, Hot air blow Gun, Water cooling Tower Hand Operated Injection Moulding Machine Semi-Automatic Horizontal / Vertical Injection Moulding Machine Fully Automatic Horizontal Injection Moulding Machine Microprocessor Controlled Injection Moulding Machine

3.	Annexure: Detailed Assessment Criteria (<i>Mandatory</i>)	1. Criteria for assessment for each Qualification Document are being 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 combination. 3. Each Learning outcome will be assessed both for theoretical knowledge and practical knowledge which is being proportionately demonstrated in the table below. 4. The assessment for the theory part will be based on a knowledge bank of questions created by CIPET which will contain multiple choice theory questions and a 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 Outcomes. 6. In case of successfully passing only a certain number of Learning Outcomes, the trainee is eligible to take Subsequent assessment on the balance Learning Outcomes to pass the Qualification Document.
4.	Annexure: Assessment Strategy (<i>Mandatory</i>)	Assessment strategy: - Assessment criteria for Qualification Document have been developed. Each Learning outcome has 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 banks developed to assess theoretical and practical knowledge. To ensure the quality, each trainee gets a unique set of questions. - Students have 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 trainees specifically on practical skills. - Assessments are preferably conducted by written examination papers in English/ regional languages according to the requirement. - It has been ensured that TP/trainer should not be present during assessment.
5.	Annexure: Blended Learning (<i>Mandatory, in case selected Mode of delivery is "Blended Learning"</i>)	-
6.	Annexure: Multiple Entry-Exit Details (<i>Mandatory, in case qualification has multiple Entry-Exit</i>)	-
7.	Annexure: Acronym and Glossary (<i>Optional</i>)	-
8.	Supporting Document: Model Curriculum (<i>Mandatory – Public view</i>)	Enclosed as Annexure-I
9.	Supporting Document: Career Progression (<i>Mandatory - Public view</i>)	Enclosed as Annexure-II
10.	Supporting Document: Occupational Map (<i>Mandatory</i>)	Enclosed as Annexure-III
11.	Supporting Document: Assessment SOP (<i>Mandatory</i>)	Enclosed as Annexure-IV
12.	Any other document you wish to submit:	Enclosed as Annexure-V

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	Machine Operator - Injection Moulding is expected to ensure housekeeping and safety in the Moulding area and select the correct mould, etc. he/she has to- • Understanding the work order and the process requirement from the supervisor • Arranging the required raw material and Moulds for the process • To interact with the supervisor in order to understand the production schedule • To plan the day's production activities based on the supervisor's instructions • To collect material data sheet, machine instructions and work manuals • To ensure availability of consumables and plastics materials for production in sufficient quantity as per production plan/supervisor instructions. • Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors. • Check availability of the personal protective equipment's (PPE) like Gloves, Goggles etc. • Ensure that the required material is procured from the store before starting the process • Understand the Mould required for executing the required operation and ensure that the same is available for operation. • If mould is not available collect the mould from the tool room. • Install and bolt the mould in place and slide the safety door shut. • Add the raw material in the machine using a material loader or by manual feeding. • Ensure moulds are clean if not clean with soft cotton cloth. • Ensure cleaning of the other auxiliaries tools, (if any) before the initiation of the Moulding and trimming process • Ensure cleaning of the area around the apparatus for any oil, grease, combustible substances etc. so as to prevent any accident • Ensure availability of the coolant and working of valves to circulate the coolant to cool and solidify plastic • Understand the raw material like plastics granules, fillers, bonding additives etc. required for executing the activity • Refer the queries to supervisor if they cannot be resolved by the operator • Confirm self - understanding to the supervisor once the query is resolved so that all doubts & queries can be resolved before the actual process execution • He/she is responsible for checking the operations of the equipment • Feeding the granules as per requirement • Set up and operate the Injection Moulding machine • Perform visual inspection of the output products • Achieve productivity, quality and safety standards as per company's norms	Machine Operator - Injection Moulding job requires limited range of activities which are familiar and predictable like availability of consumables, safety PPE, raw material used, basic machine parts and its functions etc. He/she has to collect the mould from the tool room. He/she has to ensure that the moulds are clean if not clean with soft cotton cloth. He/she should understand the raw material like plastics granules, fillers, bonding additives etc. required for executing the activity. He/she should know about entrepreneurship, marketing and other quality related functions.	3.5

	• Report problems to supervisor • He/she will be responsible for Inspecting the finished components • keeping records of production and defects • conducting minor repair/de-flashing if any on output parts which can be reworked • The role holder will interact with maintenance team and material management team • The individual needs to ensure sorting, streamlining & organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization • He/she needs to understand Market Information Management • Client Relation Management • Marketing knowhow and strategy He/she also needs to understand and practice Entering, updating and maintaining data in MS Office system/ Office open source system.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	The user/individual on the job needs to know and understand: • General Principle of Moulding procedure, process knowledge, machine startup & shutdown procedures, moulds loading and unloading procedure. • Types of different thermoplastics materials, additives and grades for different plastics products. • Different types of tools & machinery to process the plastics and trim the output. • Identification & troubleshooting the various defects in products produced in the injection Moulding machines.	Machine Operator - Injection Moulding should understand and know factual knowledge about process, principle of injection Moulding Technique and its operation, entrepreneurship, marketing, quality etc.	3.5
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The user/individual on the job needs to know and understand: • General principles of Moulding procedure and process knowledge Mould loading and unloading procedure, parameter settings etc. • Types of plastics like thermoplastics and the additives & grades to be used tonnage and capacity of the machine being operated. • Different types of tools and machinery to process the plastic and trim the output • Various types of cooling systems and their properties. • How to perform Moulding machine safety check • Hazards and safety aspects involved in tape production and usage of relevant PPEs • Safety procedures to be adopted to complete mould removal process • Detect problems in day to day tasks: Support operator in using specific problem solving techniques and detailing out the problems • Discuss possible solutions with the supervisor for problem solving. The user/individual on the job needs to know and understand how to:	A Machine Operator Injection Moulding should be familiar with the fundamental principles of moulding procedures and possess process knowledge relevant to repetitive tasks in their assigned area. They should understand various types of plastics, along with the additives, grades, and tonnage required. The operator should demonstrate practical skills for routine and repetitive tasks in the injection moulding process, have a grasp of quality concepts, and apply them in their designated area of work.	3.5

	- Plan and organize the work order and jobs received from the internal customers/ operator. - Organize all process/ equipment manuals so that sorting out The user/individual on the job needs to know and understand how to: - Follow instructions and work on areas of improvement identified - Complete the assigned tasks with minimum supervision - Complete the job defined by the operator within the timelines and quality. - The user/individual on the job needs to know and understand how to: - Use common sense and make judgments during day to day basis - Use basic reasoning skills to identify and resolve basic problems - Use intuition to detect any potential problems which could arise during operations. - He/she needs to know about entrepreneurship associated with Injection Moulding, its concepts etc. He/she needs to know about marketing strategy involved for the products manufactured, market availability etc.		
Broad Learning Outcomes/Core Skill	The user/ individual on the job needs to know and understand how to: - How to be able to read warnings, instructions and other text material on product labels, components etc. - How to enter into the history card details of the fault identified in the plastic product manufactured read equipment manuals and process documents to understand the equipment and processes better its - Read instructions especially safety instructions especially symbols while using the equipment in the plant area logs. The user/individual on the job needs to know and understand how to: - Discuss task lists, schedules, and work-loads with co-workers/assistants and supervisors - Question internal customers/ Shop floor operator appropriately in order to understand the nature of the problem and make a diagnosis Avoid using jargon, slang or acronyms when communicating with an operator /fellow subordinates etc. Unless it is required.	A Machine Operator Injection Moulding should be able to read and write warnings, instructions, and other text on product labels and components with sufficient clarity. They should also possess basic arithmetic skills, such as adding raw material weights.	3.5
Responsibility	Machine Operator - Injection Moulding is responsible for his own job and self-learning. He/she Set up basic as well as all critical machine controls and may operate injection Moulding Machine in order to produce good quality Moulding as per approved specifications by supervisor. He may need to control/ check multiple machines at a time.	Machine Operator - Injection Moulding is responsible for his/her own job and learning which justifies the pegging of the QP at Level 4.	3.5

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: Maximum 50 candidates per batch

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	Measuring Equipment	Steel Ruler, Micrometer, Vernier Caliper, Radius gauge, Feeler gage, Steel measuring tape, Weighing Balance (1 No.)	As per requirement
2.	Hand Tools	Hammer, screwdriver set with Multiple heads, Allen key hexagonal , File triangular, Hacksaw, adjustable, Spanner set double side, Adjustable spanner	As per requirement
3.	Personal Protective Equipment	Safety Goggles, Rubber Gloves, Asbestos gloves, Fire Extinguisher, Apron, Helmet, First Aid Box with Medicines	As per requirement
4.	Plastics raw material	PP, HDPE, ABS, PE etc., for training on machines of injection grade	As per requirement
5.	Mould	Two plate, three plate, split mould etc. for automatic injection moulding & hand moulds.	As per requirement
6.	Equipment & Auxiliary Equipment	Hand Injection Moulding Machine, Semi Automatic Injection moulding Machine, Automatic Injection moulding Machine, All Electric & Microprocessor Controlled Injection Moulding Machine, Automatic Hopper Loader, Hot air oven and Dryer, Dehumidifier, Mould Temperature Controller, Scrap Grinder, Crane, Air Compressor, Hot air blow Gun, Scrap Grinder and Water cooling Tower.	As per requirement

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. LCD Projector/Screen,
2. Computer
3. Charts
4. Whiteboard & Marker pen

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Sai Ram Plast	Mr. G. Bhanu Kumar	Manager	Sy. No. 232-2, D-1, Palem Road, Surampalii (V), Gannavaram (M), Krishna District – 521212, Andhra Pradesh	970454955	mvsursh28@gmail.com	-
2	Suba Plastics Pvt. Ltd.	Mr. S. Balathandauthapani	AGM-HR & Admin.	No. 85, Jotipuram, Coimbatore – 641047, Tamil Nadu	8220055183	balapani@subaplastics.com	-
3	Yazaki India Pvt. Ltd.,	Mr. Mahesh Jadhav	AGM – HR & Admin.	Gat No. 93, Survey NO. 166, High Cliff Industrial Estate, Wagholi – Rahu road, Kesnand, Pune – 412 207	7066046519	Mahesh.jadhav@in.yazaki.com	-
4	Kachnar Polymers Pvt. Ltd.,	Mr. Rishi Chouksey	HR	Plot 18/1-2, Village Kheri, Katangi Main Road, Beside State Bank of India, Belkhadu Branch, Tehsil Panagar, Dist., Jabalpur, Madhya Pradesh	7772839051	kachnarpolymers@gmail.com	-
5	Zazen Industries	Mr. Prateek Jain	Proprietor	265, Durgesh Vihar, Near Minal Residency, Behind Surjit Hyundayi Showroom, JK Road, Bhopal – 462 023, Madhya Pradesh	9630496303	zazenindustries@rediffmail.com	-

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024-25	2000	1700	350	300	-	-
2025-26	2000	1700	370	310	-	-
2026-27	2500	1800	430	360	-	-

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
1.0	2021-22	1421	1421	1421	1210	227	227	227	185	-	-	-	-
1.0	2022-23	2845	2845	2845	2389	375	375	375	306	-	-	-	-
1.0	2023-24	2091	2091	2091	1735	292	292	292	239	-	-	-	-

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. CSR Scheme
2. PM-DAKSH Scheme
3. NSSH Scheme
4. PMKVY

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☒ Digital Content ☒ Qualification Handbook ☐ Any Other:

Languages in which Content is available: English & Hindi

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	Showing Practical Demonstrations to the learners		
4	Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	Tutorials/ Assignments/ Drill/ Practice		
6	Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/ Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
1. CPC/N0214 Understand basic concept, job requirements and basics knowhow related to the process	AO1. To interact with the operator in order to understand the production schedule	3	2		
	AO2. To help in planning the day's production activities based on the operator's instructions	3	2		
	AO3. To ensure availability of consumables and plastics materials for production in sufficient quantity as per production plan/supervisor instructions.	3	2		
	AO4. Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors.	2	2		
	AO5. Check availability of the personal protective equipment (PPE) like Gloves, Goggles etc.	2	2		
	AO6. Understand the molding procedure and process to be adopted for completing the work order from the supervisor by referring to the Work Instruction document/ SOP manual.	2	2		
	AO7. Ensure that the required material is procured from the store before starting the process	2	2		
	AO8. Understand the Mould required for executing the required operation and ensure that the same is available for operation.	2	2		
	AO9. Collect the mould from the tool room If mould is not available.	2	2		
	AO10. Install and bolt the mould in place and slide the safety door shut.	2	2		
	AO11. Add the raw material in the machine using a material loader or by manual feeding.	2	2		
	AO12. Ensure moulds are clean if not clean with soft cotton cloth.	2	2		
	AO13. Ensure cleaning of the other auxiliaries tools, (if any) before the initiation of the moulding and trimming process	2.5	2		
	AO14. Ensure cleaning of the area around the apparatus for any oil, grease, combustible substances etc. so as to prevent any accident	2.5	1		
	AO15. Ensure availability of the coolant and working of valves to circulate the coolant to cool and solidify plastic	2.5	1		
	AO16. Understand the raw material like plastics granules, fillers, bonding additives etc. required for executing the activity	1.5	2		

	AO17. Refer the queries to supervisor if they cannot be resolved by the operator	1.5	2		
	AO18. Confirm self - understanding to the supervisor once the query is resolved so that all doubts & queries can be resolved before the actual process execution	1.5	2		
	Sub total	38	24		
2. CPC/N0221 Perform the Injection molding related operations, monitor process parameters and troubleshoot the process/product if any	AO1. Check for operation of molding apparatus like hopper, heaters etc. as per the checklist provided	10	15		
	AO2. Fix the desired Mould to the injection moulding machine in order to achieve the desired operation as per the Work Instructions/ SOPs	5	15		
	AO3. Make modifications in the process parameters (by selecting the right program from the machine control system) if required and ensure alignment with the prescribed standards	5	15		
	AO4. Perform preheating of plastic granules (In case of Engineering plastics)	5	15		
	AO5. Ensure that the plastic granules are mixed with additives (if any) before being fed into the hopper	5	15		
	AO6. Conduct a test process and produce a sample output as per the required	5	10		
	AO7. Ensure that the dimensions of the output product are measured as per the process given in the Work Instructions/ SOP under guidance of the operator.	10	20		
	AO8. In case the test product matches the dimensions and quality of the final output, start the production process	5	15		
	AO9. Feed the required operation code in the apparatus for heaters to melt the plastic granules at the predefined temperature	5	20		
	AO10. Enter moulding temperature, volume of plastic and weight settings in the machine as per data sheet	5	20		
	AO11. Enter machine and process parameters such as moulding pressure and time as per the data sheet	5	20		
	AO12. Add master batch and regrind raw material as per standard composition and mix it well	5	20		
	AO13. Check-list procedure to ensure quality of final product	8	15		
	AO11. Enter machine and process parameters such as moulding pressure and time as per the data sheet	8	14		
	Sub total	86	229		
3. CPC/N0222 Conduct quality checks and	AO1. Compare texture, colour, surface properties, hardness and strength etc. with the given approved product.	4	10		
		3	10		

inspection of the finished products with reference to the approved product.	AO2. Rectify minor defects like dimension variation, thickness variation etc. by controlling process parameters etc and informing operators.				
	AO3. Provide first and last output from each batch to the lab for quality check on its composition, properties etc.	3	10		
	AO4. Obtain clearance for the entire batch from the lab and submit the operator.	3	10		
	AO5. Establish linkage between rejection of output and the pertinent causes for the same (process/ material etc.); Recommend the means for rejection control.	3	8		
	AO6. Rectify minor defects like dimension variation, thickness variation etc. by control process parameters etc.	3	8		
	AO7. Escalate all issues related to change in surface properties, Tensile strength etc. so that the manufacturing equipment can be reset to achieve the specified output.	3	10		
	AO8. Provide first and last output from each batch to the lab for quality check on its composition, properties etc.	2	5		
	AO9. Obtain clearance for the entire batch from the lab	2	4		
	Sub total	26	75		
4. CPC/N0411 Maintain basic health and safety practices at the workplace, 5S	AO1. Wear protective clothing/equipment for specific tasks and work conditions	0.5	2		
	AO2. Carry out safe working practices while dealing with hazards to ensure the safety of self and others.	0.5	2		
	AO3. Apply good housekeeping practices at all times	0.5	2		
	AO4. Use the various appropriate fire extinguishers on different types of fires correctly	0.5	2		
	AO5. Demonstrate rescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.	0.5	2		
	AO6. Identify activities 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.	0.5	2		
	AO7. 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.	0.5	2		

	AO8. Create awareness amongst others by sharing information on the identified risks.	0.5	2		
	AO9. 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.	0.5	2		
	AO10. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions	0.5	2		
	AO11. Follow the technique of waste disposal and waste storage in the proper bins as per SOP	0.5	1		
	AO12. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places	0.5	1		
	AO13. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions	0.5	1		
	AO14. Ensure that areas of material storage areas are not overflowing	0.5	1		
	AO15. 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				
	AO16. Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	0.5	1		
	AO17. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.	0.5	1		
	AO18. Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	0.5	1		
	AO19. Check that the items in the respective areas have been identified as broken or damaged	0.5	1		
	AO20. Follow the given instructions and check for leveling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same To avoid spillage, leakage, fire etc.	0.5	1		
	AO21. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.	0.5	1		
	Sub total	10	30		
5. CPC/N0223 Entrepreneurship	AO1. Planning and Budgeting with reference to various components of Injection Moulding.	2	0.5		
	AO2. Keep books of accounts and various transactions.	2	0.5		

in Injection moulding	AO3. Arrange for financial assistance from various quarters in the light of various schemes available in setup for Injection Moulding.	2	0.5		
	AO4. Ascertain the prices of various inputs and products from the market.	2	0.5		
	AO5. Assess the influence of various quality parameters of products on the product pricing.	2	1		
	AO6. Establish cordial relations with various clients for the benefit of industry.	2	0.5		
	AO7. Assess the needs and requirements of the clients and assess one's own unique selling proposition.	2	0.5		
	AO8. Extract critical market information that is otherwise not in the public domain.	2	1		
	AO9. Choose appropriate buyer in a given situation of market parameters	2	1		
	AO10. Identify best ways of attracting market price for one's produce	2	1		
	AO11. Ensure quality before and during the sale activity to ensure good returns.	2	1		
	Sub total	22	8		
6. CPC/N0219 Basics of MS Office / Open Source office suite software	AO1. Fill and process mandated forms for receiving, processing, or tracking data enter data from source documents (such as trial report, process sheet etc.) into MS Office / Open Source office suite software.	1	2		
	AO2. Scan source documents in accordance with specific instructions.	1	2		
	AO3. verify data entered with source documents, checks for compliance and corrects all typographical errors and missing or repeated data.	1	2		
	AO4. Maintain files of source documents or other information related to data entered.	1	2		
	AO5. Investigate and confirm data that is unclear before entering, generate reports of data entry, store completed work in designated locations and perform backup operations.	1	2		
	AO6. update database information to reflect most current source information	1	1		
	AO7. assist in the filing and storage of security and back up data files	1	2		
	AO8. respond to requests for information and access relevant files	1	1		
	Sub total	8	14		
	AO1. Discuss the importance of Employability Skills in meeting the job requirements.	1	1		

7. DGT/VSQ/N0101 Employability Skills	AO2. Use appropriate basic English sentences/phrases while speaking, Demonstrate how to communicate in a well - mannered way with others & working with others in a team.	1	1		
	AO3. Discuss the significance of using financial products and services safely and securely. Explain the importance of managing expenses, income, and savings & Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws.	2	2		
	AO4. Discuss the significance of using the internet for browsing, accessing social media platforms, safely and securely.	1	1		
	AO5. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges.	2	2		
	AO6. Differentiate between types of customers & Explain the significance of identifying customer needs and addressing them.	2	2		
	AO7. Create biodata, use various sources to search and apply for jobs & Discuss the significance of dressing up neatly and maintaining hygiene for an interview.	1	1		
	Sub total	10	10		
	Total	260	340		

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:

- Batches are assigned to Training Assessment Wing (TAW), CIPET HO for planning of assessment
- Training Centers request TAW for Assessment and Certification of Trainees
- TAW identifies suitable assessor and nominates the assessor to the respective Training Centre
- TAW monitors the assessment process
- Training Centers maintain necessary records

2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 02 Assessors in a day (or) 01 assessor in 2 days
- Check that the allotted time to the candidates to complete the Theory & Practical Assessment

3. Assessment Quality Assurance levels/Framework:

- Question bank / Question Paper is prepared by the Subject Matter Experts (SME) / Assessor
- Questions are mapped to the specified assessment criteria
- Certified Assessor & Trainer will be engaged in the process

4. Types of evidence or evidence-gathering protocol:

- Date / Time recorded for the reporting of the assessor from assessment location
- Assessment batch - Group Photo of Trainees along with Assessor

5. Method of verification or validation:

- Surprise visit to the assessment location
- Virtual meet with the Assessor / Trainees

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored, soft copies of assessment evidences are stored in Email for future correspondence

On the Job:

1. Each module (which covers the job profile of Machine Operator Injection Moulding) will be assessed during the assessment.
2. The candidate must have adequate knowledge in the relevant module of the OJT.
3. Evidences of OJT:
 - Videos of Trainees during the OJT
 - Photographs of Trainees during the OJT
4. Ensure that the candidate is able to:
 - Effective engagement with the customers
 - Understand the working of various tools and equipment

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS defines the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf