

Revised Application Documentation: Version 4 /28 May, 2015

**QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY**

**Name and address of submitting body:**

Food Industry Capacity & Skill Initiative (FICSI)  
Federation House  
1, Tansen Marg  
New Delhi - 110001

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

**Name:** Ms. Mallika Verma

**Position in the organisation:** Chief Executive Officer

**Address if different from above:** Address same as above

**Tel number(s):** 9891272185

**E-mail address:** ceo.ficsi@ficci.com

**List of documents submitted in support of the Qualifications File**

1. Career Map of Baking Technician/Operative - Annexure 1
2. Qualification Pack of Baking Technician/Operative - Annexure 2
3. List of QP/NOS validating companies – Annexure 3
4. NSDC Human Resource and Skill Requirement study – Annexure 4

## QUALIFICATION FILE SUMMARY

<b>Qualification Title</b>	Baking Technician/Operative (FIC/Q5005)		
<b>Body/bodies which will assess candidates</b>	Mettl, Stamp, IQAG, Skills Mantra, Aspiring Mind		
<b>Body/bodies which will award the certificate for the qualification.</b>	Food Industry Capacity & Skill Initiative (FICSI)		
<b>Body which will accredit providers to offer the qualification.</b>	Food Industry Capacity & Skill Initiative (FICSI)		
<b>Occupation(s) to which the qualification gives access</b>	Baking Technician		
<b>Proposed level of the qualification in the NSQF.</b>	Level 4		
<b>Anticipated volume of training/learning required to complete the qualification.</b>	240 hours		
<b>Entry requirements / recommendations.</b>	Preferably after Class X		
<b>Progression from the qualification.</b>	Plant Baker ( Level 5)		
<b>Planned arrangements for RPL.</b>	RPL arrangements and policies are under development.		
<b>International Comparability</b>	Not done as yet.		
<b>Formal structure of the qualification</b>			
<b>Title of unit or other component</b> (include any identification code used)	<b>Mandatory/ Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
FIC/N5017 Prepare and maintain work area and machineries for baking products in the oven	Mandatory	16	4
FIC/N5018 Prepare for baking products in the oven	Mandatory	32	4
FIC/N5019 Bake bakery products in the oven	Mandatory	144	4
FIC/N5020 Complete documentation and record keeping related to baking products in the oven	Mandatory	16	4
FIC/N9001 Food safety, hygiene and sanitation for processing food products	Mandatory	32	Common across levels

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

Give details of the document here:

1. Qualification Pack of Baking Technician/Operative - Annexure 2

## **SECTION 1**

### **ASSESSMENT**

**Name of assessment body:**

**If there will be more than one assessment body for this qualification, give details.**

The assessment bodies include Mettl, Stamp, IQAG and Skills Mantra, Aspiring Mind

**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.

The RPL assessment will be based on the approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack.

**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:**

Assessment will be done through third parties who will be affiliated to FICSI as an Assessment Body. The assessment plan will contain the following information:

- What will be assessed, i.e. the competency based on each NOS
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- Criteria for decision making i.e. those aspects that will guide judgements and
- Where appropriate, any supplementary criteria would be used to make a judgement on the level of performance

The assessment would be conducted through theory, viva voce and practical.

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

Give details of the document(s) here:

## ASSESSMENT EVIDENCE

Complete the following 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.

<b><u>CRITERIA FOR ASSESSMENT OF TRAINEES</u></b>
<b>Job Role:</b> Baking Technician/Operative
<b>Qualification Pack:</b> FIC/Q5005
<b>Sector Skill Council:</b> Food Industry Capacity & Skill Initiative (FICSI)

### **Guidelines for Assessment:**

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

<b>Assessable Outcomes</b>	<b>Assessment Criteria</b>	<b>Total Marks</b>	<b>Out Of</b>	<b>Theory</b>	<b>Skills Practical</b>
<b>1. FIC/N5017 (Prepare and maintain work area and machineries for baking products in the oven)</b>	PC1. Clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests		25	10	15
	PC2. Ensure that the work area is safe and hygienic for food processing		10	3	7
	PC3. Dispose waste materials as per defined SOPs and industry requirements		15	5	10
	PC4. Check the working and performance of all machineries and tools used for production		15	5	10

	PC5. Clean the machineries and tools used with approved sanitizers following specifications and SOPs		15	5	10
	PC6. Place the necessary tools required for the process		5	2	3
	PC7. Attend minor repairs/ faults of machines, if required		15	5	10
		<b>Total</b>	<b>100</b>	<b>35</b>	<b>65</b>
<b>2. FIC/N5018 (Prepare for baking products in the oven)</b>	PC1. Read and understand the production order from the supervisor		10	4	6
	PC2. Plan oven loading sequence by: <ul style="list-style-type: none"> <li>• Grouping products that need to be baked immediately after mixing/creaming</li> <li>• Grouping similar kind of products (e.g.. fermented products such as bread, buns, puff etc.)</li> <li>• Grouping products that require same process parameters like baking temperature, time etc.</li> <li>• Grouping products that require proofing process</li> <li>• Group products that does not impact the quality of the other when baked together</li> <li>• Planning maximum capacity utilization of machineries</li> <li>• Prioritizing urgent orders</li> </ul>		15	5	10
	PC3. Check the working and performance of each equipment required for process, particularly the fuel flow and burner, proofer/ oven, conveyor, control panel, etc.		7.5	2.5	5
	PC4. Calculate the process time for each batch for effective utilization of machineries		7.5	2.5	5
	PC5. Plan to utilize machineries for multiple products without affecting the quality of the		5	2	3

finished products, and to optimize production and saving energy				
PC6. Allot responsibilities/ work to the assistants and helpers		5	2	3
PC7. Refer to the process chart/product flow chart for products baked		5	1	4
PC8. Organize required oven racks/pans		5	1	4
PC9. Arrange required cooling racks		5	1	4
PC10. Prepare the proof box by setting parameters such as temperature, humidity, etc. Prepare and calibrate oven (in case of batch operation) by pre-heating the oven to the specified temperature as per the oven chart		10	4	6
PC11. Prepare and calibrate oven (in case of batch operation) by pre-heating the oven to the specified temperature as per the oven chart		5	2	3
PC12. Prepare the conveyor (in case of continuous operation) by setting the speed of conveyor, baking time, and temperature controls		5	2	3
PC13. Ensure working and performance of equipments by starting equipment(s),and observing gauges to maintain heat according to specifications		5	2	3
PC14. Keep the tools accessible to attend minor repairs/faults in case of breakdown		5	2	3
PC15. Handle emergency situations (e.g.: fire, power failure ) while baking		5	2	3
	<b>Total</b>	<b>100</b>	<b>35</b>	<b>65</b>

<b>3. FIC/N5019 (Bake bakery products in the oven)</b>	PC1. Set the proof box to the required temperature and humidity following the proofing chart, as per specifications and organisation standards		5	2	3
	PC2. Refer to the production chart/proofing chart to understand the loading sequence		3	1	2
	PC3. Load the proof box following the production sequence		5	2	3
	PC4. Monitor proof box parameters such as temperature/humidity		5	2	3
	PC5. Monitor product in the proof box		5	2	3
	PC6. Pull bread at specified heights from proof box		5	2	3
	PC7. Monitor the proof box and product coming out of the proof box		5	2	3
	PC8. Pre-heat the oven to specified temperature and check humidity level (if specified)		4	1	3
	PC9. Refer to the production chart/proofing chart to understand the loading sequence and process parameters for each product baked		3	1	2
	PC10. Set the oven parameters such as baking temperature and time for the product baked		3	1	2
	PC11. Observe filled baking pans (to be loaded in oven) to determine whether pans are filled to standard		3	1	2
	PC12. Load the ovens with filled baking pans and check that the dough pieces are placed corner to corner		2	0.5	1.5
	PC13. Observe spacing between pans as per defined SOPs		2	0.5	1.5

PC14. Monitor and control speed of conveyor to control pans entering oven and to control baking time of various baking product (in continuous operation)		3	1	2
PC15. Monitor oven parameters such as temperature and time during baking process		5	2	3
PC16. Observe colour of the baking product to detect under/ over baking and to achieve finished product of uniform quality		5	2	3
PC17. Unload the oven when the baking process is complete		3	1	2
PC18. Check the quality of the product through sensory parameters such as colour, size, appearance, texture, aroma. etc.		5	2	3
PC19. Unload the pans/trays using proper technique (this must be done immediately after being taken out of the oven to improve the overall shape of the bread)		3	1	2
PC20. Place baked product on the cooling racks and transfer to the cooling room/cooling area		3	1	2
PC21. Remove excess waste from the baking pans		3	1	2
PC22. Stack the emptied baking pans in the designated area		3	1	2
PC23. Ensure that empty pans are stored appropriately to avoid damage and contamination		2	0.5	1.5
PC24. Adjust or reset controls of the oven to load the next batch product		4	1	3
PC25. Report discrepancies/concerns in each stage of production to department supervisor for		3	1	2

	immediate action				
	PC26. Clean the work area, machineries, equipment and tools using recommended cleaning agents and sanitizers		3	1	2
	PC27. Attend minor repairs/faults of all machines (if any)		2	0.5	1.5
	PC28. Ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or following suppliers instructions/manuals		3	1	2
		<b>Total</b>	<b>100</b>	<b>35</b>	<b>65</b>
<b>4. FIC/N5020 (Complete documentation and record keeping related to baking products in the oven)</b>	PC1. Record details of all raw materials handled (dough/batter) and document the raw material details such as raw materials handled, condition and weight of the raw material while receiving, after proofing process, before loading in oven etc., as per company standards.		10	6	4
	PC2. Maintain record of observations (if any) related to raw materials, packaging materials		5	3	2
	PC3. Verify the documents and track them from finished product to raw materials, in case of quality concerns, and during quality management system audit		5	3	2
	PC4. Document production plan with details such as the product details, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment		15	8	7
	PC5. Document process details such as type of raw material used, process parameters (temperature, time etc. as applicable) for entire process handled in process chart or		20	13	7

	production log for all products produced			
	PC6. Document batch size, raw material used, yield after each stage of process, wastage, energy utilization and final products produced	10	6	4
	PC7. Maintain record of observations (if any) or deviations related to process and production	5	3	2
	PC8. Verify documents and track them from finished product to raw material/s	5	3	2
	PC9. Document and maintain records of the types of finished products	5	3	2
	PC10. Document the finished products details such as weight of product, baking time, cooling condition, cooling time, batch number, time of packing, quality parameters (physical parameters), bath number, date of manufacture, date of expiry, other label details etc., as per company standards	10	6	4
	PC11. Maintain record of observations or deviations (if any) related to finished products	5	3	2
	PC12. Verify the documents and track from finished product to raw materials, in case of quality concerns and for quality management system audit	5	3	2
	<b>Total</b>	<b>100</b>	<b>60</b>	<b>40</b>
<b>5. FIC/N9001 (Food safety, hygiene and sanitation for processing food products)</b>	PC1. Comply with food safety and hygiene procedures followed in the organization	5	2	3
	PC2. Ensure personal hygiene by using of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.	6	1	5
	PC3. Ensure hygienic production of food by inspecting raw	5	2	3

materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters			
PC4. Pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations	10	4	6
PC5. Clean, maintain and monitor food processing equipment periodically, using it only for the specified purpose	5	2	3
PC6. Use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required	10	4	6
PC7. Follow housekeeping practices by having designated area for materials/tools	5	2	3
PC8. Follow industry standards such as GMP and HACCP and product recall process	10	4	6
PC9. Attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them	5	1	4
PC10. Identify, document and report problems such as rodents, pests and flies to management	5	1	4
PC11. Conduct workplace checklist audits before and after work to ensure safety and hygiene	5	1	4
PC12. Document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system	4	1	3
PC13. Determine the quality of food using criteria such as aroma,	5	2	3

**100**

	appearance, taste and best before date, and take immediate measures to prevent spoilage			
	PC14. Store raw materials, finished products, allergens separately to prevent cross-contamination	5	2	3
	PC15. Label raw materials and finished products and store them in designated storage areas according to safe food practices	5	2	3
	PC16. Follow stock rotation based on FEFO/ FIFO	10	4	6
	<b>Total</b>	<b>100</b>	<b>35</b>	<b>65</b>

## **SECTION 2**

### **EVIDENCE OF NEED**

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

During the industry interactions carried out while creating occupational maps and prioritization of job roles for Qualification Pack development, the mentioned qualification was indicated as a key requirement by the industry. Governing Council of FICSI shared the final approval for the development of the role.

In addition, the NSDC Human Resource and Skill Requirement study has indicated a strong growth across categories for the bakery segment. The same was also endorsed through 3 workshops with stalwarts from the bread and bakery industry. The workshops included Mr. NL Mehta (Vice President – All India Bread Manufacturers’ Association and Senior General Manager (Franchise) Hindustan Unilever Ltd.), Mr. Ravi Krishna (Past President, Society of Indian Bakers), Mr. Raj Kapoor (ASSOCAM – India) amongst many others. Evidence of the qualification is supported by 32 validations with a balanced representation from across large, medium and small scale industries from across India. The complete list of validating companies has been enclosed as an annexure to the Q file.

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

As per the NSDC Human Resource and Skill Requirement study, the projected size of the Bread and Bakery industry till year 2022 is Rs. 3,646 billion (CAGR of 12.4%). The incremental human resource requirement (annual) in the Bread and Bakery is expected to be 2, 58,000 with demand in the organised sector being 46,000.

The study endorses that a large portion of the incremental requirement in overall Food Processing sector would be from Bread and Bakery sector. The same view has also been shared in the industry workshops and interactions with participation from stalwarts in the bread and bakery industry.

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

The qualification discussed above is checked for any duplication across sectors. Given the qualification is niche to Food Processing sector, there is no duplication or pre-existing similar qualifications.

#### **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?**

The comments, feedback and suggestions were collected through interaction with industry during December '14 to June'15. The same will be compiled and justifiable changes will be incorporated in the next/updated version of the QP. This QP is set to be revised post 2<sup>nd</sup> July, 2016.

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

Give details of the document(s) here:

- List of QP/NOS validating companies – Annexure 3
- NSDC Human Resource and Skill Requirement study – Annexure 4

### SECTION 3

#### SUMMARY EVIDENCE OF LEVEL

Level of qualification: Level 4

Summary of Direct Evidence (from learning outcomes):

The job activities are exhaustively studied and their outcomes are evaluated to understand their mapping with the NSQF framework. The same had been reviewed and validated by sector skill council and industry representatives.

Summary of other evidence (if used):

Baking Technician - QP FIC/Q 5005					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
The job holder is expected to bake products as per defined SOPs and operate ovens in synchronisation with proof box/ rest of the plant/ unit. The job holder is required to prioritize urgent orders, plan maximum capacity utilization of machineries, calculate process time for each time. This involves working in familiar, predictable, routine, situation of clear choice. Hence, it qualifies as a Level 4 role. Since it does not involve	The job holder is expected to have factual knowledge of field of knowledge or study. For example, the job holder is expected to have knowledge of fuels and oven heating systems. S/he needs to know types of raw materials (dough/batter) used in various baked products, types of oven baking process- continuous and batch baking, various types of oven used for baking and ovens used in the organisation,	The job holder is expected to carry out routine and repetitive activities in a narrow range of application, using appropriate rule and tool. For instance, the job holder needs to know and understand the types of oven baking processes, take care of proofing when baking ( in case of bread preparation), baking in the oven and carrying out post production cleaning and regular maintenance of equipments. All these	The job holder is expected to communicate with clarity, have basic arithmetic skills and a basic understanding of political and natural environment. For instance, s/he should be able to note raw materials used for production and their details such as condition and weight of raw material while receiving and after proofing etc, observations related to the process from raw materials to the finished products stage, discuss schedules and	The job holder is responsible for only own work and learning. S/he is a skilled worker who carries out activities after reading and understanding the production order, checking working and performance of equipment, referring to the process chart/ product flow chart for product(s) baked and carrying out the baking process as per defined SOPs. Hence, this role qualifies for Level 4. It does not comprise of any supervisory	4

several choices to be made even in a familiar context, the role does not qualify for Level 5.	handling all types of ovens, oven operation (continuous/ batch) and proof box. Hence, this role qualifies for Level 4.	activities are mostly repetitive and have a narrow range of application, hence qualifying the role for a Level 4.	activities and effectively communicate with team members.	activities.	
Level 4	Level 4	Level 4	Level 4	Level 4	Level 4

## SECTION 4

### EVIDENCE OF RECOGNITION OR 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?

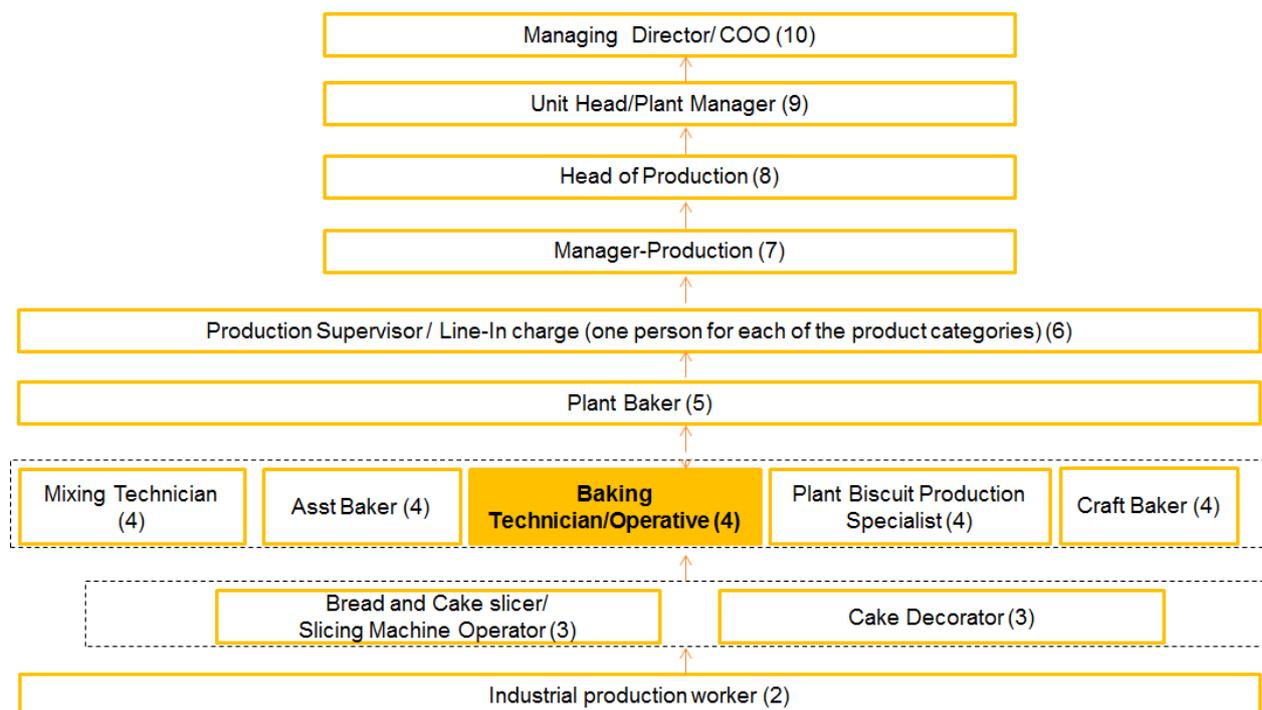
1. Discussing the growth trajectory within each occupation after studying organisational charts of various industry players across small, medium and large scale organizations.
2. Exploring various lateral career opportunities for the discussed qualification
3. Ensuring that there is a clear role up in terms of performance criteria qualification experience and skill requirement from lower NSQF Level to higher levels in the hierarchy.

Please refer to the career path as per Annexure 1 which clearly defines the career path.

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

Give details of the document(s) here:

#### Annexure 1: Career Map of Baking Technician/Operative



Annexure 2: Qualification Pack of Baking Technician/Operative (separate file)

Annexure 3: List of QP/NOS validating companies (separate file)