

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Optical Fiber Technician

Qualification Pack TEL/Q6401

Sector Skill Council Telecom

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.

NOS Title	Element	Performance Criteria	Total Mark (300)	Out Of	Marks Allocation	
					Theory	Skills Practical
1. TEL/N6402 (Co-ordinate Installation & Commissioning of Optical fiber cables)	Carry out Inspection of route plan and obtain necessary clearances	PC1. obtain OFC route plan from the planning team or the supervisors as per which OFC has to be laid	100	10	5	5
		PC2. verify the proposed route to ensure that bend ratios meet manufacturer's specifications and industry standards				
PC3. ensure that site is made safe and secure for cable installation in coordination with labour workers						
PC4. develop installation work plan and identify dependencies if any						
PC5. determine the statutory permissions required and the relevant authorities involved						
PC6. liaise with authorities and obtain relevant clearances						
	Arrange for tools and spares	PC1. ensure availability of test equipments like OTDR and Power meter for carrying out optical tests		10	10	
		PC2. ensure availability of all required trenching, cable laying, pipe laying, OFC laying and splicing equipments and spares for timely completion of installation activity				
		PC3. ensure that faulty equipments are sent to logistics team for repair and replacement				
		PC4. ensure calibration status of equipments to be used (eg.splicing machine, OTDR, power meter, cleaver)				

Coordinate trenching, cable laying, jointing and cable blowing activities	PC1. ensure cable drum is placed near site location and test cable on drum for optical continuity
	PC2. ensure trenching is carried out by labour workers as per the route plan requirements and site terrain
	PC3. ensure minimum radius is maintained, where bends are necessary
	PC4. ensure use of specially designed dispensers to place the ducts in the trench as straight as possible
	PC5. ensure pipe/ ducts are placed at lower appropriate depths as per the laying standards after approval from competent personnel
	PC6. ensure that ducts are free from twists, collapsed portions and that all such portions are rectified by using appropriate couplers
	PC7. ensure proper uncoiling of PLB ducts
	PC8. ensure duct joints are airtight to ensure smooth cable blowing using cable blowing machines
	PC9. ensure cable blowing/ jetting is carried out using rodder as per standard process
	PC10. ensure availability of additional cable length (loop) at jointing locations, for future use in case of failures
	PC11. ensure that ends of ducts are closed with End Plugs to avoid ingress of mud, water or dust
	PC12. ensure that entire length of the duct is cleaned to remove sand, dust that may damage the optical fiber cable
	PC13. ensure that cables are appropriately prepared for Jointing based on colour and/ or sequence matching
	PC14. ensure the cables are joined/ spliced by Optical fibre splicer as per the standard fusion/ mechanical splicing mechanisms
	PC15. ensure use of proper protection material such as GI pipes, RCC pipes, RCC half-cut pipes etc.
	PC16. ensure use of Pushfit couplers as duct joints
	PC17. identify instances of cross fibre using power source and power meter tests and ensure their elimination
	PC18. ensure appropriate optical connectors are used as per the terminating equipment requirements
	PC19. verify if ducts require additional protection like cover of RCC pipes, chambering and concreting based on site location and terrain
	PC20. ensure installation activity is completed within the defined SLAs
	PC21. ensure timely completion of work by monitoring activities performed by the labour workers and optical splicers
	PC22. ensure compliance to enterprise policy while escalating instances of delays
Test effectiveness & close activity	PC1. ensure use of appropriate color for the route indicators and joint indicators as per standards
	PC2. ensure splices are within the quality assurance/ AT standards

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		<p>PC3. test the joint for transmission loss and strength and re-terminate the joint if the transmission loss exceeds the manufacturer's specifications</p> <p>PC4. ensure backfilling and crowning in coordination with the labour workers as per standard requirements</p> <p>PC5. ensure stone marker at the jointing pit has to be provided for identification of route as well as jointing pit</p> <p>PC6. ensure appropriate cable markings as per guidelines</p> <p>PC7. ensure updation of As-build documents based on joint location and installed fibre route</p> <p>PC8. clear sites from debris and other items</p>				
	Health and Safety	<p>PC1. ensure appropriate disposal of the cut fibers, sleeves and cable pieces</p> <p>PC2. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms</p> <p>PC3. ensure that work is carried out in accordance to the level of competence and legal requirements</p> <p>PC4. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work</p> <p>PC5. ensure compliance to health and safety guidelines by optical splicer and installation labour workers</p> <p>PC6. ensure that Personal protection equipments like helmets, knee pads, safety boots, safety glasses and trench guards are appropriately used as required</p> <p>PC7. ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work</p> <p>PC8. ensure adherence to emergency plans in case of safety incidents</p> <p>PC9. ensure escalation of safety incidents to relevant authorities as per guidelines legal requirements</p>	10	10		
	Report & Record	<p>PC1. ensure cable id/ make and drum numbers are recorded for future fault localization</p> <p>PC2. ensure OTDR finding are documented & summary of tests are shared with appropriate teams</p> <p>PC3. obtain sign-off from the projects team and communicate status to NOC for cable integration</p> <p>PC4. ensure that documents are available to all appropriate authorities to inspect</p>	10	10		
			Total	100	75	25
2. TEL/N6403 (Undertake Condition based Maintenance & Planned repair activities)	Obtain maintenance schedule and patrol assigned route section	<p>PC1. ensure As-build drawing is obtained from the NOC/ supervisors and identify the OFC route assigned for maintenance</p> <p>PC2. ensure availability of optical test tools like OTDR, Power meter, Light meter</p> <p>PC3. ensure patrolling and surveillance of OFC route as per the maintenance plan</p>	100	10		10

	PC4. ensure monitoring of jobs undertaken by other agencies in the vicinity of OFC network to ensure the safety of OFC cable
	PC5. coordinate and liaise with authorities for checking for any planned construction/ activity in the vicinity of the OFC
	PC6. ensure sample check of as-built drawings
	PC7. ensure changes to as-built drawings are communicated to the NOC/ supervisors for updating the document
Arrange for tools and spares	PC1. ensure availability of test equipments like OTDR and Power meter for carrying out optical tests
	PC2. ensure availability of optical equipments like spool, joint closure, connectors, splicers and cleaver
	PC3. ensure inputs based on test results are provided to planning team for developing route strengthening workplans
	PC4. ensure calibration status of equipments to be used (eg.splicing machine, OTDR, power meter, cleaver)
Carry out maintenance testing of dark/ spare OFC	PC1. ensure performance of OTDR, Power Meter tests for all the dark/ spare fibers as per required periodicity
	PC2. ensure testing of end-to-end link for adherence to link budget and identify loss and reflection points
	PC3. ensure inputs based on test results are provided to planning team for developing route strengthening workplans
Carry out planned repairs to the OFC	PC1. coordinate with Network Operating Centre (NOC) prior to undertaking the planned repair activities and obtain time block for carrying out the activity
	PC2. ensure that the planned repair activities are completed within the defined timelines
	PC3. confirm effectiveness of the planned repair process by carrying out optical tests on spare fibers
	PC4. in case, active fibers are to be used for testing, fibres are to be used, ensure precautions are taken with regard to the power launched on to the fibre
	PC5. ensure installation activity is completed within the defined SLAs
	PC6. ensure compliance to enterprise policy while escalating instances of delays
	PC7. ensure timely escalation of emergency/ unresolved issues according to established Company's procedure
Carry out maintenance of equipments at Points of Presence	PC1. conduct periodic (monthly, quarterly, half yearly) maintenance activities

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	(POPs)	<p>PC2. ensure completion of physical maintenance tasks like checking battery voltage levels, electrolyte levels; DG set auto-start, oil levels; Air conditioner gas level, filter condition; Earthing, Fire alarm system and other power equipments (including MCBs)</p> <p>PC3. ensure general upkeep of co-located electronic equipments and ensure testing of alarms in coordination of NOC</p> <p>PC4. ensure that live/ working fibres are not disturbed while testing</p> <p>PC5. carry out planned repairs to existing joints and terminations in co-ordination with NCC for improvement of link margin</p> <p>PC6. ensure that for 3rd party elements that require maintenance, tickets are raised to the respective vendors by the NOC team</p>				
	Health and Safety	<p>PC1. ensure appropriate disposal of the cut fibers, sleeves and cable pieces</p> <p>PC2. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms</p> <p>PC3. ensure that work is carried out in accordance to the level of competence and legal requirements</p> <p>PC4. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work</p> <p>PC5. ensure compliance to health and safety guidelines by optical splicer and installation labour workers</p> <p>PC6. ensure that Personal protection equipments like helmets, knee pads, safety boots, safety glasses and trench guards are appropriately used as required</p> <p>PC7. ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work</p> <p>PC8. ensure escalation of safety incidents to relevant authorities as per guidelines legal requirements</p>	10	10		
	Report & Record	<p>PC1. ensure completion of Patrolling register showing complete log in chronological order Kilometer wise of the patrolling in the section</p> <p>PC2. ensure completion of OFC/OTDR register showing complete record of all fibers tests</p> <p>PC3. keep account of diesel oil at respective stations and ensure maintenance of assets register for sites under supervision</p> <p>PC4. ensure summary of OTDR finding is to be made & sent to the respective territory manager for planning and monitoring cable improvement works</p> <p>PC5. ensure that documents are available to all appropriate authorities to inspect</p>	10	10		
			Total	100	55	45
3. TEL/6404 (Perform corrective maintenance/ restoration of optical faults)	Handling fault notifications on prompt basis	PC1. receive fault notification from NOC/ supervisors/ customers and obtain details of response time/ SLAs	100	20	20	

	PC2. ensure that latest As-build drawing is obtained from the NOC/ supervisors
Arrange for tools and spares	PC1. ensure availability of test equipments like OTDR and Power meter for carrying out optical tests
	PC2. ensure availability of optical equipments like spool, joint closure, connectors, splicers and cleaver
	PC3. ensure that faulty equipments are sent to logistics team for repair and replacement
	PC4. ensure calibration status of equipments to be used (eg.splicing machine, OTDR, power meter, cleaver)
Fault localization and rectification	PC1. visit nearby POP location/ node and carry out OTDR tests on spare fiber using spool fiber if required, to identify exact location of fault
	PC2. refer the As-build drawing to locate the physical site on the ground
	PC3. coordinate excavation, pulling of appropriate cables (if feasible) and preparation of jointing pit at site through labour workers
	PC4. coordinate with optical splicer to carry out splicing as per standard process
	PC5. ensure effectiveness of the jointing activity by reviewing OTDR and power test results
	PC6. ensure joints are protected and strengthened appropriately using couplers, spleaves and FRPs as required
	PC7. verify if ducts require additional protection like cover of RCC pipes, chambering and concreting based on site location and terrain
	PC8. coordinate back-filling of the trench through labor workers
	PC9. ensure rectification of network problem/ fault within the alarm SLAs
	PC10. ensure timely completion of work by monitoring activities performed by the labour workers and optical splicers
	PC11. ensure compliance to enterprise policy while escalating unresolved faults/ instances of delays
Health and Safety	PC1. ensure appropriate disposal of the cut fibers, sleeves and cable pieces
	PC2. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms
	PC3. ensure that work is carried out in accordance to the level of competence and legal requirements
	PC4. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work
	PC5. ensure compliance to health and safety guidelines by optical splicer and installation labour workers

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	<p>PC6. ensure that Personal protection equipments like helmets, knee pads, safety boots, safety glasses and trench guards are appropriately used as required</p> <p>PC7. ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work</p> <p>PC8. ensure escalation of safety incidents to relevant authorities as per guidelines legal requirements</p>			
Report & Record	<p>PC1. ensure appropriate cable marking and Installation of chamber & route marker for direction and route identification</p> <p>PC2. ensure preparation of jointing record for future reference</p> <p>PC3. ensure that documents that are required to be updated are identified</p> <p>PC4. ensure completion of OTDR register showing complete record of jointing tests</p>	10	10	
Total		100	70	30