



QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERYINDUSTRY



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Introduction

Qualifications Pack-Metal Setter (Basic)

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Cast and Diamond-Set Jewellery

OCCUPATION: Metal setting

REFERENCE ID: G&J/Q3103

ALIGNED TO: NCO-2004/7313.30

Metal setter (basic): Metal setter is also known as 'Setter' in Indian jewellery making industry. In the cast and diamond-set jewellery manufacturing, metal setting is considered a skilled job.

Brief Job Description: The individual works with numerous hand and machine tools to set diamond and gemstones as per design, and is responsible for delivering: levelled, damage-free and secured setting of stones while maintaining its brilliance.

Personal Attributes: The job requires the individual to have: attention to details; good eyesight; steady hands and ability to work in a process driven team for long hours in sitting position. The individual is expected to have integrity in dealing with precious metal, diamonds and gemstones.

What are Occupational Standards(OS)?

➤ OS describe what individuals need to do, know and understand in order to carry out a particular job role or function

performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Qualifications Pack Code		G&J/Q3103	
Job Role	r	Metal setter (Basic)	
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Sector	Gems &Jewellery	Drafted on	29/05/13
Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	11/07/13
Occupation	Metal Setting	Next review date	15/06/15

Job Role	Metal setter (Basic) Also called Setter	
Role Description	Setting diamonds of different size and shapes in gold and other precious metal jewellery frame as per design; rectifying defects in the casted metal; and minimising damage to gemstones or jewellery	
NVEQF/NVQF level	3	
Minimum Educational Qualifications Maximum Educational Qualifications	Preferably 10 th standard passed	
Training	Not applicable	
Experience	Not applicable	
Applicable National Occupational Standards (NOS)	Compulsory: 1. G&J/N3101 Set diamond and gemstones in precious metal jewellery piece 2. G&J/N9901 Respect and maintain IPR 3. G&J/N9902 Coordinate with others 4. G&J/N9905 Maintain occupational health and safety Optional: Not applicable	
Performance Criteria	As described in the relevant OS units	

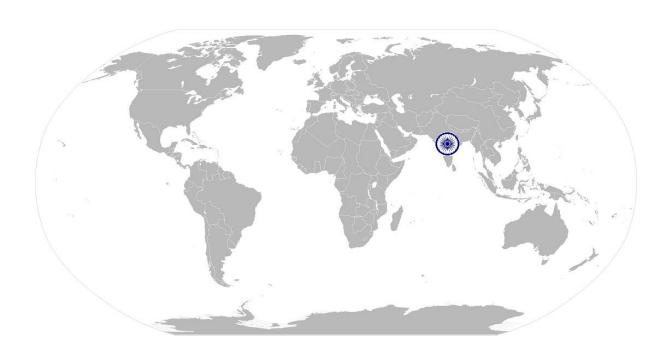






Set diamond and gemstones in precious metal jewellery piece

National Occupational Standard



Overview

This unit represents an important post-casting process of the cast and diamond-set jewellery manufacturing that of placing and fixing diamonds and gemstones into gold or other precious metal jewellery frame by hand. The key outcomes required for metal setting are: to hold a stone securely as well as maintain its brilliance.







G&J/N3101 Set diamond and gemstones in precious metal jewellery piece

Unit Code	G&J/N3101
Unit Title (Task)	Set diamond and gemstones in the precious metal jewellery piece
Description	This unit is about securely setting diamonds and gemstones in the precious metal jewellery frames in a way that enhances brilliance of the stones
Scope	This unit/task covers the following:
	 Collect the job sheet and raw materials understand design specifications and information given in the job sheet in terms of type of jewellery, diamonds and gemstones required and their weight match the size and shape of the diamonds and gemstones received from supervisor against the job sheet assess the type of setting required, e.g., prong, channel, bead, flush, bezel and precut pave as per design of the jewellery and stone shape
	Prepare jewellery frame for setting • set jewellery frame on lac plate or a ring clamp or a holding plate • check the fit and seat the jewellery frame
	Set the stones in the collet use burrs to grind the seat as per design place the stone into the collet press and level the stones with the pusher tighten metal for secure setting of stone file edges to finish the prongs or channel borders as per design file and smoothen edges to avoid snagging to fabric
	Control precious metal loss and damage to stones collect metal dispersed during the day (dust and fragments) report metal losses via documentation as per company policy tally account as per allowed standards for the design conduct regular and controlled environment cleaning for collection of metal dust minimise metal loss below the prescribed limits report any incidents of high precious metal loss suggest improvements in order to reduce precious metal loss handle diamonds and precious stones with care minimise or avoid damage to the diamonds and precious stones wash hands at the specified wash basin as per the company's policy
	 Send jewellery piece for QC ensure finishing of the prongs or channels and surface of the cast jewellery frame as per design ensure levelling of the stone set at the level as per design ensure no diamonds or gemstones are loose rework on any suggested QC correction or setting defects







Gem & Jewellery Skill Council of India	National Occupational Standards Skill Developme Corporation
G&J/N3101 Set	diamond and gemstones in precious metal jewellery piece
	after receiving QC approval, forward metal frame for final polishing
	 Keep the work environment clean and organised keep the work station, machine and tools clean keep all the tools in an organised manner do not litter or spit on work premises
	Report problems to supervisor about: any mismatch in diamond and gemstone sizes and numbers issued to them damage because of mishandling of stone any casting defects such as porosity, blisters, bubbles, cracks, in the frame
Performance Criteria	(PC) w.r.t. the Scope
Element	Performance Criteria
Metal Setting	To be competent, the user/individual on the job must be able to: PC1. place or fix stone as per design requirement PC2. secure stone in a jewellery piece without any defect or damage, with brilliance intact PC3. file edges ensuring smooth surface and utility of wearing
Productivity	To be competent, the user/individual on the job must be able to: PC4. maintain precious metal and stone loss within prescribed limit for the design PC5. complete the number of settings as per the target
Quality of output	To be competent, the user/individual on the job must be able to: PC6. deliver on time, the metal-set jewellery for final polish and plating or for the further processing as per work flow PC7. Accurately level the stones PC8. set the stones firmly PC9. achieve setting finish as per design
Knowledge and Unde	erstanding (K)
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: acceptable limits of precious metal loss, incentives, quality and delivery standards, safety and hazards, integrity and IPR, and personnel management KA2. work flow involved in jewellery manufacturing process of the company KA3. importance of the individual's role in the workflow KA4. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. shape, cut, clarity, carat, weight and physical characteristics of the gemstone or diamond to be set KB2. different types of setting styles such as prong, bezel, bead, channel and precut pave KB3. quality standards required as per design or company policy KB4. matching stones with the design

KB5. layout of the frame and collet







G&J/N3101 Set d	liamond and gemstones in precious metal jewellery piece		
	KB6. uses of different types of tools for different end results		
	KB7. sharpening and repair of tools for the job		
	KB8. potential work hazards, particularly, when using hand and machine tools		
Skills (S) [Optional]			
A. Core Skills/	Basic reading and writing skills		
Generic Skills	The user/ individual on the job needs to know and understand how to: SA1. read and interpret job sheets SA2. read company policies and compliance documents required to complete the work such as security check, timings, and human behaviour		
	Measuring and counting skills		
	The user/individual on the job needs to know and understand how to: SA3. measure diamond and gemstones size by gauge tool or vernier calipers SA4. count the number of the diamond and gemstones		
	Teamwork		
	The user/individual on the job needs to know and understand how to: SA5. share work load as required SA6. interpret the design instructions given by co-worker and supervisor SA7. share knowledge with the co-workers		
B. Professional Skills	Reading design		
	The user/individual on the job needs to know and understand how to: SB1. read design or actual jewellery sample piece and correlate with job sheet in order to achieve secure setting as well as maintain brilliance of stones		
	Using hand and machine tools		
	The user/individual on the job needs to know and understand how to: SB2. work with metals including how to cut, give shape for preparing a seat for setting diamond and/or gemstones SB3. use following key tools for metal setting:		
	• hammers		
	• tweezers		
	screw driverspliers		
	• scribers		
	 broaches and pin punches 		
	center punches		
	hand-held burnishes and scrapers		
	high-speed steel burrs		
	carbide burrs and drills		
	twist drillsburr storage, lubricants and drill gauges		
	mill grain tools		
	prong lifters		
	work holders		







G&J/N3101 Set diamond and gemstones in precious metal jewellery piece

- hand pieces
- flex shaft
- gauges
- magnifiers
- pushers
- SB4. maintain, repair and customise tools
- SB5. work in a safe environment, i.e., without injuries

Reflective thinking

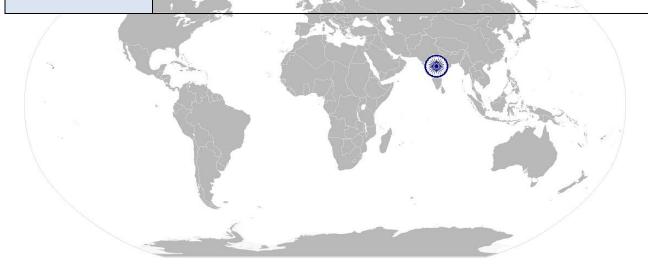
The user/individual on the job needs to know and understand how to:

- SB6. use correct posture while performing the job of the setting
- SB7. place the tools on the work bench for effective work management
- SB8. ensure proper lighting is focussed for performance of the job
- SB9. improve productivity

Critical thinking

The user/individual on the job needs to know and understand how to:

SB10. increase efficiency based on past working experience





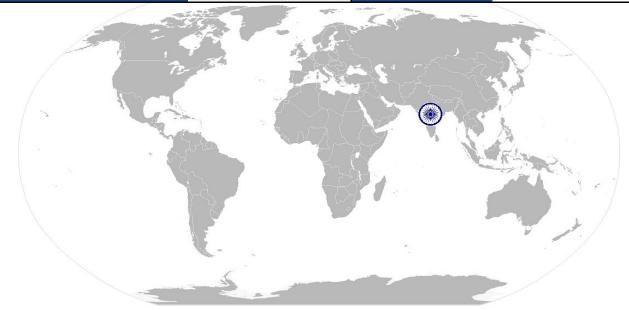




G&J/N3101 Set diamond and gemstones in precious metal jewellery piece

NOS Version Control

NOS Code	G&J/N3101		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	11/07/13
Occupation	Metal setting	Next review date	15/06/15



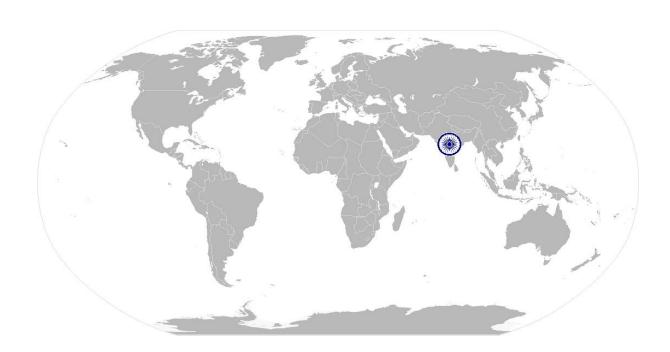






Respect and maintain IPR

National Occupational Standard



Overview

This unit is about respecting intellectual property rights of the company's products and designs and avoiding infringement on IPR of other companies.







Unit Code

Respect and maintain IPR

G&J/N9901

Unit Title (Task)	Maintain IPR of company and respect IPR of other companies		
Description	This OS unit is about protecting company's IPR and avoiding infringement to IPR of other companies		
Scope	This unit/task covers the following: Protect company's Intellectual Property Rights (IPR)		
	 prevent leak of new designs to competitors by reporting on time be aware of any of company's product or design patents report IPR violations observed in the market, to supervisor or company heads 		
	 Avoid infringement to IPR of other companies read copyright clause of the material published on the internet and any other printed material consult supervisor or senior management when in doubt about using publicly 		
	available information report any infringement observed in the company		
Performance Criteria(F	PC) w.r.t. the Scope		
Respecting and Maintaining IPR	Performance Criteria To be competent, the user/individual on the must: PC1. be able to spot plagiarism and report		
	PC2. be aware of patents and IPR PC3. not be involved in IPR violations		
Knowledge and Under			
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on IPR and plagiarism KA2. reporting structure KA3. company's unique product range		
B. Technical Knowledge The user/individual on the job needs to know and understand: KB1. patents and IPR laws KB2. how IPR protection is important for competitiveness of a company			
Skills (S) [Optional]			
A. Core Skills/ Generic Skills	Communication skills The user/ individual on the job needs to know and understand how to: SA1. effectively communicate any observed IPR violations or order leaks		
B. Professional Skills	Decision making The user/individual on the job needs to know and understand how to: SB1. report potential sources of violations		

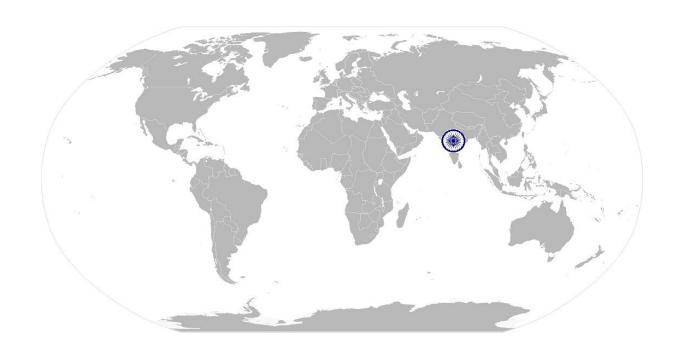






G&J/N9901 Respect and maintain IPR

G&J/N9901	Respect and maintain IPR
	Reflective thinking
	The user/individual on the job needs to know and understand to:
	SB2. learn from past mistakes and report IPR violations on time
	Critical thinking
	The user/individual on the job needs to know and understand how to:
	SB3. spot signs of violations and alert authorities in time





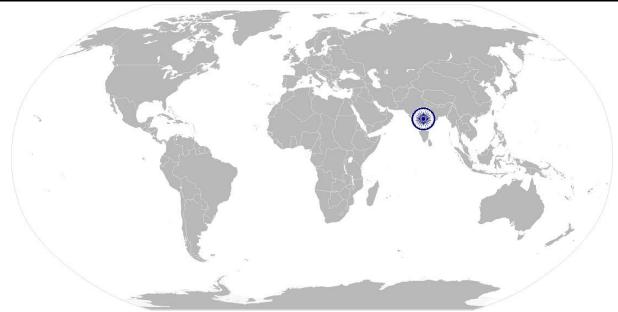




Respect and maintain IPR

NOS Version Control

NOS Code	G&J/N9901		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	11/07/13
		Next review date	15/06/15



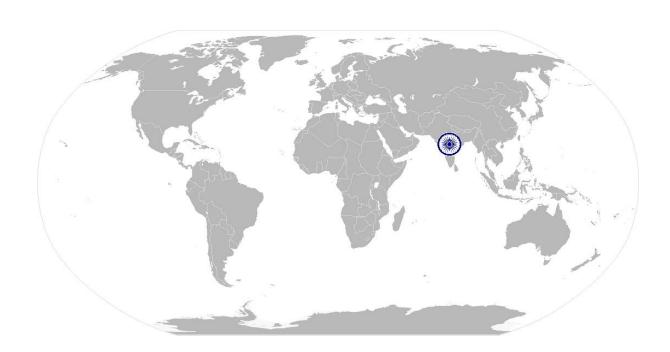






Coordinate with others

National Occupational Standard



Overview

This unit is about team work and level of communication with colleagues or clients. It determines the ability to work as a team member, share work and multi-task in order to achieve the deliverables on schedule.







Coordinate with others

Unit Code	G&J/N9902		
Unit Title (Task)	Interact with colleagues and seniors		
Description	This OS unit is about communicating with colleagues and seniors in order to achieve smooth and hazard-free work flow		
Scope	Interact with supervisor • receive work instructions and raw materials from reporting supervisor • communicate to reporting supervisor about process-flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required • communicate any potential hazards or expected process disruptions • handover completed work to supervisor Interact with colleagues within and outside the department • work as a team with colleagues and share work as per their or own work load and skills • work with colleagues of other departments • communicate an discuss work flow related difficulties in order to find solutions with mutual agreement • receive feedback from QC and rework in order to complete work on time		
Performance Criter	ia(PC) w.r.t. the Scope		
Element	Performance Criteria		
Interaction with	To be competent, the user/individual on the job must be able to:		

Performance Criteria(PC) w.r.t. the Scope			
Element	Performance Criteria		
Interaction with supervisor	To be competent, the user/individual on the job must be able to: PC1. understand the work output requirements PC2. comply with company policy and rule PC3. deliver quality work on time as required by reporting any anticipated reasons for delays		
Interactions with colleagues and other departments	To be competent, the user/individual on the job must be able to: PC4. put team over individual goals PC5. be able to resolve conflicts PC6. learn how to multi-task relevant activities		
Knowledge and Unders	standing (K)		
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: preferred language of communication, reporting and escalation policy, quality delivery standards, and personnel management KA2. reporting structure		
B. Technical Knowledge	The user/individual on the job needs to know and understand how to: KB1. communicate effectively KB2. build team coordination		







Coordinate with others

Ski	Skills (S) [Optional]					
A.	Core Skills/	Communication skills				
	Generic Skills	The individual on the job needs to know and understand how to:				
		SA1. read and write preferred language of communication as prescribed by the				
		company				
		SA2. read job sheets and interpret technical details mentioned in the job sheet				
В.	Professional Skills	Decision making				
		The individual on the job needs to know and understand:				
		SB1. how to spot and communicate potential areas of disruptions to work process				
		and report the same				
		SB2. when to report to supervisor and when to deal with a colleague individually,				
		depending on the type of concern				
		Reflective thinking				
		The individual on the job needs to know and understand how to:				
		SB3. improve work processes by interacting with others and adopting best practices				
		Cutational Abrications				
		Critical thinking				
		The individual on the job needs know and understand how to:				
		SB4. spot process disruptions and delays and report and communicate with solutions				





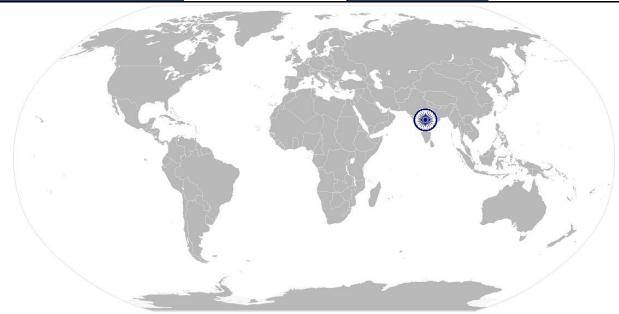




Coordinate with others

NOS Version Control

NOS Code	G&J/N9902				
Credits(NVEQF/NVQF/NSQF)	TBD Version number 1.0				
Industry	Gems &Jewellery	Drafted on	29/05/13		
Industry Sub-sector	Cast and diamond-set jewellery	Last reviewed on	11/07/13		
		Next review date	15/06/15		





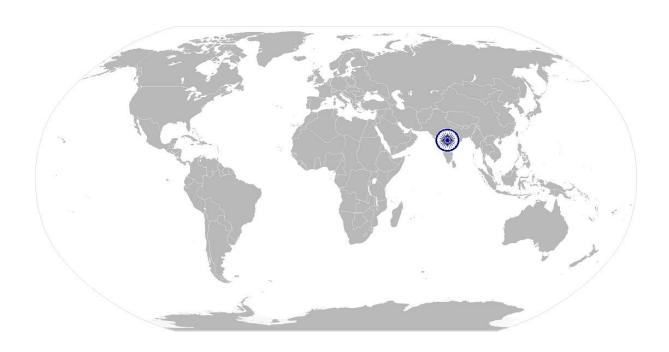






Maintain occupational health and safety

National Occupational Standard



Overview

This unit is about commitment towards reporting potential hazards, taking preventive measures to contain accidents in order to make the work environment safe for self and colleagues and maintaining occupational health and safety.







G&J/N9905	Maintain occupational health and safety
Unit Code	G&J/N9905

Waintain occupational health and safety					
Unit Code G&J/N9905					
Unit Title (Task)	Maintain occupational health and safety				
Description	This OS unit is about being aware of, communicating and taking steps towards minimizing potential hazards and dangers of accidents on the job and maintaining occupational health and safety				
Scope	 This unit/task covers the following: Understand potential sources of accidents to avoid accidents related to use of potentially dangerous chemicals, sharp tools, hazards from machines and such as heating lamps Use safety gear to avoid accidents wear safety gear such as goggles, mask, gloves, ear plugs Actively participate in the health and safety awareness campaigns attend fire drills organised by the company or industrial zone learn first aid procedure be alert about designated assembly area in the event of an emergency read and understand the evacuation and emergency procedures 				
Performance Criteria(P	 Communicate to reporting supervisor about process flow improvements that can reduce anticipated or repetitive hazards mishandling of tools, machines or hazardous materials electrical problems that could result in accident C) w.r.t. the Scope				
Element	Performance Criteria				
Communicating potential accident points	To be competent, the user/individual on the job must be able to: PC1. spot and report potential hazards on time PC2. follow company policy and rules regarding use of hazardous materials PC3. attend and actively participate in the health and safety campaigns organised by the company				
Using safety gear	To be competent, the user/individual on the job must be able to: PC4. use or wear safety gear as per the rules of the company				
Knowledge and Unders	standing (K)				
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: safety and hazards and personnel management KA2. reporting structure				
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. how different chemicals react and what could be the danger from them KB2. how to use machines and tools without suffering bodily harm				







G&J/N9905 Maintain occupational health and safety

Sk	ills (S) [Optional]					
A.	Core Skills/	Communication skills				
	Generic Skills	The individual on the job needs to know and understand how to:				
		SA1. effectively communicate the danger				
		Organising skills				
		The individual on the job needs to know and understand how to:				
		SA2. keep all the tools in an organised manner so as to avoid accidents				
		SA3. keep the work environment safe and clean				
В.	Professional Skills	Decision making				
		The individual on the job needs to know and understand how to:				
		SB1. report potential sources of danger				
		SB2. follow prescribed procedure in the event of an accident				
		SB3. wear appropriate safety gear to avoid an accident				
		Reflective thinking				
		The individual on the job needs to know and understand to:				
		SB4. learn from past mistakes regarding use of hazardous machines or chemicals				
		Critical thinking				
		The individual on the job needs to know and prestand how to:				
		SB5. spot danger				
		Decision making				
		The individual on the job needs to know and understand how to:				
		SB6. report potential sources of danger				
		SB7. follow prescribed procedure in the event of an accident				
		SB8. Wear appropriate safety gear to avoid an accident				



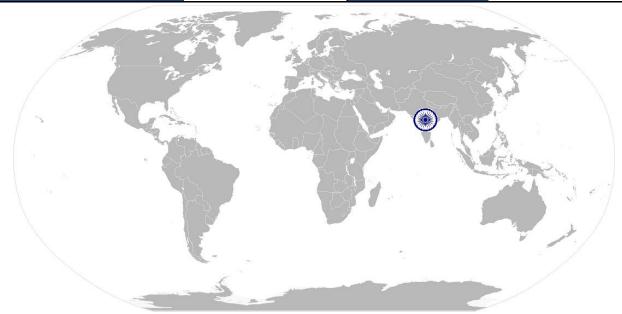




Maintain occupational health and safety

NOS Version Control

NOS Code	G&J/N9905			
Credits(NVEQF/NVQF/NSQF)	TBD Version number 1.0			
Industry	Gems &Jewellery	Drafted on	29/05/13	
Industry Sub-sector	Cast and diamond-set jewellery		11/07/13	
		Next review date	15/06/15	







Keywords /Terms	Description				
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defied as a distinct subset of the economy whose components share similar characteristics and interests.				
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.				
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.				
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.				
Sub-function	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.				
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.				
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.				
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.				
National Occupational Standards (OS)	NOS are occupational standards which apply uniquely in the Indian context.				
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.				
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'				
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.				
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.				
Scope	Scope is a set of statements specifying the range of variables that a individual may have to deal with in carrying out the function which has a critical impact on quality of performance required.				
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.				
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.				
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish				





	specific designated responsibilities.		
Core Skills / Generic Skills Core skills or generic skills are a group of skills that are the key to lea and working in today's world. These skills are typically needed in work environment in today's world. These skills are typically need any work environment. In the context of the OS, these incommunication related skills that are applicable to most job roles.			
Keywords /Terms	Description		
IPR	Intellectual Property Rights		
Mohs	Mohs scale of mineral hardness		
NOS	National Occupational Standard(s)		
NSQF	National Qualifications Framework		
NVEQF	National Vocational Education Qualifications Framework		
NVQF	National Vocational Qualifications Framework		
QP	Qualifications Pack		

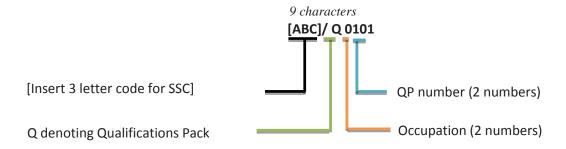




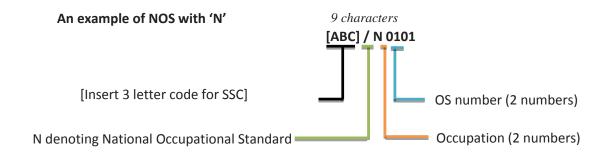
Annexure

Nomenclature for QP and NOS

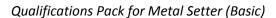
Qualifications Pack



Occupational Standard



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The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers		
Handmade gold and gems-set jewellery	01-20		
Cast and diamond-set jewellery	21-40		
Diamond processing	41-60		
Gemstone processing	61-80		
Jewellery retailing	81-98		

Sequence	Description	Example	
Three letters	Industry name	G&J	
Slash	/	/	
Next letter	Whether Q P or N OS	N	
Next two numbers	Occupation code	01	
Next two numbers	OS number	01	





CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Metal Setter (Basic)

Qualification Pack G&J/Q3103

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 theory question papers for candidates at every examination/training centre. (as per assessment criteria below)
- 4. Individual assessment agencies will create practical tests for skill evaluation for candidates at every examination/training centre. (as per assessment criteria below)
- 5. To pass the Qualification Pack, every candidate should score a minimum of 50% in theory and 70% in practical to successfully clear the assessment.
- 6. In case of successfully passing only certain number of NOS's, the candidate is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

				Marks Allocation	
		Total Marks (80+20)	Out Of	Theory	Skills Practical
1. G&J/N3101 Set diamond and gemstones in precious metal jewellery piece	PC1. place or fix stone as per design requirement		13	3	10
	PC2. secure stone in a jewellery piece without any defect or damage, with brilliance intact		13	3	10
	PC3. file edges ensuring smooth surface and utility of wearing	75	12	2	10
	PC4. maintain precious metal and stone loss within prescribed limit for the design		12	2	10
	PC5. complete the number of settings as per the target		5	0	5





	PC6. deliver on time, the metal-set jewellery for final polish and plating or for the further processing as per work flow		5	0	5
	PC7. accurately level the stones		5	0	5
	PC8. set the stones firmly		5	0	5
	PC9. achieve setting finish as per design		5	0	5
		Total	75	10	65
2. G&J/N9901 Respect and maintain IPR	PC1. be able to spot plagiarism and report		3	2	1
	PC2. be aware of patents and IPR	9	4	1	3
	PC3. not be involved in IPR violations		2	1	1
		Total	9	4	5
3. G&J/N9902 Coordinate with others	PC1. understand the work output requirements		2	1	1
	PC2. comply with company policy and rule	8	1	0	1
	PC3. deliver quality work on time as required by reporting any anticipated reasons for delays		1	0	1
	PC4. put team over individual goals		1	1	0
	PC5. be able to resolve conflicts		1	0	1
	PC6. learn how to multi-task relevant activities		2	1	1
		Total	8	3	5
4. G&J/N9905 Maintain occupational health and safety	PC1. spot and report potential hazards on time		2	1	1
	PC2. follow company policy and rules regarding use of hazardous materials	8	2	0	2



Qualifications Pack for Metal Setter (Basic)



rules of the company	Total	8	3	5
PC4. use or wear safety gear as per the		2	1	1
PC3. attend and actively participate in the health and safety campaigns organised by the company		2	1	1