

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

NSDA Reference

To be added by NSDA

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitted-

HCSSC,
Handicrafts and Carpet Sector Skill Council,
EPCH House,
Pocket 6 & 7, Sector C,
Vasant Kunj,
New Delhi-110070

Name and contact details of individual dealing with the submission

Name: Ms. Anupama Giri

Position in the organisation: CEO

Address if different from above: NO

Tel number(s); 011-2613983491

E-mail address: ceo@hcssc.in

List of documents submitted in support of the Qualifications File

1. Qualification Pack
2. Minutes of the meeting of GC Consultation meeting
3. NSDC Human Resource & Skills Requirement in Handloom & Handicraft Sector
4. List of QP/NOS validating companies

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SUMMARY

Qualification Title-	Casting Operator (Metal ware) HCS/Q2801
Qualification Code-	HCS/Q2801
Nature and purpose of the qualification-	Qualification pack, To get people employed in metal ware industry
Body/bodies which will award the qualification-	Handicrafts and carpet sector skill council(HCSSC)
Body which will accredit providers to offer courses leading to the qualification-	Handicrafts and carpet sector skill council(HCSSC)
Body/bodies which will carry out assessment of learners-	Handicrafts and carpet sector skill council(HCSSC)
Occupation(s) to which the qualification gives access-	Metal Casting and Stamping
Licensing requirements-	N/A
Level of the qualification in the NSQF-	4
Anticipated volume of training/learning required to complete the qualification-	270
Entry requirements and/or recommendations-	5 th class
Progression from the qualification-	Shift in charge / Production in charge
Planned arrangements for the Recognition of Prior learning (RPL)-	A 3-day RPL program has been devised to certify the trainees.
Date of planned review of the qualification-	2018

Formal structure of the qualification

Title of component & identification code	Mandatory/optional	Estimated size(learning hours)	level
HCS/N2801 Perform pre casting requirements	Mandatory	60	4
HCS/N2802 Cast the metal surface	Mandatory	60	4
HCS/N9901 Coordinate with colleagues and work as a team	Mandatory	30	4
HCS/N9902 Maintain safe work environment	Mandatory	30	4
HCS/N9903 Maintain personal health	Mandatory	30	4
HCS/N9904 Basic business management	Mandatory	60	4

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

Qualification Pack attached in annexure.

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SECTION 1 ASSESSMENT

Body/Bodies which will carry out assessment:-

The assessment bodies affiliated to the Handicrafts & Carpet Sector Skill Council will carry out the assessment.

How will RPL assessment be managed and who will carry it out?-

RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack. The process of RPL assessment is going to be managed by the Assessment agency affiliated by the HCSSC.

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

The assessment is managed by the assessment agency using the question bank approved by the sector skill council which has both the theory and practical questions ,the questions are then divided into many different sets so that all students don't get the same questions once the assessment is done the result is compiled and sent to the sector skill council .The NSQF level 2 and 3 qualifications has a passing marks of 50% and NSQF level 4 and above has 70% as passing marks.

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role : Casting Operator (Metalware)

Qualification Pack : HCS/Q2801

Sector Skill Council : Handicrafts & Carpet Sector Skill Council

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also 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.

Assessable Outcomes	Assessment Criteria	Total Marks (600)	Out Of	Theory	Skills Practical
HCS/N2801 Perform pre casting requirements	PC1. receive work instruction from the supervisor	100	8	4	4
	PC2. understand the job sheet and the casting method		8	4	4
	PC3. plan the target on number of pieces to be completed		8	4	4
	PC4. select the appropriate tool and machine for casting such as coal, course blade, crucible, furnace, refrigerator bricks		9	4	5
	PC5. arrange for the furnace preparation		9	4	5
	PC6. collect and arrange the materials to begin the process		8	4	4
	PC7. report on any shortage or defect of raw materials to the concerned person		8	4	4
	PC8. ensure to stock the required materials in advance		8	4	4
	PC9. collect the metal product to be casted		8	4	4
	PC10. check for the working condition of the casting machine in case if using the machine		8	4	4

	PC11. understand the operation of the machine for do's and dont's		9	4	5
	PC12. set the machine to begin the process		9	4	5
		Total	100	48	52
HCS/N2802 Cast the metal surface	PC1. decide on the type of mold to be prepared, if closed mold or open mold	100	3	1	2
	PC2. ensure to use the appropriate tools for molding		3	1	2
	PC3. clean the surface before beginning to mold		3	1	2
	PC4. prepare the pattern in the form of a model using the appropriate materials		3	1	2
	PC5. prepare the mold by holding around a pattern within a supporting metal frame		4	1	3
	PC6. remove the pattern leaving the mold cavity with cores		4	1	3
	PC7. ensure the mold is prepared to the required shape		3	1	2
	PC8. decide on the type of casting to be performed from expendable, permanent mold casting, sand casting, investment casting, etc.		3	1	2
	PC9. prepare the molten metal melting a solid metal		3	1	2
	PC10. determine the size of the furnace		3	1	2
	PC11. heat this solid metal placed in coal to an appropriate temperature in a suitable furnace for required time		4	1	3
	PC12. monitor the furnace constantly to avoid defects at later stage		3	1	2
	PC13. open the furnace and check for completion		3	1	2
	PC14. pour the molten metal into the mold at the right temperature manually		4	1	3
	PC15. ensure not to leak while pouring		3	1	2
	PC16. ensure minimal accidents while handling molten metal		3	1	2
	PC17. allow this to solidify and cool to room temperature		3	1	2
	PC18. take the metal out of the mold, trim and bring to the desired shape		3	1	2
	PC19. ensure to set the appropriate temperature and duration setting to the machine for operation as per specifications		3	1	2
	PC20. ensure to weigh the correct amount of lubricants to be used		3	1	2
	PC21. remove any dirt, sand, excess metal etc. from the casting		3	1	2
	PC22. clean the surface of the cast and improve its appearance		3	1	2

	PC23. check the metal after casting, if it matches requirement		3	1	2
	PC24. make necessary adjustments if any		3	1	2
	PC25. rectify and rework if any mistakes are found un-matching the design specifications and requirements		3	1	2
	PC26. melt and recast product returned from QC		3	1	2
	PC27. ensure general maintenance of the machine		3	1	2
	PC28. ensure no shut down of machines due to improper maintenance		3	1	2
	PC29. perform regular cleaning process as prescribed by manufacturer		3	1	2
	PC30. ensure casting process performed is as per requirement		3	1	2
	PC31. ensure the target number of pieces are casted		3	1	2
	PC32. ensure the output delivered is defect free and hazard free		3	1	2
		Total	100	32	68
HCS/N9901 Coordinate with colleagues and work as a team	PC1. receive job order and instructions from reporting supervisor	100	4	3	1
	PC2. understand the work output requirements, targets, performance indicators and incentives		5	4	1
	PC3. deliver quality work on time and report any anticipated reasons for delays		5	1	4
	PC4. report on any grievances, production defects and any potential hazards		4	2	2
	PC5. communicate on process flow improvements		4	2	2
	PC6. communicate maintenance and repair schedule proactively to the supervisor		4	1	3
	PC7. receive feedback on work standards		4	2	2
	PC8. interact and clarify doubts on design, usage of materials & tools, quality & standards compliance, etc		5	2	3
	PC9. report in time for shortage or need of raw materials		4	1	3
	PC10. handover completed work to supervisor		4	2	2
	PC11. communicate to the colleagues from within and other departments, clearly and effectively on all aspects to carry out the work among the team		5	2	3
	PC12. maintain the etiquettes, use polite language, demonstrate responsible and disciplined behaviours to the colleagues		5	2	3
	PC13. interact with colleagues from different functions and understand the nature of their work		4	2	2

	PC14. put team over individual goals and multi task or share work where necessary supporting the colleagues		4	2	2
	PC15. resolve conflicts and ensure smooth workflow		4	1	3
	PC16. interact and understand the production requirement for the day from the previous and successive processing department and work accordingly		4	1	3
	PC17. communicate and discuss work flow related difficulties in order to find solutions with mutual agreement		4	1	3
	PC18. receive feedback from Quality Control and rework in order to complete work on time		5	1	4
	PC19. share information with colleagues to enable efficient delivery of work		6	3	3
	PC20. highlight any errors of colleagues, help to rectify and ensure quality output		4	2	2
	PC21. work with cooperation, coordination, communication and collaboration, with shared goals and supporting each others performance		4	1	3
	PC22. document all the details accurately relating to one's role as required		4	1	3
	PC23. report on the work completed and keep it in records		4	1	3
		Total	100	40	60
HCS/N9902 Maintain safe work environment	PC1. comply with safety procedures while on work to prevent accidents	100	8	2	6
	PC2. take adequate safety measures while handling materials, chemicals and tools		8	2	6
	PC3. wear appropriate personal protective gears such as gloves, protective goggles, masks etc. while working		8	2	6
	PC4. undertake basic safety checks before operation of all tools and electrical equipments		9	2	7
	PC5. wear appropriate and recommended clothing as per the work environment (eg: working in a furnace area)		9	2	7
	PC6. follow recommended material handling procedure to control material and personal damage		8	2	6
	PC7. perform all procedures as per company's work instructions for controlling operational risk		8	4	4
	PC8. perform the duties in a manner which minimizes environmental damage		6	2	4
	PC9. dispose of waste safely and correctly in a designated area as per company's SOP		8	2	6

	PC10. report any accidents, incidents or problems without delay to the supervisor and take necessary immediate action to reduce further danger		8	4	4
	PC11. ensure zero accident at workplace		10	2	8
	PC12. adhere to safety standards and ensure no material damage		10	2	8
		Total	100	28	72
HCS/N9903 Maintain personal health	PC1. always cover the mouth and nose with a dust mask while working and keep on changing when it gets blocked with dust	100	12	4	8
	PC2. follow work instructions strictly to reduce the amount of pollution at the work place e.g. wet the rock / craft material before working on it		10	2	8
	PC3. wear protective goggles over eyes and replace them when scratches on it obscure the vision		10	2	8
	PC4. wear gloves as per the materials used for making handicraft to avoid blisters; scratches and cuts		10	2	8
	PC5. undergo preventive health checkups at regular intervals		10	2	8
	PC6. take prompt treatment from the doctor in case of illness		11	3	8
	PC7. follow SOPs for dealing with blisters; scratches; accidental fires or any other type of emergencies at work		11	4	7
	PC8. ensure no productivity loss or absenteeism from work due to illness		13	3	10
	PC9. ensure no long term ill effect on the personal health		13	3	10
		Total	100	25	75
HCS/N9904 Basic business management	PC1. allot work to the employees of the unit according to their skill and experience	100	3	1	2
	PC2. train the employees of his/her unit with the appropriate skills required to make market relevant and quality products		3	1	2
	PC3. motivate the employees		2	1	1
	PC4. handle the grievances/issues that are raised by the employees		2	1	1
	PC5. manage the employee expectations		2	1	1
	PC6. gather and analyse the cues from the market		2	1	1
	PC7. ascertain the customer preference		3	1	2
	PC8. create product lines based on current market preference		3	1	2
	PC9. create product lines that are unique and able to price high		3	1	2

PC10. price the products according to market trends	3	1	2
PC11. decide the best way to market the product lines	3	1	2
PC12. make a list of raw materials required according to the product lines	2	0	2
PC13. ascertain the quantity and right price to procure the materials	3	1	2
PC14. identify the right locations/agents from where the raw materials can be procured	3	1	2
PC15. negotiate to get the best price	3	0	3
PC16. ensure quality materials are procured	4	1	3
PC17. ensure the procured materials are stored in appropriate conditions	3	1	2
PC18. maintain the bills and record the prices of procurement for future reference	3	1	2
PC19. maintain healthy vendor relationships	3	1	2
PC20. identify the nearest market	3	1	2
PC21. analyze the prevalent price for product lines	3	2	1
PC22. decide on the most effective means to access the market	2	1	1
PC23. plan for cost effective transportation to the market	3	1	2
PC24. position the product according to market requirements	3	1	2
PC25. manage customer expectations	2	0	2
PC26. analyze and ascertain the cost of production	3	1	2
PC27. maintain the book of accounts related to the business	3	1	2
PC28. own and operate a bank account	4	2	2
PC29. identify cost effective means of running business	3	1	2
PC30. identify various aspects of business that require recording	3	2	1
PC31. create formats for recording	3	2	1
PC32. make various records pertaining to all aspects of business	3	2	1
PC33. maintain these records with periodic updation	3	2	1
PC34. maintain necessary documents as per local government and regulatory requirement	3	2	1
PC35. analyze the records and glean various trends from the same	3	2	1
Total	100	40	60

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Evidence of level

Title/Name of qualification/component: Casting operator		Level: 4	
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	<p>The incumbent works in familiar and predictable routine of casting in metal ware manufacturing. The situation of clear choice (descriptor of level 4) is evident through the following examples</p> <ul style="list-style-type: none"> • select the appropriate tool and machine for casting such as coal, course blade, crucible, furnace, refrigerator bricks • decide on the type of mould to be prepared, if closed mould or open mould 	<p>This is not of level 5 which requires clear choice of procedures, as here the procedure is standardised by the direction of the supervisor</p> <p>Example:</p> <ul style="list-style-type: none"> • receive work instruction from the supervisor • understand the job sheet and the casting method 	4

Professional knowledge	<p>The incumbent has factual knowledge of field of knowledge or study which is in this case includes casting operations and metal ware manufacturing moulding</p> <p>Examples:</p> <ul style="list-style-type: none"> • metal craft details • metal making process and types of products • various kinds of raw materials involved in the process • different kinds of casting methods to be used based on the requirement • cast machine use and maintenance • furnace preparation and operation 	<p>This is not level 5 as there is a requirement of principles and general concepts at level 5 which is not required here. Also not level 3 as this level as outlined above requires factual knowledge of field of study and not mere basic facts, process and Principle knowledge of trade of employment.</p>	4
Professional skill	<p>Most of the work involves recall and demonstration of practical skill, is routine and repetitive and in a narrow range of application. The incumbent also uses appropriate rule and tool and quality concepts to complete their work. This is evident through:</p> <ul style="list-style-type: none"> • select the appropriate tool and machine for casting such as coal, course blade, crucible, furnace, refrigerator bricks • ensure to use the appropriate tools for moulding • pour the molten metal into the mould at the right temperature manually • monitor the furnace constantly to avoid defects at later stage • open the furnace and check for completion 	<p>This is not level 5 as ranges of methods for problem solving are not required. Not level 3 as there is independent work and not mere assisting, at the same time there are variables involved</p>	

Core skill	<p>The incumbent needs language to communicate written or oral, with required clarity, to interact with customers, various departments, supervisors, personnel and teams, confirm requirements and communicate the same for shared understanding. Also prepare a range of routine documentation.</p> <p>Examples: interact with team members to work efficiently communicate effectively with supervisor communicate to the colleagues from within and other departments, clearly and effectively on all aspects to carry out the work among the team maintain the etiquettes, use polite language, demonstrate responsible and disciplined behaviours to the colleagues</p> <p>The incumbent also needs skill pertaining to basic arithmetic and algebraic principles, for calculating various quantities and parameters, etc.</p> <p>For example: how to plan for daily production how to plan for budget and material requirement understand the job sheet and the casting method</p>	The incumbent needs language to communicate written or oral, with required clarity, to interact with customers, various departments, supervisors, personnel and teams.	4
Responsibility	<p>Check for the working condition of the casting machine in case if using the machine.</p> <ul style="list-style-type: none"> • understand the operation of the machine for do's and dont's • set the machine to begin the process 	The incumbent works with responsibility for own work and learning, which is evident from the incumbent's deliverables and also there is no responsibility for the learning of others therefore this is not level 5.	4

	<ul style="list-style-type: none">• interact with colleagues from different functions and understand the nature of their work communicate and discuss work flow related difficulties in order to find solutions with mutual agreement		
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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

While collecting data from the companies for the occupational map, we also took feedback from industry, which was collected with respect to roles for which qualification packs development, was to be prioritized. This was largely based on volume of people required, quantitative and qualitative shortfall which the Industry feels they face. Governing council of HCSSC gave final approval and endorsement for the same.

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

- It is estimated that currently 37,500 casting operators are engaged; of which the estimated uptake would be 26,250 of this qualification.
- The numbers have been estimated based on industry consultations, analysis of existing reports such as Skills Gap analysis Reports.

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

NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work.

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?

Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation.

Monitoring of results of assessments

Employer feedback will be sought post-placement

A formal review is scheduled in two year time i.e. 2018

SECTION 4

EVIDENCE OF 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. Horizontal and vertical mobility options have been articulated in occupational map.
2. Vertical: Shift in charge / Production in charge; Horizontal: Furnace Operator.

List of companies validated the QP

Sl.No	Name of the Company	Size of the Company
1	Overcare Markets Pvt Ltd	Medium
2	Visba	Large
3	Globe Exports Corporation	Medium
4	Dewan & Sons	Large
5	Fantasy Exports	Large
6	Akash International	Small
7	Dewan India	Medium
8	Rozy International	Small
9	R.I. Collections	Medium
10	Images Inc.	Small
11	Images Exports	Small
12	KLK International	Medium
13	Sitlax India	Small
14	Lee-Za International	Large
15	Palak International	Medium
16	Paramount Home Collections	Large
17	SAG New Look Home Art Collection	Large

18	Iqbal Paramount Metal Industries	Medium
19	Interseas Metal Finishings	Small
20	Sahar Arts Valley	Medium
21	Global Exports	Small
22	Sealine Collections	Medium
23	Rudraksh International	Medium
24	HAQ Brothers	Large
25	Euro Collection	Small
26	Brassex India	Large
27	Horizon's Collection	Medium
28	Horizon Enterprises	Medium
29	Moradabad Handicrafts Of India	Large
30	Fine Finish Handicrafts	Medium
31	Galaxy Exports	Medium
32	Bansal Impex	Large
33	Artesia Collections	Small
34	ZS Creations	Small
35	Abidsons	Small
36	India Design	Medium
37	Indian Touch	Medium

38	New Design Exports	Small
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