

Revised Application Documentation: Revision made by NSDA_22 May 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Gem & Jewellery Skill Council of India

**Business Facilitation Centre, 3rd Floor
Seepz Special Economic Zone.
Andheri (E). Mumbai 400 096.**

Name and contact details of individual dealing with the submission

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Position in the organisation: Chief Operating Officer

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List of documents submitted in support of the Qualifications File

1. Career Map of Casting Machine Operator - Annexure 1
2. QP G&J/Q 2801– Annexure 2
3. Format for EOI for AA Accreditation from GJSCI - Annexure 3
4. Protocol for Accreditation of Assessment Agencies and Assessment Framework –
Annexure 4
5. Skill gap report for Gem and Jewellery Sector_2008-2022– Annexure 5

QUALIFICATION FILE SECTION 1

SUMMARY

Qualification Title	G&J/Q 2801- Casting Machine Operator
Body/bodies which will assess candidates	<ul style="list-style-type: none"> • Five Elements Business Solutions Pvt.Ltd. • CoCubes Technologies Pvt. Ltd • Cindrel Infotech Private Limited • Skill Training Assessment Management Partners, Ltd. • AssessPeople Services (India) Pvt. Ltd. • Manipal City and Guilds • Induslynk Training Services Pvt. Ltd (Mettl) • Navriti Technologies Pvt. Ltd • The Assessors Guild (TAG) • Aspiring Minds Assessment private Limited • Edu World Consultants Pvt. Ltd
Body/bodies which will award the certificate for the qualification:	Gem & Jewellery Skill Council of India
Body which will accredit providers to offer the qualification.	Gem & Jewellery Skill Council of India
Occupation(s) to which the qualification gives access	Casting
Proposed level of the qualification in the NSQF.	Level – 4
Anticipated volume of training/learning required to complete the qualification.	60 hours
Entry requirements / recommendations.	Preferable Qualification shall be 12 th pass with training
Minimum age	14 Years
Progression from the qualification.	Supervisor- Casting/ QC
Planned arrangements for RPL.	<p>Implementation Mechanism</p> <p>Facilitation</p> <p>The GJSCI has empowered the Training Partners to play the role of facilitation agency. The roles and responsibilities of the facilitation agency will be as follows:</p> <ol style="list-style-type: none"> 1. Survey the market and contact the persons who have acquired the skills of a particular trade in informal/non-formal settings and motivate them for getting their skills/competencies assessed, certified and recognized by a National Level Organization. 2. Alternatively, a person who has acquired skills/competencies in informal/non-formal settings and desires to get his/her skills assessed, certified and recognized by a National Level Organization approaches the Training Partner. 3. Training Partners will explain and assist interested candidates to register and submit the application form along with the required documents.

RPL Implementation Process:

In order to create an awareness about the RPL assessments, GJSCI will put in marketing efforts in targeted regions of the country to invite applications from the persons who desire to get their skills assessed, recognized and certified in relevant trade.

The set of documents along with the application form should be sent to the GJSCI office in the form of scanned copy and hard copy by post or in person by the Training Partner

Group A (Skill based evidence)	i) Proof of work experience/skills/competencies acquired in informal/non-formal settings (Self undertaking)
	ii) Work experience certificate from the employer if any
	iii) Work experience certificate from the local Jeweller's Manufacturer's association
Group B (Literacy based evidence)	iv) Copy of the Educational Qualification certificate, if any
	iv) Self undertaking by the candidate indicating the basic literacy level
The candidate should submit the evidence at least one each from Group A and Group B.	

1. The applications along with the evidence submitted by the candidates will be screened and reviewed by the Training Partner & GJSCI.

2. The eligible candidates will be informed accordingly.

3. The candidates who could not be eligible for RPL assessment, will be informed about the deficiency in the application form and evidence submitted by them to the Training Partner and will be asked to apply again after taking necessary remedial measures.

4. Training Partner will inform the candidates about the assessment centre, date and time for assessment well in advance. Efforts will be made to ensure that the candidate is assessed in his/her work place only.

Eligibility criteria:

1. Any artisan above the age of 18 with a minimum work experience of 6 months can get assessed in the RPL programme.

2. To validate the work experience, we shall need a letter from the local jeweller's association or the employing company certifying his/her experience.

International comparability where known.

Not Done yet

Formal structure of the qualification

Title of unit or other component
(include any identification code used)

Mandatory/

Estimated size

Level

Optional

(learning hours)

G&J/N2801 Operate casting machine	Mandatory	60	4
G&J/N9901 Respect and maintain IPR	Mandatory		4
G&J/N9902 Coordinate with others	Mandatory		4
G&J/N9905 Maintain occupational health and safety	Mandatory		4

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. QP G&J/Q 2801 – Annexure 2

SECTION 1

ASSESSMENT

Body or Bodies which will carry out assessment:

- a) Five Elements Business Solutions Pvt. Ltd.
- b) CoCubes Technologies Pvt. Ltd
- c) Cindrel Infotech Private Limited
- d) Skill Training Assessment Management Partners, Ltd.
- e) AssessPeople Services (India) Pvt. Ltd.
- f) Manipal City and Guilds
- g) Induslynk Training Services Pvt. Ltd (Mettl)
- h) Navriti Technologies Pvt. Ltd
- i) The Assessors Guild (TAG)
- j) Aspiring Minds Assessment private Limited
- k) Edu World Consultants Pvt. Ltd

These assessing agencies have been chosen after thorough scrutiny of the credentials presented in response to the RFP. A set was made of the documents received from the assessment agencies. To check the knowledge of the assessing agencies they were required to set a question bank and were also required to find assessors with minimum 5 years of experience for the specified job roles. The documents were then verified by the assessment manager and cross verified by CEO / COO. Then the set of documents were submitted to the Governing concern for review and approving the assessment agency for the affiliation. The Governing concern reviewed the entire set along with set of question bank and the assessors profile and approved or rejected the same by signing the covering page.

Will the assessment body be responsible for RPL assessment?

Yes the assessment body shall be responsible for RPL assessment.

In RPL, the candidate has acquired the skills and knowledge while working and requires assessment and certification only. RPL is the acknowledgement of skills and knowledge obtained through:

- formal training
- work experience
- life experiences

The focus of RPL is the competence gained from these experiences; not how, when or where the learning occurred.

Process or steps in RPL assessments

1. Offering RPL to potential candidates
2. Providing information to the candidate
3. Self-assessment
4. Evidence collation
5. Assessment and making the decision
6. Feedback to the candidate
7. Documentation of outcomes

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:

- a) The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.
- b) The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency as per the performance and assessment criteria mentioned in the Qualification Packs.
- c) The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement, etc.
- d) The assessments are designed so as to assess maximum parts during the practical hands on work. Duties and responsibility of a Casting machine operator are also assessed. The technical limitations at the training centres are taken care in theory and viva.
- e) The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments.
- f) The assessment agencies are instructed to ideally have assessor with right mix of industry experience, academia and these are detailed in Assessment Agency Protocol
- g) The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to Assessment Framework, competency based assessments, assessors guide etc.
- h) The assessors are provided with assessors guide developed by the Subject Matter Expert of the assessment agency or by Gem & jewellery SSC as per the assessment framework. The assessment guides are developed to ensure the maximum possible consistency / transparency in the assessment by different assessors and elaborate on the following
 1. Qualification Pack Structure
 2. Guidance for the assessor to conduct theory, practical and viva assessments
 3. Guidance for trainees to be given by assessor before the start of the assessments.
 4. Guidance on assessments process, practical brief with steps of operations practical observation checklist Attendance Sheet and mark sheet
 5. Viva guidance for uniformity and consistency across the batch.
 6. Guidance on assessment evidence collection

The assessment results are backed by evidences collected by assessors.

1. The assessor needs to collect a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the in charge /Head of the Training Centre.
2. The assessor needs to verify the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same needs to be mentioned in the attendance sheet. In case of suspicion, the assessor should authenticate and cross verify trainee's credentials in the enrolment form.
3. The assessor needs to take a photograph of all the students along with the centre name/ banner at the back as evidence.
4. The assessor needs to carry a camera to click photograph of the trainees working on the job and giving theory exam as evidence.
5. The assessor also needs to carry a photo ID card.

6. The assessor also needs to take the photographs as evidence from appropriate angles/ sides of the final work piece/job submitted by the trainee.
7. The details on assessment framework are elaborated in Gem & jewellery SSC Protocol for Accreditation of Assessment Agencies and Assessment Framework.

All accredited Assessment Agency follow the “Gem & jewellery SSC Protocol for Accreditation of Assessment Agencies and Assessment Framework”. Each NOS in the Qualification Pack (QP) is assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performance Criteria in the NOS will be assigned marks for or practical based on relative importance, criticality of function and training infrastructure.

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

Give details of the document(s) here:

1. Format for EOI for AA Accreditation from GJSCI - Annexure 3
2. Protocol for Accreditation of Assessment Agencies and Assessment Framework – Annexure 4

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 Casting Machine Operator						
Qualification Pack G&J/Q2801						
Sector Skill Council Gem & Jewellery						
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 centre (as per assessment criteria below)						
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre 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						
			Marks Allocation			
			Total Mark (100)	Out Of	Theory	Skills Practical
1. G&J/N2801	Operate the casting machine	PC1. accurately compute alloy required as per wax tree weight	73	6	1	5
		PC2. proportionately use re-cycled and new gold in the alloy making		6	1	5
		PC3. ensure minimal accidents while handling molten metal		6	1	5
		PC4. mix of all the required materials such as PoP, boric acid and DM water for investment process as per industry standards		7	2	5
		PC5. prepare bubble-free investment of flask		6	1	5
		PC6. constantly monitor furnace temperature for complete burnout cycle duration so that an incomplete process does not lead to casting		6	1	5

	defects				
	PC7. set machine parameters as per machine specifications prescribed for a particular alloy		6	1	5
	PC8. Pour metal at the right temperature in manual pouring mode		6	1	5
	PC9. properly plan casting cycles for the optimum utilisation of machines		3	0	3
	PC10. minimise rework and precious metal loss in the casting process		3	0	3
	PC11. timely deliver casted jewellery pieces to next process		3	0	3
	PC12. Produce number of casted jewellery pieces or precious metal tree as per target deliverable and quality approved by the supervisor		3	0	3
	PC13. produce defect-free casted jewellery pieces		3	0	3
	PC14. ensure minimum damage to the set stones during casting process		3	0	3
	PC15. produce Quality Control okayed cast jewellery piece		3	0	3
	PC16. deliver casted jewellery pieces on time by reporting problems faced or anticipated well in advance		3	0	3
		Total	73	9	64
2. G&J/N9901 Respect and maintain IPR	PC1. be able to spot plagiarism and report	3	1	1	0
	PC2. be aware of patents and IPR		1	1	0
	PC3. not be involved in IPR violations		1	1	0
		Total	3	3	0
3. G&J/N9902 Coordinate with others	PC1. understand the work output requirements	12	4	0	4
	PC2. comply with company policy and rule		1	1	0

	PC3. deliver quality work on time as required by reporting any anticipated reasons for delays		4	0	4
	PC4. put team over individual goals		1	1	0
	PC5. be able to resolve conflicts		1	1	0
	PC6. learn how to multi-task relevant activities		1	1	0
		Total	12	4	8
4. G&J/N9905 Maintain occupational health and safety	PC1. spot and report potential hazards on time	12	1	1	0
	PC2. follow company policy and rules regarding use of hazardous materials		5	1	4
	PC3. attend and actively participate in the health and safety campaigns organised by the company		1	1	0
	PC4. use or wear safety gear as per the rules of the company		5	1	4
		Total	12	4	8

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Please refer to the attached list of job roles and occupations as per the attachment and their career paths as per Annexure 1, which have been derived through extensive industry interactions. 17 Large scale industries, 14 Medium Size industries and 11 small industries were involved in the validation process to make the Qualification Packs viable to the current industry requirements.

List of industries involved in the Validation process for the QP – Casting machine Operator:

S No.	Large scale industries	Medium scale industries	Small scale industries
1.	Mars Jewellery	Kinu Baba Jewellery (India) Pvt Ltd	Padmavati Creations
2.	Shree Raj	Indus jewellery LLP	Madhhuri Gems
3.	Onsaz Jewellery Creation	GIE Gold creations	Gemworth
4.	jaipur Silver Jewels	VNM Jewel Crafts LTD	Ruby Source
5.	Silver Moutain Inc	Jewelsmith (2 letters)	Gaurav Jewellers (2 letters)
6.	Gemco Design	Shan gold	Sara Jewels
7.	Yash Jewels (2 letters)	Rams Jewels (2 Letters)	JFC
8.	Derewala	Sundaram (2 letters)	Mahalaxmi
9.	Thottan exports (2 letters)	Master	Vetrivel links
10.	Bombay Mnuufacturers (2 letters)	Vlmk (2 letters)	Srg Exim
11.	Priority (2 letters)	VSV (2 letters)	Padmavati Creations
12.	Shantivijay	VTC Jewels (2 letters)	
13.	Neysa	Vasantham	
14.	Emerald	Kinu Baba Jewellery (India) Pvt Ltd	
15.	Kama		
16.	St Antonys		
17.	Mars Jewellery		

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

The incremental Manpower Gap between 2013 and 2022 is 78467 under Casting machine Operator. For details of the calculations please Refer to Annexure-5.

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

QPs for Job Roles of various related SSC's were studied to ensure that there is no duplicity

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

The comments, feedback and suggestions were collected through interaction with industry during September'14 to March'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 15th July 2015.

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

Give details of the document(s) here:

1. Skill gap report for Gem & Jewellery sector_2008-2022– Annexure 5

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Summary of Direct Evidence:

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

Generic NOS is/are linked to the overall authority attached to the job role.

Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
A casting machine operator does the routine task of converting wax models to jewellery pieces through investment casting process. He follows a predefined set of procedures and uses similar predictable tools to invest the flask, operate semi to fully-automated machines to pour and regulate the flow of molten precious metal into cavities created by melted wax, to produce cast jewellery pieces on mass scale.	A casting machine operator needs to know about metallurgy (gold alloy properties including malleability), methods of calculating required quantities of alloys, calculating and weighing the correct amount of alloy required as per wax tree and job sheet. Also should know the use of different types of tools, consumables and machines in jewellery casting process, operates different tools and equipments like Investment flasks, Measuring cylinder, Carbon stirring rod, Plaster of Paris (PoP), Slurry mixing equipment, Casting machine and gripper. He should also be able to maintain and repair tools and use different types of tools for different end results and should follow the policies and standards maintained by the company.	This casting machine operator recalls and demonstrates repetitive skills like interpreting the casting instructions and requirements correctly and identifying tools, equipment and procedures required in the process. Also assess gold loss during the casting process so as to deliver jewellery pieces of required weight, identifies and reports problems with faulty equipments to his supervisor, seeks clarification on problems, applies good attention to detail and checks that his work is complete & free of errors. He also spots plagiarism and reports and alert authorities in time of any potential sources of violations	This operator writes clear and short sentences, reads job sheets and interprets details mentioned in the job sheet, reads and understands instructions in terms of output to be delivered and performs basic calculations required in the task. Also does effective and error free communication with seniors and colleagues, builds team coordination, writes grievance complaint application, discusses task, schedules, and work-loads with co-workers and supervisors and helps them as required. Also understands basic banking procedures like account opening, basic banking operations and savings.	This operator is responsible for collecting the wax tree, alloys and consumables from his supervisor, melting the alloys, Investing the flask, executing burnout cycle, melting and casting the precious metal alloy, cleaning the precious metal tree, controlling gold loss and detecting product defects. He is also responsible for ensuring correctness and on time completion of the assigned tasks, reporting problems related to machine faults to his supervisor and maintaining IPR and occupational health and safety.	4
Follows level 4	Follows level 4	Follows level 4	Follows level 4	Follows level 4	Follows level 4

OTHER EVIDENCE OF LEVEL [This need only be filled in where evidence other than primary outcomes was used to allocate a level] (**Optional**)

Summary of other evidence (if used):

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?

Please refer to attached 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:

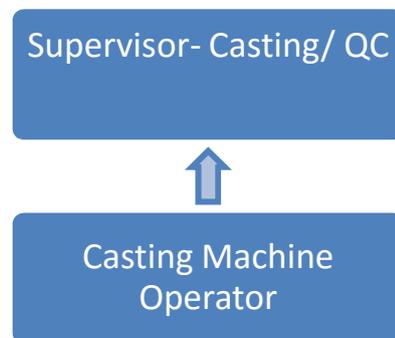
2. Career Path of Casting Machine Operator- Annexure 1
3. QP G&J/Q 2801- Annexure 2

Annexure 1

OM & Career Path

The career progression would be as follows:

1. Casting Machine Operator
2. Supervisor- Casting/ QC



[Annexure 2- QP G&J/ Q 2801](#)

Annexure 3 - Format for EOI for AA Accreditation from GJSCI

Annexure 4- Protocol for Accreditation of Assessment Agencies and Assessment Framework

Annexure 5_Manpower Requirement for Gems & Jewellery Sector for the period 2013-2022