

QUALIFICATION FILE

Revised Application Documentation: Version 1 /24 October, 2016

NSDA Reference

To be added by NSDA

CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Paints and Coatings Skill Council,

105, Kakad Chambers, 132, Dr. Annie Besant Road, Worli, Mumbai – 400 018

Name and contact details of individual dealing with the submission

Name: Mamka Hakim

Position in the organisation: Manager Standards & QA

Address if different from above

Tel number(s)

+91-22-2493-1790

+919619459653

E-mail address

managerquality@pcsc.in

List of documents submitted in support of the Qualifications File

1. Occupation Map
2. RFP for development of National Occupational Standards
3. GC Resolution for formation of NOS Sub-committee and its composition
4. Approval of QP/ NOSs
5. List of companies and Industry associations participated and validated QP/NOS
6. Mapping of Manpower skills in the Paints and Coatings Industry
7. Function Analysis

QUALIFICATION FILE

SUMMARY

Qualification Title and Code:	Extrusion Operator, PCS/Q0602		
Body/bodies which will award the qualification:	Paints and Coatings Skill Council		
Body which will accredit providers to offer the qualification:	Paints and Coatings Skill Council		
Body/bodies which will be responsible for assessment:	Paints and Coatings Skill Council		
Occupation(s) to which the qualification gives access:	<p>Production – Powder Coating</p> <p>The extrusion operator converts the raw materials into flakes after premixing, in line with the process chart, and operating the mill. The individual at work feeds the raw materials for premixing and operates the extrusion machine in order to obtain the flakes, for powder paint manufacturing process, as per company's or customer's specifications working under supervision. The job requires the individual to have: good physical strength, ability to work in paint-redolent environment, attention to details, good eyesight, and superior hand-eye coordination.</p>		
Proposed level of the qualification in the NSQF:	3		
Anticipated volume of training/learning required to complete the qualification:	240 hours.		
Entry requirements / recommendations:	5 th Standard		
Progression from the qualification:	Extrusion Operator, with experience and acquiring additional qualifications can become Production QC In-Charge		
Planned arrangements for RPL:	Will be done at a place where required lab facility is available.		
International comparability where known:	Not established.		
Formal structure of the qualification:			
Title of NOS/unit or other component (include any identification code used)	Mandatory/Optional	Estimated size (learning hours)	Level
PCS/N0602 Pre-mix the raw materials	Mandatory	86	3
PCS/N0603 Operate the extrusion mill	Mandatory	90	3
PCS/N9901 Coordinate with colleagues and/or customers	Mandatory	12	3
PCS/N9902 Maintain standards of product/service quality	Mandatory	22	3
PCS/N9903 Maintain OH&S standards and follow environmental norms	Mandatory	30	3

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack.

Give details of the document here: Qualification pack Annexure 1, Model curriculum Annexure 2

QUALIFICATION FILE

SECTION 1 ASSESSMENT

Body/Bodies which will carry out assessment:

Aspiring Minds, Cindrel, Cocubes, MCG

Will the assessment body be responsible for RPL assessment? Yes

Give details of how RPL assessment for the qualification will be carried out and quality assured.

RPL will be based on the same Qualification Pack and Assessment Criteria mentioned in the QP.

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:

Standardised assessment criteria developed by PCSC.

Selected Assessment bodies have been vetted for capability and robust system/ procedure.

Question bank of Assessment bodies reviewed and vetted by technical experts/ SMEs employed by PCSC.

Assessment to be done only by certified assessors who have undergone ToA program.

To follow tablet based assessments except when this is not possible (example due to poor net access, digital illiteracy).

Video evidence of the assessment.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

Refer page 1 for the list of attachments.

QUALIFICATION FILE

ASSESSMENT EVIDENCE

Complete a grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification on page 1.

Job Role : Extrusion Operator Qualification Pack : PCS/Q0602 Sector Skill Council : Paints and Coatings
<u>Guidelines for Assessment</u> <ol style="list-style-type: none"> Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC. The assessment for the theory part will be based on knowledge bank of questions created by the SSC. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below) Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria To pass the Qualification Pack , every trainee should score a minimum of 60% in every NOS 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.

PCS/N0602 Premix the raw materials					
	Performance Criteria	Total Marks (250)	Out of	Theory	Skills Practical
Understanding the process sheet	PC1. receive the process doc-sheet from the shift in-charge or production supervisor	50	2.5	1	1.5
	PC2. understand the overall process flow		2.5	1	1.5
	PC3. understand the specific instructions pertaining to the premix and extruder operation		2.5	1	1.5
	PC4. assimilate the materials required		2.5	1	1.5
Collecting the requisite raw materials from store	PC5. understand the raw materials resin, hardener, pigment, additive, fillers, etc. required for the batch		2.5	1	1.5
	PC6. understand the location of the above mentioned class of raw materials in the store		2.5	1	1.5
	PC7. weigh the appropriate quantities of the raw materials using the appropriate aids and equipment like scales, gloves, etc		2.5	1	1.5

QUALIFICATION FILE

	PC8. replace the excess raw materials in the appropriate locations		2.5	1	1.5
	PC9. record the details of the raw materials taken for the batch		2.5	1	1.5
Calibrating the mixer	PC10. identify the mixer controls in the equipment control room or chamber		2.5	1	1.5
	PC11. calibrate the mixer by modifying specifications such as temperature, flow, discharge control, etc.		2.5	1	1.5
	PC12. ensure the calibration is in line with the process requirements		2.5	1	1.5
	PC13. ensure the other equipment controls are not modified, once set		2.5	1	1.5
	PC14. notify the shift in-charge or production supervisor about completion of calibration before exiting the equipment control room or chamber		2.5	1	1.5
Pre mixing the raw materials	PC15. take the weighed raw materials like resin, hardener, pigment, additive, fillers, etc		2.5	1	1.5
	PC16. approach the mixer and position appropriately to load the same		2.5	1	1.5
	PC17. load the mixer with the raw materials		2.5	1	1.5
	PC18. ensure that the mixing process is carried out for the requisite time		2.5	1	1.5
	PC19. ensure that the mixed by-product moves to the extruder		2.5	1	1.5
	PC20. halt the mixer after a particular batch, if required		2.5	1	1.5
	POINTS		50	20	30
	TOTAL POINTS		50		

PCS/N0603 Operate the extrusion mill					
	Performance Criteria	Total Marks (250)	Out of	Theory	Skills Practical
Calibrating the extruder	PC1. identify extruder controls in the equipment control room or chamber	50	2.5	1	1.5
	PC2. calibrate the extruder by modifying specifications such as temperature, flow, pressure, etc.		3	1	2
	PC3. ensure the calibration is in line with the process requirements		3	1	2
	PC4. ensure the other equipment controls are not modified, once set		3	1	2
	PC5. notify the shift in-charge or production supervisor about completion of calibration before exiting the equipment		3	1	2

QUALIFICATION FILE

	control room or chamber				
Operating the extruder	PC6. operate the extruder as per standard operating procedure	3	1	2	
	PC7. ensure the flakes are discharged in the discharge crater	3	1	2	
	PC8. ensure the flakes are cooled for the stipulated time	3	1	2	
	PC9. ensure the ground product moves to the next stage, i.e., grinding process in stipulated time and as per specified quality standards	3	1	2	
	PC10. cease the operation once the batch is completed	3	1	2	
Visual tracking of quality of powder paint process	PC11. inspect the overall process flow in order to achieve productivity standards	3	1	2	
	PC12. visually assess the flakes from the extruder to check if they are in line with process requirement	3	1	2	
	PC13. notify the shift in-charge / production supervisor in case of any significant deviation from the process requirements	3	1	2	
Cleaning the extruder	PC14. identify the various parts / chambers of the extruder	3	1	2	
	PC15. understand how the extruder needs to be handled during cleaning	3	1	2	
	PC16. clean the various parts of the extruder like barrel, liner, flow channels, etc.	3	1	2	
	PC17. make the extruder ready in working condition for next batch	2.5	1	1.5	
	POINTS	50	17	33	
	TOTAL POINTS	50			

PCS/N9901 Coordinate with colleagues and/or customers					
	Performance Criteria	Total Marks (250)	Out of	Theory	Skills Practical
Interacting with superior	PC1. receive job order and instructions from reporting superior	50	0.5	0.0	0.5
	PC2. understand the work output requirements, targets, performance indicators and incentives		2.0	0.5	1.5
	PC3. deliver quality work on time and report any anticipated reasons for delays		2.0	0.5	1.5
	PC4. escalate unresolved problems or complaints to the relevant senior		2.0	0.5	1.5
	PC5. communicate maintenance and repair schedule proactively to the superior		2.0	0.5	1.5

QUALIFICATION FILE

	PC6. receive feedback on work standards		1.0	0.0	1.0
	PC7. document the completed work schedule and handover to the superior		2.0	0.5	1.5
Communicating with colleagues	PC8. exhibit trust, support and respect to all the colleagues in the workplace		1.0	0.25	0.75
	PC9. aim to achieve smooth workflow		2.0	0.5	1.5
	PC10. help and assist colleagues with information and knowledge		1.0	0.0	1.0
	PC11. seek assistance from the colleagues when required		1.0	0.25	0.75
	PC12. identify the potential and existing conflicts with the colleagues and resolve		1.0	0.25	0.75
	PC13. pass on essential information to other colleagues on timely basis		1.0	0.0	1.0
	PC14. maintain the etiquette, use polite language, demonstrate responsible and disciplined behaviours to the colleagues		2.0	0.5	1.5
	PC15. interact with colleagues from different functions clearly and effectively on all aspects to carry out the work among the team and understand the nature of their work		1.0	0.25	0.75
	PC16. put team over individual goals and multi task or share work where necessary supporting the colleagues		2.0	0.0	2.0
	PC17. highlight any errors of colleagues, help to rectify and ensure quality output		1.0	0.25	0.75
	PC18. work with cooperation, coordination, communication and collaboration, with shared goals and supporting each other's performance		1.0	0.0	1.0
	Communicating effectively with customers, if required	PC19. ask more questions to the customers and identify their needs		1.0	0.25
PC20. possess strong knowledge on the product, services and market			2.0	0.5	1.5
PC21. brief the customers clearly on potential costs and hazards			1.0	0.25	0.75
PC22. communicate with the customers in a polite, professional and friendly manner			1.0	0.25	0.75
PC23. build effective but impersonal relationship with the customers			0.5	0.25	0.25
PC24. ensure the appropriate language and tone are used with customers			1.0	0.25	0.75
PC25. listen actively and have a two way communication			1.0	0.25	0.75
PC26. be sensitive to the gender, cultural and social differences such as modes of greeting, formality, etc.			1.0	0.25	0.75
PC27. understand the customer expectations correctly and provide the			2.0	0.5	1.5

QUALIFICATION FILE

	appropriate products and services				
	PC28. understand the customer dissatisfaction and address or escalate their complaints effectively		2.0	0.5	1.5
	PC29. maintain a positive, sensible and cooperative manner all time		1.0	0.25	0.75
	PC30. ensure to maintain a proper body language, dress code, gestures and etiquettes towards the customers		1.0	0.25	0.75
	PC31. avoid interrupting the customers while they talk		1.0	0.0	1.0
	PC32. ensure to avoid negative questions and statements to the customers		1.0	0.0	1.0
	PC33. inform the customers on any issues or problems before hand and also on the developments involving them		2.0	0.5	1.5
	PC34. ensure to respond back to the customer immediately for their voice messages, e-mails, apps, etc.		1.0	0.0	1.0
	PC35. develop good rapport with the customers and promote other products and services		2.0	0.5	1.5
	PC36. seek feedback from the customers on their understanding to what was discussed		1.0	0.0	1.0
	PC37. explain the terms and conditions clearly		2.0	0.5	1.5
	POINTS		50	10	40

PCS/N9902 Maintain standards of product/ service quality					
	Performance Criteria	Total Marks (250)	Out of	Theory	Skills Practical
Engaging with superior or customers to understand product/ service quality requirements	PC1. keep in mind the profiles of expected customers	50	2.0	0.5	1.5
	PC2. understand the target customers and their product/ service quality requirements as defined by the company		3.0	0.5	2.5
	PC3. receive superior's/ customer feedback regularly		2.0	0.0	2.0
	PC4. aim to build a good connect with the customers through quality product/ service		2.0	0.5	1.5
	PC5. keep tab on frequent discussions with regular customers on general likes and dislikes in the market, latest trends, customer expectations, etc.		2.0	0.5	1.5
	PC6. receive updates on regular feedbacks from the clients on current service, complaints, and improvements to be made, etc.		2.0	0.5	1.5

QUALIFICATION FILE

	PC7. if necessary, compulsively seek customer rating of product/ service in order to help develop a set of regularly improved procedures		2.0	0.5	1.5
	PC8. demonstrate quality orientation at all level		4.0	1.5	2.5
	PC9. aim to gain their long lasting loyalty through satisfaction		3.0	1.0	2.0
Achieving 100% customer satisfaction for given quality	PC10. ensure 100% customer satisfaction via product/ service quality		3.0	0.5	2.5
	PC11. treat the customers fairly and with due respect		3.0	0.5	2.5
	PC12. focus on executing company's marketing strategies and product development needs		3.0	1.0	2.0
	PC13. focus on enhancing brand value of company by maintaining or enhancing quality standards		3.0	1.0	2.0
Fulfilling customer requirement	PC14. ensure that customer expectations are met		2.0	0.5	1.5
	PC15. learn to read customers' needs and wants		2.0	0.5	1.5
	PC16. willingly accept and implement new and innovative products and services that help improve customer satisfaction		3.0	1.0	2.0
	PC17. communicate feedback of customer to senior, especially, the negative feedback		2.0	0.5	1.5
	PC18. maintain close contact with the customers and focus groups		2.0	0.5	1.5
	PC19. offer promotions to improve product satisfaction level to the customers periodically		3.0	1.0	2.0
	PC20. weigh the cost of fulfilling unscheduled customer requests, consult with senior and advise the customer on alternatives		2.0	0.5	1.5
	POINTS		50	13	37

PCS/N9903 Maintain O&HS standards and follow environmental norms					
	Performance Criteria	Total Marks (250)	Out of	Theory	Skills Practical
Taking precautionary measures to avoid health, safety and environmental	PC1. assess the various health, safety and environmental hazards in the work areas	50	1.5	0.4	1.1
	PC2. take necessary steps to eliminate or minimize the hazards		1.0	0.4	0.6
	PC3. analyze the causes of accidents at the workplace		1.5	0.4	1.1

QUALIFICATION FILE

hazards	PC4. suggest measures to prevent such accidents from taking place	1.5	0.4	1.1
	PC5. take preventive measures to avoid risk of burns and other injury due to contact with hot surfaces, gas, fire, hot fluids/ liquids, etc.	1.5	0.4	1.1
	PC6. suggest methods to improve the existing safety procedures at the workplace	1.5	0.4	1.1
	PC7. dispose waste in the designated areas safely as per company's policies and rules	1.5	0.4	1.1
	PC8. maintain appropriate ventilation in the rooms while there is more exposure to paint vapours	1.0	0.4	0.6
	PC9. avoid dumping unused cans to safeguard the environment	1.0	0.0	1.0
Following standard health, safety and environmental policies and procedure	PC10. be aware of the locations of fire extinguishers, emergency exits, etc.	1.0	0.4	0.6
	PC11. practice correct emergency procedures	1.5	0.4	1.1
	PC12. check and review the storage areas frequently	1.5	0.4	1.1
	PC13. stack items in an organized way and use safe lifting techniques to reduce risk of injuries from handling procedures at the storage areas	1.5	0.4	1.1
	PC14. ensure to be safe while handling materials, tools, acids, chemicals, equipment, etc.	1.0	0.4	0.6
	PC15. store the chemicals and acids in a well-ventilated and locked areas with warning signs displayed	1.5	0.4	1.1
	PC16. ensure safe techniques while moving furniture and fixtures	1.5	0.4	1.1
	PC17. ensure to reduce risk of injury from use of electrical tools	1.5	0.4	1.1
	PC18. read the manufacturer's manual carefully before use of any equipment	1.0	0.0	1.0
	PC19. unplug the electrical equipment before performing maintenance	1.0	0.4	0.6
	PC20. keep the floors free from oil, water and grease to avoid slippery surface	1.0	0.4	0.6
	PC21. use rubber mats in the places where floors are constantly wet	1.0	0.0	1.0
	PC22. ensure safety from injuries of cuts to loss of fingers, while handling sharp hazardous tools and equipment	1.5	0.4	1.1
	PC23. use flat surfaces, secure holding and protective wear while using such sharp tools	1.5	0.4	1.1

QUALIFICATION FILE

	PC24. use health, safety and environmental protection practices for storing, cleaning, and maintaining tools, equipment, and supplies		1.5	0.4	1.1
	PC25. practice ergonomic lifting, bending, or moving equipment and supplies		1.5	0.4	1.1
	PC26. identify the requirement for maintaining environmental norms		1.0	0.4	0.6
	PC27. comply with the environmental safety norms while on work to prevent accidents and health hazards		1.0	0.4	0.6
	PC28. follow company policies and rules regarding use of hazardous materials to avoid health, safety and environmental impacts caused by them		1.0	0.4	0.6
Using safety tools or Personal Protective Equipment	PC29. ensure the employees have access to first aid kit when needed		1.0	0.0	1.0
	PC30. ensure all equipment and tools are stored and maintained properly and safe to use		1.0	0.4	0.6
	PC31. ensure to use personal protective equipment and safety gear such as gloves, mask, headwear, footwear, glasses, goggles, etc. for specific tasks and work conditions where required		1.5	0.4	1.1
	PC32. ensure to display safety signs at places where necessary for people to be cautious		1.5	0.4	1.1
	PC33. ensure electrical precautions such as insulated clothing, adequate equipment insulation, dry work area, switch off the power supply when not required, etc.		1.5	0.4	1.1
	PC34. ensure availability of general health and safety equipment such as fire extinguishers, first aid equipment, safety equipment, clothing, safety installations such as fire exits, exhaust fans, etc.		1.5	0.4	1.1
Achieving health, safety and environmental standards	PC35. document all the first aid treatments, inspections, etc., conducted to keep track of the safety measures undertaken		1.0	0.4	0.6
	PC36. document all the environmental hazards caused and the measures undertaken to comply with the established safety procedures of the workplace		1.0	0.0	1.0
	PC37. report to the supervisor on any problems and hazards identified and any breach of environmental procedures.		1.0	0.4	0.6
	PC38. ensure zero accident at workplace		1.0	0.4	0.6
	PC39. adhere to safety standards and		1.0	0.4	0.6

QUALIFICATION FILE

	ensure no material damage				
	PC40. take necessary action and correct any environmental hazards caused		1.0	0.4	0.6
	POINTS		50	14	36

QUALIFICATION FILE

SECTION 2

SUMMARY EVIDENCE OF LEVEL

Qualification Title and Code : Extrusion Operator PCS/Q0602					
Process required	Professional knowledge	Professional skill	Core skill	Responsibility	Level
Understand the process work or document sheet, collect raw materials, calibrate the mixer, pre-mix the raw material, calibrate and operate extruder and clean the machine.	Knowledge of types and parts of extruder machine, calibrate and operate mixer and extruder, extrusion process and cleaning techniques for the machine.	Practical skills to calibrate operate and clean extruder every time repetitively is a routine skill, following SOP.	Understand the quality requirements and process to be maintained as documented in the process sheet. Communicate quality issues to superiors. Document process calibration and process parameters.	Responsible for feeding raw materials for premixing and operating the extrusion machine in order to obtain the flakes, for powder paint manufacturing process, working under supervision.	3
Level: 3	Level: 3	Level: 3	Level: 3	Level: 3	

QUALIFICATION FILE

SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Information was gathered from industry interactions and data from desk research to arrive at metrics for estimation of current and future employment in the sub-sector and its further break-down for each job role including this one. Please refer to meetings notes and occupation maps. This enabled prioritization of the development of the qualification packs.

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

Information gathered from industry interactions, Occupation Map and Functional Analysis for the skill gap between the industry demand institutional supply - provide the basis for estimated uptake. This is the basis for planning training with the industry and training providers.

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

NSDC QRC has already checked this.

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?

NOS Sub-committee inputs are sought from time-to-time as needed to check the relevance of QP/NOSs, and the revision exercise is undertaken, as needed.

The qualification will be revised or updated on 31st March, 2018

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

Refer page 1 for the list of attachments.

QUALIFICATION FILE

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?

Vertical mobility options are available in the Occupation map. Extrusion Operator, with experience and acquiring additional qualifications can become Production QC In-Charge.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

Occupation Map

Refer page 1 for the list of attachments