



QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERY INDUSTRY

SPE-2

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understand in order to carry out Introduction

Qualifications Pack-Spectrum Operator

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Diamond processing

OCCUPATION: Diamond planning

REFERENCE ID: G&J/Q4204

ALIGNED TO: NCO-2004/ NIL

Spectrum Operator: In the diamond processing industry, the spectrum operator provides the colour grading to the various planned cuts of the diamond.

Brief Job Description: Individuals on this job use the spectrometer, light table and the D to Z machine (computer) to colour grade diamonds by analyzing the spectrum graph drawn and after passing light through the parallel windows created in the rough diamond in order to select the optimum plan. The spectrum operator evaluates the fluorescence in the rough diamond before assigning the final grades.

Personal Attributes: The job requires the individual to have: attention to details; good eyesight; ability to work for long hours in sitting position in front of the computer; high level of concentration; and a lot of patience.

What are Occupational Standards(OS)?

- Solution OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are 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/Q4204	
Job Role	Spectrum Operator		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Sector	Gems &Jewellery	Drafted on	07/06/13
Sub-sector	Diamond Processing	Last reviewed on	30/07/13
Occupation	Diamond Planning	Next review date	15/07/15

Job Role	Spectrum Operator
Role Description	Giving the expected final colour grading to various planned cuts of the rough diamond using a light table, spectrometer and a D-Z machine and picking an optimum plan
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/N4204 Use spectrum for colour grading of the diamond 2. G&J/N9930 Maintain IPR 3. G&J/N9931 Coordinate with team and superiors 4. G&J/N9933 Maintain safety Optional: Not applicable
Performance Criteria	As described in the relevant OS units

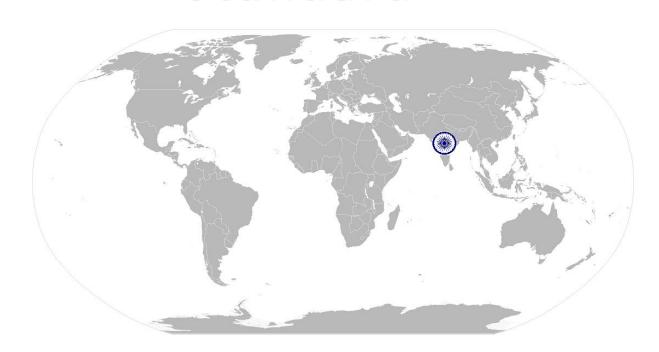






G&J/N4204 Use spectrum for colour grading of the diamond

National Occupational Standard



Overview

This unit is a about using the light table to pass light through the parallel windows created on the rough diamond, analyzing the transmission spectrum graph made by the spectrometer and using the D-Z machine to provide the expected colour of each cut planned in order to select the optimum plan. They key objective of this process is to grade the expected colour from the planned cuts of a rough diamond.







G&J/N4204	Use spectrum for colour grading of the diamond	

G&J/N4204	Use spectrum for colour grading of the diamond
Unit Code	G&J/N4204
Unit Title (Task)	Use spectrum for the colour grading of the diamond
Description	This OS unit is about using the spectrum machine to judge the expected colour of the various planned cuts of the rough diamond
Scope	This unit/task covers the following:
	 Collect the rough diamond packet from the supervisor match specifications such as shape, size, dimensions, etc., of the rough received as per those mentioned on the packet
	 Check the rough and its planning check the planning of the rough provided look at the rough diamond using an eye glass and check if there is any damage check if the existing windows are sufficient, else mark and send for more window receive from windowing and check if the windowing is proper check if there was any damage during windowing or extra weight loss check the parallel window, by placing it on the light table, if the light passes through it or not ensure there is no dirt on the rough diamond. Clean it before further processing Colour grade the rough using the spectrum set up place the clean and windowed rough on the light table and pass the light through it. Use the image captured by the light table for analysis in the spectrometer place the rough in the spectrometer and start the spectrum process on the machine observe the graphs being created by the spectrometer save the data generated by the spectrum machine and transfer it to the D-Z machine for optimization
	 Optimize the planning check the planning of the rough as per the reading of the spectrometer. assign the colour grade as estimated by the spectrometer for every planned cut before assigning the grade, use the eye glass to check the level of fluorescence and judge if that will have an impact on the final colour grade of the cut stone check the value of the cut stone as per each plan after colour has been finalized pick an optimum plan which maximizes the return for the company as per its objectives get the colour grading and the optimum plan reviewed by the supervisor if approval is not received, repeat the process as per the instructions given Perform quality check check the windowing before using the spectrometer check the level of fluorescence before finalizing the colour grades seek the approval of the supervisor/ team leader before finalization







G&J/N4204 Use spectrum for colour grading of the diamond

G&J/114204	ose spectrum for colour graunig of the diamond
	Follow safety procedures at work
	ensure appropriate marking for windowing the rough so that there is no breakage or additional weight loss
	Report problems about:
	difficulty in plan selection
	inability to decide planes for creating parallel windows
	damage to the rough while windowing
	machine / software failures
	reasons for anticipated delays that may adversely affect delivery

Performance Criteria(PC) w.r.t. the Scope

Element	Performance Criteria	
Quality of output	To be competent, the user/individual on the job must be able to:	
	PC1. accurately carry out colour estimation	
	PC2. optimize the planning	
	PC3. accurately mark the rough for windowing	
	PC4. accurately bag and label the roughs packet before returning	
Productivity	To be competent, the user/individual on the job must be able to:	
	PC5. achieve the productivity in terms of carats or number of pieces as set by the	
	company	
	PC6. timely delivery for further processing	
Controlling defects	To be competent, the user/individual on the job must be able to:	
	PC7. ensure no damage to the rough during the spectrum process	
	PC8. spot fluorescence in a rough and adjust the colour grade	
	PC9. Asses that the marking is correct for the parallel window required and will	
	not damage the diamond	
Operating the	To be competent, the user/individual on the job must be able to:	
spectrum set-up	PC10. accurately place the windowed rough on the light table for passing light and	
	imaging	
	PC11. accurately use the spectrometer to create the graphs	
	PC12. accurately enter the data of the parameters such as dimensions	
	PC13. accurately share and transfer of data from one unit to another	
Multitasking	To be competent, the user/individual on the job must be able to:	
	PC14. work on all the three equipment (light table, spectrometer, D-Z machine)	







G&J/N4204 Use spectrum for colour grading of the diamond







G&J/N4204	Use spectrum for colour grading of the diamond		
	Teamwork and multitasking		
	The user/individual on the job needs to know and understand how:		
	SA10. to share work load as required		
	SA11. to assist others who require help		
	SA12. to share knowledge with co-workers		
B. Professional Skills	Diamond valuation		
	The user/individual on the job needs to know and understand how:		
	SB1. to estimate basic value of the diamond		
	SB2. to select the best plan of the diamond to maximize value		
	Using tools and machines		
	The user/individual on the job needs to know and understand how:		
	SB3. to work with a light table, spectrometer and a computer (D-Z machine)		
	SB4. to use tools like an eye glass, tweezers, etc. to hold and view the diamond		
	SB5. to maintain tools and machines used		
	SB6. to work in a safe environment, i.e., without injuries		
	Reducing loss		
	The user/individual on the job needs to know and understand how:		
	SB7. to handle diamonds with care		
	SB8. to minimize damage or loss of any diamond during the spectrum process		
	SB9. to report diamond losses via documentation as per company policy		
	SB10. to suggest improvements in order to reduce loss		
	Decision making		
	The user/individual on the job needs to know and understand how:		
	SB11. to decide the final colour grade to be assigned to each cut planned		
	SB12. to decide the final plan to be selected for diamond cutting		
	SB13. to decide on the placement of the marking for creating parallel windows		
	Planning skills		
	The user/individual on the job needs to know and understand how:		
	SB14. to plan work for maximum productivity		
	Analytical skills		
	The user/individual on the job needs to know and understand how:		
	SB15. to assess the accuracy of the windowing of the rough given		
	SB16. to analyze the options as per company's objectives before final plan selection		
	Innovative thinking		
	The user/individual on the job needs to know and understand how:		
	SB17. to devise new means of working to improve productivity		
	SB18. to suggest different or innovative plans, which may yield higher returns for		
	the company Reflective thinking		
	The user/individual on the job needs to know and understand how: SB19. to work for long hours in a sitting position without health problems		
	2012. To work for four a fit a sitting position without fleath problems		







G&J/N4204	Use spectrum for colour grading of the diamond
	Critical thinking
	_
	The user/individual on the job needs to know and understand how:
	SB20. to spot process disruptions and delays







Use spectrum for colour grading of the diamond

NOS Code	G&J/N4204		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	07/06/13
Industry Sub-sector	Diamond Processing	Last reviewed on	30/07/13
		Next review date	15/07/15



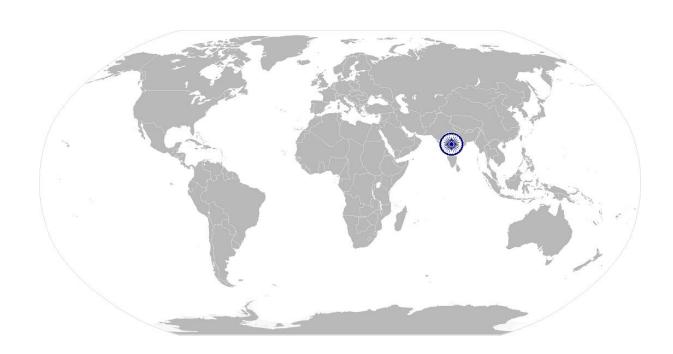




Maintain IPR

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National Occupational Standard



Overview

This unit is about and respecting intellectual property rights (IPR) of the company's products, policies, procedures and orders.







Maintain IPR

G&J/N9930	Maintain IPR
Unit Code	G&J/N9930
Unit Title (Task)	Respect IPR of company
Description	This OS unit is about maintaining company's intellectual property
Scope	This unit/task covers the following:
	Protect company's Intellectual Property Rights (IPR) • prevent leak of new orders to competitors by reporting on time
	 prevent leak of flew orders to competitors by reporting on time prevent leak of the manufacturing processes or the policies followed by the
	company
	be aware of any of company's product patents
	 report IPR violations observed in the market, to supervisor or company heads
Performance Criteria(P	
Element	Performance Criteria
Respecting IPR	To be competent, the user/individual on the job must be able to:
	PC1. spot plagiarism and report
	PC2. understand rationale of patents and IPR
	PC3. avoid being involved in IPR violations
Knowledge and Unders	standing (K)
A. Organizational	The individual on the job needs to know and understand:
Context	KA1. company's policies on IPR, plagiarism and order leaks
	KA2. company's patented products
	KA3. market trends and company's unique product range
	KA4. reporting structure
B. Technical	The individual on the job needs to know and understand:
Knowledge	KB1. basics of patents and IPR laws
	KB2. how IPR protection is important for competitiveness of a company
Skills (S) [Optional]	
A. Core Skills/	Communication skills
Generic Skills	The user/individual on the job needs to know and understand how:
	SA1. to effectively communicate any observed IPR violations or leaks
B. Professional Skills	Decision making
	The user/individual on the job needs to know and understand when and how:
	SB2. to report sources of IPR violations
	Reflective thinking
	The user/individual on the job needs to know and understand how:
	SB3. to learn from past mistakes and report IPR violations on time
	Critical thinking
	The user/individual on the job needs to know and understand how:
	SB4. to spot signs of violations and alert authorities in time







Maintain IPR

NOS Code	G&J/N9930		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	07/06/13
Industry Sub-sector	Diamond Processing	Last reviewed on	30/07/13
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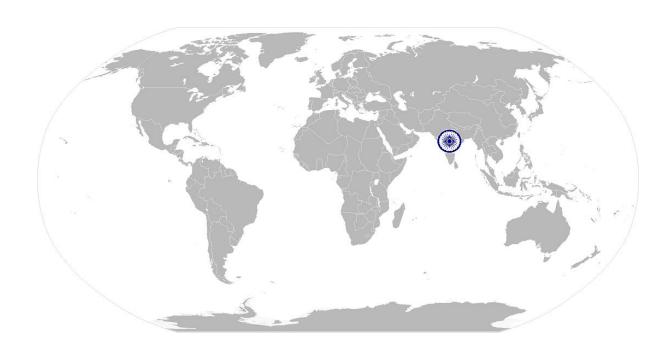






Coordinate with team and superiors

National Occupational Standard



Overview

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







G&J/N9931 Coordinate with team and superiors

G&J/N9931	Coordinate with team and superiors
Unit Code	G&J/N9931
Unit Title (Task)	Interact with colleagues and seniors
Description	This OS unit is about communicating with colleagues and seniors in order to maintain smooth ad hazards free work flow
Scope	This unit/task covers the following:
	 Interact with supervisor to: 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 to: 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
Performance Criteria(P	receive feedback from QC and rework in order to complete work on time 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. conflicts resolution and multi-tasking
Knowledge and Unders	standing (K)
A. Organizational Context (Knowledge of the company / organization and its processes)	The individual on the job needs to know and understand: KA1. company's policies on personnel management KA2. work flow involved in company's diamond processing KA3. importance of the individual's role in the workflow KA4. reporting structure
B. Technical Knowledge	The individual on the job needs to know and understand: KB1. how to communicate effectively KB2. how to build team coordination







G&J/N9931 Coordinate with team and superiors

Ski	ills (S) [Optional]		
A.	Core Skills/	Teamv	vork and some multitasking
	Generic Skills	The inc	dividual on the job needs to know and understand how:
		SA1.	to share work load as required
		SA2.	to deliver product to next work process on time
В.	Professional Skills	Decisio	on making
		The inc	dividual on the job needs to know and understand:
		SB1.	how to report potential areas of disruptions to work process
		SB2.	when to report to supervisor and when to deal with a colleague depending on
			the type of concern
		Reflective thinking	
		The inc	dividual on the job needs to know and understand:
		SB3.	how to improve work process
		Critical	thinking
		The inc	dividual on the job needs to know and understand:
		SB4.	how to spot process disruptions and delays







Coordinate with team and superiors

NOS Code	G&J/N9931		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	07/06/13
Industry Sub-sector	Diamond Processing	Last reviewed on	30/07/13
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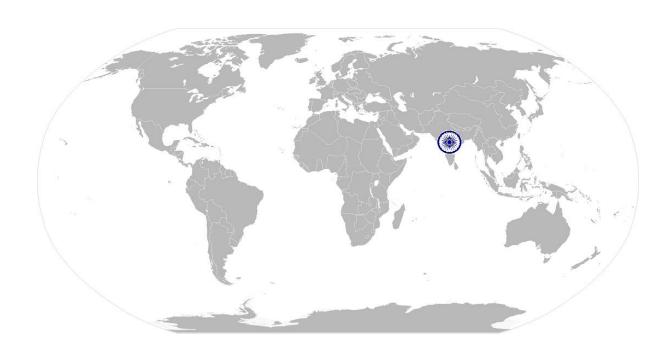






Maintain safety

National Occupational Standard



Overview

This unit is about the worker's commitment towards reporting potential hazards and containing accidents in order to make the work environment safe for self and colleagues.







Maintain safety

Unit Code	G&J/N9933		
Unit Title (Task)	Maintain safety at work		
Description	This OS unit is about being aware of and communicating potential hazards and dangers of accidents on the job		
Scope	 This unit/task covers the following: Understand potential sources of accidents to avoid accidents related to use of potentially dangerous chemicals, gases, sharp tools and hazards from machines like rotating scaife, lasers, heating ovens, etc. Use safety gear to avoid accidents wear safety gear such as goggles, mask, gloves, jacket, etc. as prescribed for the job 		
	 Understand the safety procedures followed by the company such as fire drills, emergency/ evacuation procedures, first aid, etc., which will be helpful in case of an emergency Communicate to reporting supervisor about: process flow improvements to reduce anticipated or repetitive hazards mishandling of tools, machines or hazardous materials electrical problems that could result in accident 		

Performance Criteria(PC) w.r.t. the Scope

Element	Performance Criteria		
Understanding of	To be competent, the user/individual on the job must be able to:		
potential sources of	PC1. spot and report potential hazards on time		
accidents and	PC2. follow company policy and rules regarding hazardous materials		
communicating	PC3. deliver quality work on time as required by reporting any anticipated reasons		
	for delays		
Using safety gear	To be competent, the user/individual on the job must be able to:		
	PC4. understand which safety gear must we used for a particular task		
Understanding of	To be competent, the user/individual on the job must be able to:		
safety procedures	PC5. understand and follow the evacuation procedure properly during a fire drill		
	PC6. provide first aid to self or others in case of emergency		

Knowledge and Understanding (K)

Knowledge and Onders	stanuing (K)
A. Organizational	The individual on the job needs to know and understand:
Context	KA1. company's policies on handling: harmful chemicals and sharp tools, safety and
(Knowledge of the company / organization and its processes)	hazards of machines, fire safety/drill, first aid and, disposal of harmful chemicals and materials KA2. work flow involved in company's diamond processing KA3. importance of the individual's role in the workflow KA4. reporting structure







G&J/N9933 Maintain safety

G&J/117733	Maintain Safety	
B. Technical	The individual on the job needs to know and understand:	
Knowledge	KB1. how different chemicals react and what could be the danger from them	
	KB2. how to use machines and tools without causing bodily harm	
	KB3. fire safety education	
	KB4. first aid execution	
	KB5. disposal of hazardous chemicals, tools and materials by following prescribed	
	environmental norms or as per company policy	
Skills (S) [Optional]		
A. Core Skills/	Communication skills	
Generic Skills	The individual on the job needs to know and understand how:	
	SA1. to effectively communicate the danger	
B. Professional Skills	Decision making	
	The individual on the job needs to know and understand:	
	SB1. importance of reporting potential sources of danger	
	SB2. appropriate actions to be taken in the event of an accident	
	SB3. procedure for disposing of hazardous materials, safely and following	
	environmental guidelines	
	Reflective thinking	
	The individual on the job needs to know and understand how:	
	SB4. to learn from past mistakes regarding use of hazardous machines, tools or	
	chemicals	
	Critical thinking	
	The individual on the job needs to know and understand:	
	SB5. how to spot danger	
	SB6. procedure to follow in the event of a fire or other hazard	







Maintain safety

NOS Code	G&J/N9933		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems &Jewellery	Drafted on	07/06/13
Industry Sub-sector	Diamond Processing	Last reviewed on	30/07/13
		Next review date	15/07/15





Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined 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 an individual may have to deal with in carrying out the function which have 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 learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.	
Keywords /Terms	Description	
IPR	Intellectual Property Rights	
NOS	National Occupational Standard(s)	
NVQF	National Vocational Qualifications Framework	
NSQF	National Qualifications Framework	
NVEQF	National Vocational Education Qualifications Framework	
QP	Qualifications Pack	

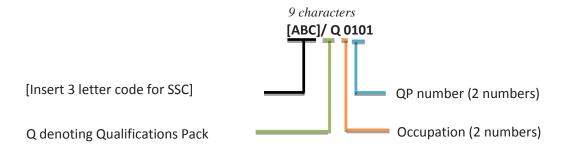




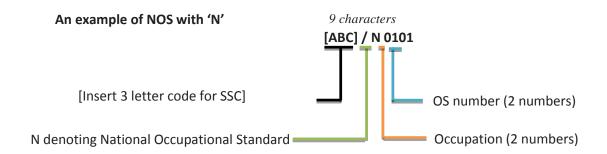
Annexure

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	Q
Next two numbers	Occupation code	42
Next two numbers	OS number	02





Job Role

Qualification Pack

Sector Skill Council



CRITERIA FOR ASSESSMENT OF TRAINEES

Diamond Processing Spectrum Operator

Diamond Processing Spectrum Operator - G&J/Q4204

GEMS & JEWELLERY

To pass the Assessment, a candidate needs to score 50% in Theory and 70% in Practical

Assessment Strategy			Marks	Allocation
NOS	Elements	Performance Criteria	Theory	Practical
1. G&J/N4204 Use spectrum for colour grading of the diamond	Quality of output	PC1. accurately carry out colour estimation	2	4
		PC2. optimize the planning	2	6
		PC3. accurately mark the rough for windowing	1	3
		PC4. accurately bag and label the roughs packet before returning	1	2
	Productivity	To be competent, the user/individual on the job must be able to: PC5. achieve the productivity in terms of carats or number of pieces as set by the		-
		PC6. timely delivery for further processing	1	4
	Controlling defects	To be competent, the user/individual on the job must be able to: PC7. ensure no damage to the rough during the spectrum process	1	6
		PC8. spot fluorescence in a rough and adjust the colour grade	1	4
		PC9. asses that the marking is correct for the parallel window required and will not damage the diamond	1	4
	Operating the spectrum set-up	To be competent, the user/individual on the job must be able to: PC10. accurately place the windowed rough on the light table for passing light and		
		PC11. accurately use the spectrometer to create the graphs	1	4
		PC12. accurately enter the data of the parameters such as dimensions	1	5
		PC13. accurately share and transfer of data from one unit to another	1	5
	Multitasking	To be competent, the user/individual on the job must be able to: PC14. work on all the three equipment (light table, spectrometer, D-Z machine)	1	10





		Sub Total	15	65
2.G&J/N9930 Maintain IPR	Respecting IPR	To be competent, the user/individual on the job must be able to: PC1. Spot plagiarism and report		1
		PC2. understand rationale of patents and IPR	1	
		PC3. avoid being involved in IPR violations		1
		Sub Total	1	2
3. G&J/ N9931 Coordinate with others	Interaction with supervisor	To be competent, the user/individual on the job must be able to: PC1. Understand the work output requirements		1
		PC2. Understand company policy and rule	1	
		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays		1
	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		1
		PC5. Conflicts resolution and multi-tasking		4
		Sub Total	1	7
4. G&J/ N9933 Maintain safe work environment	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	1	
		PC2. Follow company policy and rules regarding use of hazardous materials		2
		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays	1	
	Using safety gear	To be competent, the user/individual on the job must be able to: PC4. understand which safety gear must we used for a particular task		1
	Understanding of safety procedures	To be competent, the user/individual on the job must be able to: PC5. understand and follow the evacuation procedure properly during a fire drill		1
		PC6. provide first aid to self or others in case of emergency		
		Sub Total	2	4
		Total	20	80
		Grand Total	•	100