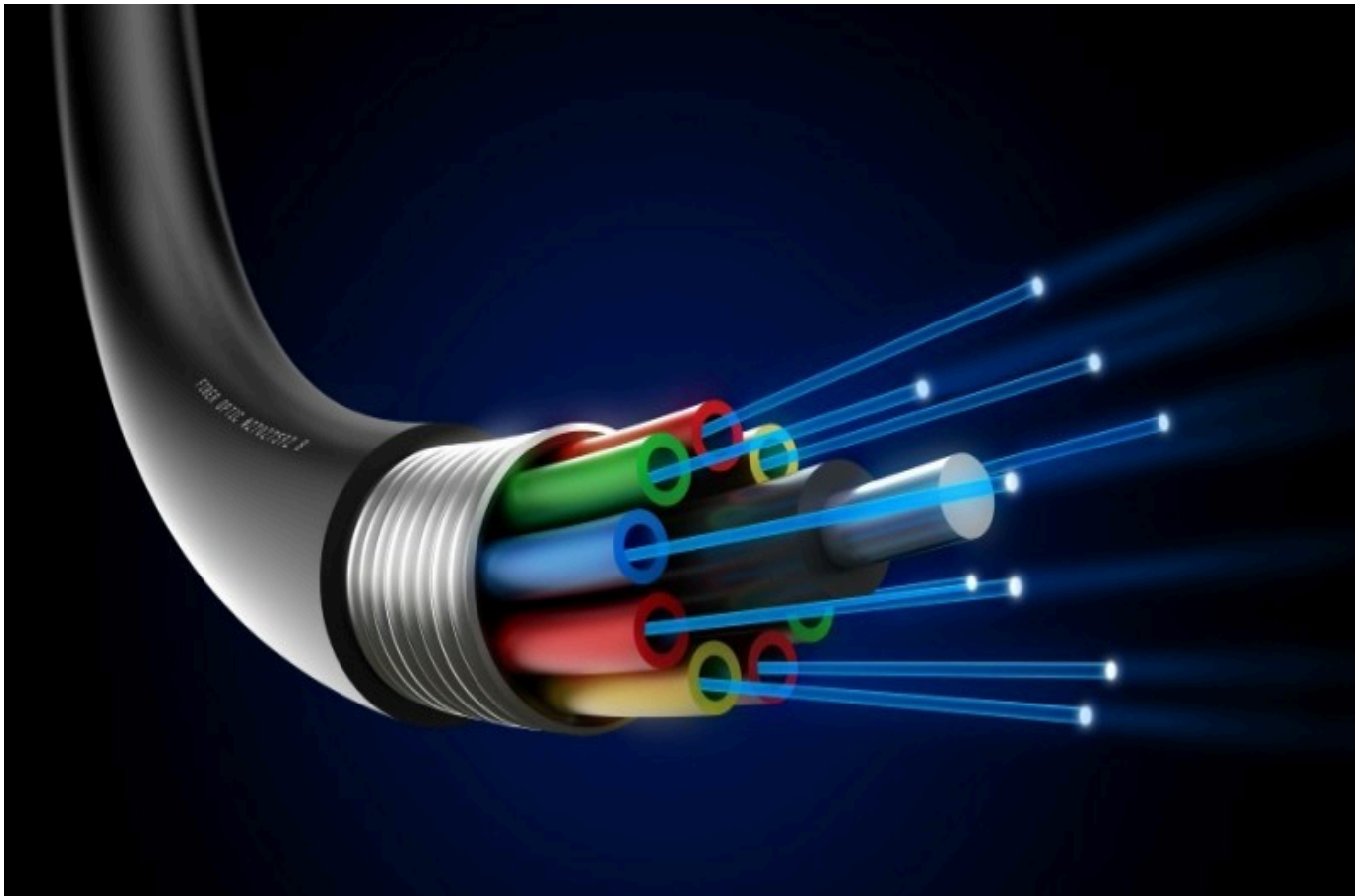


Qualification Pack



Optical Fiber Technician

QP Code: TEL/Q6401

Version: 5.0

NSQF Level: 4

Telecom || 3rd Floor, Plot No 126, Sector - 44
Gurgaon - 122003 || email:QAteam@tsscindia.com

Qualification Pack

Contents

TEL/Q6401: Optical Fiber Technician	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
TEL/N4137: Coordinate Installation and Commissioning of Optical Fiber Cables (OFCs)	5
TEL/N6403: Undertake Condition based Maintenance and Planned Repair Activities	13
TEL/N6404: Perform Corrective Maintenance/Restoration of Optical Fiber Faults	20
TEL/N9111: Follow sustainability practices in telecom cabling operations	26
DGT/VSQ/N0101: Employability Skills (30 Hours)	33
Assessment Guidelines and Weightage	38
<i>Assessment Guidelines</i>	38
<i>Assessment Weightage</i>	39
Acronyms	40
Glossary	42

Qualification Pack

TEL/Q6401: Optical Fiber Technician

Brief Job Description

An Optical Fiber Technician oversees the installation and commissioning of Optical Fiber Cables (OFCs) and ensures network reliability through proactive maintenance and timely fault rectification. The individual's responsibilities include periodic preventive maintenance, condition-based repairs, and effective fault management to maintain optimal uptime and service quality.

Personal Attributes

This individual should have strong analytical and problem-solving skills, teamwork, and effective communication, for coordinating with field labour. The individual should be adaptable to high-pressure situations and challenging terrains.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TEL/N4137: Coordinate Installation and Commissioning of Optical Fiber Cables \(OFCs\)](#)
2. [TEL/N6403: Undertake Condition based Maintenance and Planned Repair Activities](#)
3. [TEL/N6404: Perform Corrective Maintenance/Restoration of Optical Fiber Faults](#)
4. [TEL/N9111: Follow sustainability practices in telecom cabling operations](#)
5. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
Country	India
NSQF Level	4
Credits	16
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0206

Qualification Pack

Minimum Educational Qualification & Experience	12th grade Pass OR Completed 2nd year of the 3-year diploma after 10 (in Electronics and Communication Engineering/ Electrical Engineering/ Telecommunication Engineering) OR 10th grade pass with 3 Years of experience in the operations and maintenance of passive infrastructure OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience in the operations and maintenance of passive infrastructure OR Previous relevant Qualification of NSQF Level (3.5) with 1.5 years of experience in the operations and maintenance of passive infrastructure
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	NA
Next Review Date	30/04/2028
NSQC Approval Date	08/05/2025
Version	5.0
Reference code on NQR	QG-04-TL-04077-2025-V2-TSSC
NQR Version	2

Qualification Pack

TEL/N4137: Coordinate Installation and Commissioning of Optical Fiber Cables (OFCs)

Description

This unit is about coordinating trenching, laying, installation, splicing, testing, and commissioning of Optical Fiber Cables (OFCs), including the use of advanced tools and techniques to ensure effective transmission.

Scope

The scope covers the following :

- Inspect the route plan
- Coordinate cable laying and pulling
- Use multi-fiber splicing and termination techniques
- Test and validate cable effectiveness
- Adhere to applicable health and safety guidelines
- Report and record installation activities

Elements and Performance Criteria

Inspect the route plan

To be competent, the user/individual on the job must be able to:

- PC1.** obtain and review the OFC route plan from the planning team or supervisor
- PC2.** verify the proposed route, ensuring compliance with manufacturer-specified bend ratios and industry standards
- PC3.** identify dependencies and create an installation work plan
- PC4.** determine required statutory permissions and liaise with relevant authorities to secure clearances
- PC5.** ensure compatibility of ultra-low loss cables with project requirements
- PC6.** select appropriate optical fiber mode (Single Mode or Multi Mode) based on the project location and network design

Coordinate cable laying and pulling

To be competent, the user/individual on the job must be able to:

- PC7.** arrange tools, including advanced cable-handling equipment, and spares for installation
- PC8.** confirm placement of the cable drum at the site
- PC9.** test cables on the drum for optical continuity
- PC10.** supervise trenching to ensure it is carried out as per the route plan and site terrain
- PC11.** ensure adherence to manufacturer-specified bend radii and manage tension during installation
- PC12.** use specially designed dispensers for accurate duct placement in trenches
- PC13.** check pipe/duct depths for compliance with laying standards and rectify collapsed or twisted ducts

Qualification Pack

- PC14.** confirm ducts are clean and sealed with appropriate end plugs to prevent contamination
- PC15.** oversee cable blowing/jetting using advanced blowing machines
- PC16.** verify additional cable length (loop) is available at jointing locations for future use
- PC17.** ensure proper uncoiling and alignment of PLB ducts
- PC18.** confirm the use of protective materials such as GI or RCC pipes where necessary

Use multi-fiber splicing and termination techniques

To be competent, the user/individual on the job must be able to:

- PC19.** verify availability and proper operation of advanced multi-joiner fusion splicers
- PC20.** supervise multi-fiber splicing to ensure alignment and minimal signal loss
- PC21.** use advanced protection sleeves and connectors during termination
- PC22.** follow step-by-step splicing and termination techniques to ensure adherence to quality standards
- PC23.** test for signal attenuation and ensure re-termination if required

Test and validate cable effectiveness

To be competent, the user/individual on the job must be able to:

- PC24.** use advanced testing tools like OTDR, power meters, and light meters to validate installations
- PC25.** identify and eliminate cross-fiber issues using power source and power meter tests
- PC26.** ensure splice quality meets quality assurance standards
- PC27.** perform final transmission loss tests and rectify issues exceeding manufacturer specifications
- PC28.** check for proper backfilling, crowning, and installation of route/joint markers
- PC29.** update as-built documentation with accurate joint locations and installed fiber routes
- PC30.** ensure site cleanup and disposal of debris

Adhere to applicable health and safety guidelines

To be competent, the user/individual on the job must be able to:

- PC31.** comply with site-specific risk controls, OHS guidelines, and environmental regulations
- PC32.** use appropriate PPE, including helmets, knee pads, safety boots, and trench guards
- PC33.** manage environmental hazards such as Earth Potential Rise (EPR) effectively
- PC34.** adhere to emergency protocols for safety incidents
- PC35.** ensure cleanliness and proper handling to avoid fiber contamination

Report and record installation activities

To be competent, the user/individual on the job must be able to:

- PC36.** record cable ID/drum numbers for fault localization
- PC37.** document test reports, including OTDR results, and share them with relevant teams
- PC38.** obtain sign-off from project teams and update the network operations center (NOC) for integration
- PC39.** maintain all installation documents for audits and inspections

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

Qualification Pack

- KU1.** standard reporting, documentation, and as-built diagram protocols
- KU2.** Occupational Health and Safety (OHS) and environmental regulations
- KU3.** quality assurance, Acceptance Testing (AT) standards, and signal quality KPIs
- KU4.** correct usage of relevant Personal Protective Equipment (PPE)
- KU5.** the precautionary measures for electrical, chemical, and environmental hazards
- KU6.** fire safety equipment usage and first aid procedures
- KU7.** the principles of optical transport media and OFC communication
- KU8.** the characteristics of optical fibers, including refraction, polarization, attenuation, and dispersion
- KU9.** wavelength bands and their impact on signal transmission
- KU10.** the network design basics, including LAN/WAN integration and patch panel management
- KU11.** standard trenching, cable laying, splicing, jointing, blowing, and back-filling procedures
- KU12.** the procedures for sealing joints using heat shrinking, multi-diameter seals, and mechanical seals
- KU13.** the installation procedures for ultra-low loss cables
- KU14.** compatibility requirements for advanced connectors and protection sleeves
- KU15.** types of OFC connectors based on equipment specifications
- KU16.** the functionality and usage of optical equipment like cleavers, fusion splicers, and mechanical splicing kits
- KU17.** the operation of fiber strippers, protection sleeves, and fiber-reinforced plaster
- KU18.** the use of advanced tools like multi-joiner fusion splicers and cable blowing machines
- KU19.** the working principles of optical test equipment like OTDR, power meters, and light meters
- KU20.** optimal values for OTDR, power meter, and light meter test results
- KU21.** the procedures for developing an installation work plan
- KU22.** different types of clearances and municipal approvals required for installation work
- KU23.** the methods for managing labor and coordinating with third-party vendors
- KU24.** spare part management and repair/return processes for faulty equipment
- KU25.** the standard procedures for the disposal of cut fibers and other waste materials

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** record work plans, logs, and test results accurately
- GS2.** liaise with supervisors, teams, and authorities effectively
- GS3.** use tools and materials efficiently to minimize waste
- GS4.** identify and promptly address installation challenges such as cross-fiber issues and attenuation drops
- GS5.** ensure compliance with standards during splicing, trenching, and backfilling
- GS6.** enforce adherence to PPE and safety protocols on-site
- GS7.** handle multiple activities within deadlines
- GS8.** work with diverse teams, including third-party contractors and labor workers

Qualification Pack

GS9. communicate effectively in the local language for better coordination

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Inspect the route plan</i>	5	10	-	3
PC1. obtain and review the OFC route plan from the planning team or supervisor	1	2	-	0.5
PC2. verify the proposed route, ensuring compliance with manufacturer-specified bend ratios and industry standards	1	2	-	0.5
PC3. identify dependencies and create an installation work plan	1	2	-	0.5
PC4. determine required statutory permissions and liaise with relevant authorities to secure clearances	1	2	-	0.5
PC5. ensure compatibility of ultra-low loss cables with project requirements	0.5	1	-	0.5
PC6. select appropriate optical fiber mode (Single Mode or Multi Mode) based on the project location and network design	0.5	1	-	0.5
<i>Coordinate cable laying and pulling</i>	10	15	-	6.5
PC7. arrange tools, including advanced cable-handling equipment, and spares for installation	1	2	-	1
PC8. confirm placement of the cable drum at the site	1	2	-	0.5
PC9. test cables on the drum for optical continuity	1	2	-	0.5
PC10. supervise trenching to ensure it is carried out as per the route plan and site terrain	1	1	-	0.5
PC11. ensure adherence to manufacturer-specified bend radii and manage tension during installation	1	1	-	0.5
PC12. use specially designed dispensers for accurate duct placement in trenches	1	1	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check pipe/duct depths for compliance with laying standards and rectify collapsed or twisted ducts	1	1	-	0.5
PC14. confirm ducts are clean and sealed with appropriate end plugs to prevent contamination	1	1	-	0.5
PC15. oversee cable blowing/jetting using advanced blowing machines	0.5	1	-	0.5
PC16. verify additional cable length (loop) is available at jointing locations for future use	0.5	1	-	0.5
PC17. ensure proper uncoiling and alignment of PLB ducts	0.5	1	-	0.5
PC18. confirm the use of protective materials such as GI or RCC pipes where necessary	0.5	1	-	0.5
<i>Use multi-fiber splicing and termination techniques</i>	4	6	-	2.5
PC19. verify availability and proper operation of advanced multi-joiner fusion splicers	1	2	-	0.5
PC20. supervise multi-fiber splicing to ensure alignment and minimal signal loss	1	1	-	0.5
PC21. use advanced protection sleeves and connectors during termination	0.5	1	-	0.5
PC22. follow step-by-step splicing and termination techniques to ensure adherence to quality standards	0.5	1	-	0.5
PC23. test for signal attenuation and ensure re-termination if required	1	1	-	0.5
<i>Test and validate cable effectiveness</i>	5	8	-	3.5
PC24. use advanced testing tools like OTDR, power meters, and light meters to validate installations	1	2	-	0.5
PC25. identify and eliminate cross-fiber issues using power source and power meter tests	1	1	-	0.5
PC26. ensure splice quality meets quality assurance standards	1	1	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. perform final transmission loss tests and rectify issues exceeding manufacturer specifications	0.5	1	-	0.5
PC28. check for proper backfilling, crowning, and installation of route/joint markers	0.5	1	-	0.5
PC29. update as-built documentation with accurate joint locations and installed fiber routes	0.5	1	-	0.5
PC30. ensure site cleanup and disposal of debris	0.5	1	-	0.5
<i>Adhere to applicable health and safety guidelines</i>	4	6	-	2.5
PC31. comply with site-specific risk controls, OHS guidelines, and environmental regulations	1	2	-	0.5
PC32. use appropriate PPE, including helmets, knee pads, safety boots, and trench guards	1	1	-	0.5
PC33. manage environmental hazards such as Earth Potential Rise (EPR) effectively	1	1	-	0.5
PC34. adhere to emergency protocols for safety incidents	0.5	1	-	0.5
PC35. ensure cleanliness and proper handling to avoid fiber contamination	0.5	1	-	0.5
<i>Report and record installation activities</i>	2	5	-	2
PC36. record cable ID/drum numbers for fault localization	0.5	2	-	0.5
PC37. document test reports, including OTDR results, and share them with relevant teams	0.5	1	-	0.5
PC38. obtain sign-off from project teams and update the network operations center (NOC) for integration	0.5	1	-	0.5
PC39. maintain all installation documents for audits and inspections	0.5	1	-	0.5
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4137
NOS Name	Coordinate Installation and Commissioning of Optical Fiber Cables (OFCs)
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	6
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

TEL/N6403: Undertake Condition based Maintenance and Planned Repair Activities

Description

This unit covers planned maintenance testing, repairs, and condition-based maintenance of equipment deployed at Points of Presence (POPs).

Scope

The scope covers the following :

- Obtain maintenance schedule and patrol assigned route
- Carry out maintenance testing of dark/spare OFCs
- Repair OFCs as per plan
- Carry out equipment maintenance at Points of Presence (POPs)
- Record and report fiber test results

Elements and Performance Criteria

Obtain maintenance schedule and patrol assigned route

To be competent, the user/individual on the job must be able to:

- PC1.** obtain as-built drawings from NOC/supervisors and identify the assigned maintenance route for Optical Fiber Cables (OFCs)
- PC2.** conduct patrolling and surveillance of OFC routes per the maintenance plan
- PC3.** monitor activities by third parties near the network to ensure the safety of OFCs
- PC4.** coordinate with authorities regarding planned construction/activity in the vicinity of OFCs
- PC5.** follow the applicable preventative maintenance measures and schedules to ensure the longevity and performance of OFCs
- PC6.** perform sample checks of as-built drawings
- PC7.** communicate any updates to as-built drawings to NOC/supervisors for documentation

Carry out maintenance testing of dark/spare OFCs

To be competent, the user/individual on the job must be able to:

- PC8.** use advanced tools like Optical Time Domain Reflectometer (OTDR), Power Meter, Light Meter, and Visual Fault Locator (VFL) for maintenance testing
- PC9.** perform OTDR and power meter tests on all dark/spare fibers as per required periodicity
- PC10.** measure attenuation and loss to ensure adherence to network performance standards
- PC11.** interpret OTDR results to identify transmission losses and reflection points
- PC12.** advise the planning team on route strengthening based on test results

Repair OFCs as per plan

To be competent, the user/individual on the job must be able to:

- PC13.** arrange outage in coordination with the Network Operation Centre (NOC) before repair activities
- PC14.** use advanced multi-joiner fusion splicers to minimize signal loss during repair work

Qualification Pack

- PC15.** complete planned repair activities within defined timelines
- PC16.** conduct optical tests on spare fibers to confirm the effectiveness of repairs
- PC17.** follow necessary precautions when testing active fibers to prevent disruptions
- PC18.** escalate delays and unresolved issues as per organizational procedures

Carry out equipment maintenance at Points of Presence (POPs)

To be competent, the user/individual on the job must be able to:

- PC19.** perform periodic maintenance (monthly, quarterly, half-yearly) of equipment at POPs
- PC20.** maintain co-located electronic equipment and test alarms in coordination with NOC
- PC21.** ensure active fibers remain undisturbed during maintenance activities
- PC22.** conduct planned repairs on joints and terminations in coordination with NCC for link margin improvement
- PC23.** raise maintenance requests for third-party elements through the NOC

Record and report fiber test results

To be competent, the user/individual on the job must be able to:

- PC24.** maintain OFC/OTDR registers with records of all fiber tests conducted
- PC25.** maintain asset registers and track diesel oil usage at respective sites
- PC26.** dispatch OTDR test results to supervisors for network planning and monitoring
- PC27.** ensure all documents are available for inspection by appropriate authorities

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the applicable reporting and documentation procedures
- KU2.** the Standard Operating Procedures (SOPs) for the maintenance of fiber optics, POP equipment, and Synchronous Transport Modules (STMs)
- KU3.** the concept, elements, and importance of maintaining up-to-date as-built documentation
- KU4.** the procedures for maintaining task-specific documentation (e.g. patrolling register, OTDR register)
- KU5.** the standard maintenance processes for optical fiber cables (OFCs) and related equipment
- KU6.** the types of testing and repair procedures, including advanced fusion splicers and new OTDR/VFL techniques
- KU7.** OFC preventative maintenance techniques and industry best practices
- KU8.** the procedures for physical maintenance tasks and safe handling protocols to prevent fiber contamination
- KU9.** the principles of optical transport media and OFC communication
- KU10.** optical fiber wavelength bands, their usability, and loss characteristics
- KU11.** signal strength, quality KPIs, and measurement of attenuation/loss
- KU12.** optimal values for OTDR, power meter, and light meter test results
- KU13.** the proper trenching, cable laying, pit preparation, splicing, jointing, blowing, and backfilling processes for OFC installation
- KU14.** the types of OFC connectors based on equipment compatibility

Qualification Pack

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and interpret maintenance manuals, work orders, and safety instructions
- GS2.** maintain technical forms, logs, and records as per organizational format
- GS3.** communicate with supervisors, peers, and third-party vendors effectively
- GS4.** coordinate with authorities and report safety concerns proactively
- GS5.** prioritize and execute tasks in high-pressure situations
- GS6.** manage multiple tasks while ensuring adherence to timelines
- GS7.** utilize and maintain resources efficiently to prevent unnecessary downtime
- GS8.** apply troubleshooting skills to diagnose and resolve fiber optic issues
- GS9.** share knowledge with colleagues and junior technicians to improve team performance
- GS10.** escalate unresolved technical problems through appropriate communication channels

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Obtain maintenance schedule and patrol assigned route</i>	10	16	-	7
PC1. obtain as-built drawings from NOC/supervisors and identify the assigned maintenance route for Optical Fiber Cables (OFCs)	2	3	-	1
PC2. conduct patrolling and surveillance of OFC routes per the maintenance plan	2	3	-	1
PC3. monitor activities by third parties near the network to ensure the safety of OFCs	2	2	-	1
PC4. coordinate with authorities regarding planned construction/activity in the vicinity of OFCs	1	2	-	1
PC5. follow the applicable preventative maintenance measures and schedules to ensure the longevity and performance of OFCs	1	2	-	1
PC6. perform sample checks of as-built drawings	1	2	-	1
PC7. communicate any updates to as-built drawings to NOC/supervisors for documentation	1	2	-	1
<i>Carry out maintenance testing of dark/spare OFCs</i>	5	10	-	3
PC8. use advanced tools like Optical Time Domain Reflectometer (OTDR), Power Meter, Light Meter, and Visual Fault Locator (VFL) for maintenance testing	1	2	-	0.5
PC9. perform OTDR and power meter tests on all dark/spare fibers as per required periodicity	1	2	-	0.5
PC10. measure attenuation and loss to ensure adherence to network performance standards	1	2	-	1
PC11. interpret OTDR results to identify transmission losses and reflection points	1	2	-	0.5
PC12. advise the planning team on route strengthening based on test results	1	2	-	0.5
<i>Repair OFCs as per plan</i>	6	10	-	4

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. arrange outage in coordination with the Network Operation Centre (NOC) before repair activities	1	2	-	1
PC14. use advanced multi-joiner fusion splicers to minimize signal loss during repair work	1	2	-	0.5
PC15. complete planned repair activities within defined timelines	1	2	-	0.5
PC16. conduct optical tests on spare fibers to confirm the effectiveness of repairs	1	2	-	1
PC17. follow necessary precautions when testing active fibers to prevent disruptions	1	1	-	0.5
PC18. escalate delays and unresolved issues as per organizational procedures	1	1	-	0.5
<i>Carry out equipment maintenance at Points of Presence (POPs)</i>	5	8	-	4
PC19. perform periodic maintenance (monthly, quarterly, half-yearly) of equipment at POPs	1	2	-	1
PC20. maintain co-located electronic equipment and test alarms in coordination with NOC	1	2	-	1
PC21. ensure active fibers remain undisturbed during maintenance activities	1	2	-	1
PC22. conduct planned repairs on joints and terminations in coordination with NCC for link margin improvement	1	1	-	0.5
PC23. raise maintenance requests for third-party elements through the NOC	1	1	-	0.5
<i>Record and report fiber test results</i>	4	6	-	2
PC24. maintain OFC/OTDR registers with records of all fiber tests conducted	1	2	-	0.5
PC25. maintain asset registers and track diesel oil usage at respective sites	1	2	-	0.5
PC26. dispatch OTDR test results to supervisors for network planning and monitoring	1	1	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. ensure all documents are available for inspection by appropriate authorities	1	1	-	0.5
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6403
NOS Name	Undertake Condition based Maintenance and Planned Repair Activities
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	4
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

TEL/N6404: Perform Corrective Maintenance/Restoration of Optical Fiber Faults

Description

This unit focuses on corrective maintenance and fault management of OFCs to ensure high network availability and transmission quality.

Scope

The scope covers the following :

- Handle fault notifications
- Rectify faults at POPs
- Document and report the status

Elements and Performance Criteria

Handle fault notifications

To be competent, the user/individual on the job must be able to:

- PC1.** interpret fault notifications after obtaining them from the Network Operation Center (NOC)/supervisors
- PC2.** determine Turn Around Time (TAT) for rectification per Service Level Agreements (SLAs)
- PC3.** access and interpret the latest as-built drawings for fault location analysis
- PC4.** verify necessary tools and safety gear before heading to the fault location

Rectify faults at POPs

To be competent, the user/individual on the job must be able to:

- PC5.** use advanced test equipment (OTDR, power meter, light sources, precision cutters, etc.) for fiber testing and troubleshooting
- PC6.** identify fault location using OTDR traces, signal loss patterns, dispersion and Wavelength Division Multiplexing (WDM) analysis
- PC7.** interpret as-built drawings to locate physical sites and underground cable routes
- PC8.** coordinate excavation, cable pulling (if required), and preparation of jointing pits
- PC9.** conduct fiber splicing using proper techniques and advanced protection sleeves/connectors
- PC10.** analyze OTDR and power meter test results to assess splicing effectiveness
- PC11.** secure fiber joints with appropriate reinforcements like couplers, sleeves, and Fiber Reinforced Plastic (FRP)
- PC12.** evaluate the need for additional duct protection (e.g., RCC pipes, chambering) based on site conditions
- PC13.** oversee back-filling of trenches, ensuring structural integrity and adherence to environmental safety standards
- PC14.** verify fault rectification by performing final OTDR tests and confirming network stability
- PC15.** monitor and supervise activities to ensure adherence to SLAs and minimize downtime
- PC16.** escalate unresolved faults or significant delays following organizational policies

Qualification Pack

Document and report the status

To be competent, the user/individual on the job must be able to:

- PC17.** ensure accurate cable marking and placement of route markers for future maintenance
- PC18.** maintain comprehensive jointing records, including OTDR test reports and loss analysis
- PC19.** update all relevant documents, including as-built diagrams and OTDR registers
- PC20.** archive historical data for fault trends and preventive maintenance planning
- PC21.** comply with industry standards for documentation and reporting

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the applicable reporting and documentation standards
- KU2.** the SOPs for OFC maintenance
- KU3.** advanced OTDR functionalities and interpretation of traces
- KU4.** WDM fundamentals and troubleshooting techniques
- KU5.** fiber optics characteristics (refraction, polarization, attenuation, dispersion)
- KU6.** signal strength and quality Key Performance Indicators (KPIs)
- KU7.** proper fiber cable termination techniques, including the use of advanced protection sleeves and connectors
- KU8.** the best practices in trenching, splicing, jointing, blowing, and back-filling
- KU9.** the techniques for diagnosing and rectifying faults in optical fiber systems, using specialized tools
- KU10.** network design principles and fiber optic system integration
- KU11.** testing procedures for duct integrity, including air-tightness and kink-free tests
- KU12.** route and cable marking conventions for long-term maintenance
- KU13.** the compliance requirements for safe excavation and installation in various terrains
- KU14.** the environmental safety and risk management in fiber network maintenance
- KU15.** documentation management, including updating OTDR registers and as-built diagrams
- KU16.** emergency response protocols for optical fiber damage

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and interpret work orders, network diagrams, and safety instructions
- GS2.** complete technical forms and fault logs accurately
- GS3.** maintain organized records and documentation for audits and troubleshooting
- GS4.** communicate effectively with supervisors, field teams, and NOC personnel
- GS5.** use local language (where applicable) for field coordination
- GS6.** prioritize fault rectification based on network impact and SLA commitments
- GS7.** handle high-pressure situations and ensure timely issue resolution

Qualification Pack

- GS8.** adapt to new troubleshooting methods and advanced fiber testing technologies
- GS9.** manage multiple tasks efficiently, ensuring quality maintenance and compliance
- GS10.** foster teamwork and maintain effective working relationships across departments
- GS11.** follow safety and environmental guidelines in fiber maintenance operations
- GS12.** apply critical thinking and problem-solving skills for fault rectification

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Handle fault notifications</i>	6	10	-	4
PC1. interpret fault notifications after obtaining them from the Network Operation Center (NOC)/supervisors	2	3	-	1
PC2. determine Turn Around Time (TAT) for rectification per Service Level Agreements (SLAs)	2	3	-	1
PC3. access and interpret the latest as-built drawings for fault location analysis	1	2	-	1
PC4. verify necessary tools and safety gear before heading to the fault location	1	2	-	1
<i>Rectify faults at POPs</i>	18	30	-	12
PC5. use advanced test equipment (OTDR, power meter, light sources, precision cutters, etc.) for fiber testing and troubleshooting	2	3	-	1
PC6. identify fault location using OTDR traces, signal loss patterns, dispersion and Wavelength Division Multiplexing (WDM) analysis	2	3	-	1
PC7. interpret as-built drawings to locate physical sites and underground cable routes	2	3	-	1
PC8. coordinate excavation, cable pulling (if required), and preparation of jointing pits	2	3	-	1
PC9. conduct fiber splicing using proper techniques and advanced protection sleeves/connectors	2	3	-	1
PC10. analyze OTDR and power meter test results to assess splicing effectiveness	1	2	-	1
PC11. secure fiber joints with appropriate reinforcements like couplers, sleeves, and Fiber Reinforced Plastic (FRP)	2	3	-	1
PC12. evaluate the need for additional duct protection (e.g., RCC pipes, chambering) based on site conditions	1	2	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. oversee back-filling of trenches, ensuring structural integrity and adherence to environmental safety standards	1	2	-	1
PC14. verify fault rectification by performing final OTDR tests and confirming network stability	1	2	-	1
PC15. monitor and supervise activities to ensure adherence to SLAs and minimize downtime	1	2	-	1
PC16. escalate unresolved faults or significant delays following organizational policies	1	2	-	1
<i>Document and report the status</i>	6	10	-	4
PC17. ensure accurate cable marking and placement of route markers for future maintenance	2	2	-	1
PC18. maintain comprehensive jointing records, including OTDR test reports and loss analysis	1	2	-	1
PC19. update all relevant documents, including as-built diagrams and OTDR registers	1	2	-	1
PC20. archive historical data for fault trends and preventive maintenance planning	1	2	-	0.5
PC21. comply with industry standards for documentation and reporting	1	2	-	0.5
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6404
NOS Name	Perform Corrective Maintenance/Restoration of Optical Fiber Faults
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	4
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

TEL/N9111: Follow sustainability practices in telecom cabling operations

Description

This unit covers the application of sustainable and environmentally responsible practices in telecom cabling operations. It includes identifying recyclable and hazardous materials, implementing effective waste management strategies, optimizing resource usage, and ensuring compliance with environmental regulations.

Scope

The scope covers the following :

- Identify recyclable, reusable, and hazardous materials
- Follow waste management, recycling, and disposal protocols
- Optimize material and energy usage in cabling work
- Comply with environmental and regulatory standards

Elements and Performance Criteria

Identify recyclable, reusable, and hazardous materials

To be competent, the user/individual on the job must be able to:

- PC1.** identify different types of materials used in cabling operations, such as optical fiber, connectors, protective ducts, and joint enclosures
- PC2.** segregate materials into recyclable (e.g., plastic ducts, fiber offcuts, packaging), reusable (e.g., spare connectors, splitters), and hazardous (e.g., lead-based cables, old batteries, chemical adhesives) categories
- PC3.** follow workplace procedures for storing recyclable materials separately from hazardous and general waste
- PC4.** label and store hazardous waste safely to prevent contamination or accidents during handling and disposal
- PC5.** ensure all recyclable and hazardous waste is recorded in logs for traceability and compliance

Follow waste management, recycling, and disposal protocols

To be competent, the user/individual on the job must be able to:

- PC6.** adhere to applicable SOPs for safe handling and disposal of non-recyclable and hazardous materials, such as fiber shards, cable sheaths, and chemical adhesives
- PC7.** coordinate safe disposal of waste materials at designated collection points or through approved vendors, as per organizational policies and environmental guidelines
- PC8.** reduce waste by minimizing excess material use and reusing components wherever possible
- PC9.** maintain clean and organized work sites to prevent environmental contamination and promote workplace safety
- PC10.** check for and report any issues related to improper waste disposal, unauthorized dumping, or environmental hazards to the relevant authority

Optimize material and energy usage in cabling work

To be competent, the user/individual on the job must be able to:

Qualification Pack

- PC11.** plan cabling work to minimize material wastage by accurately measuring fiber optic lengths, ducts, and accessories before cutting or installing
- PC12.** use energy-efficient tools and machinery where possible, ensuring minimal power consumption without compromising work efficiency
- PC13.** ensure proper maintenance of cabling tools and equipment to reduce unnecessary repairs and replacements that contribute to waste
- PC14.** optimize the use of trenching and ducting by following efficient layout designs to minimize excavation and reduce material consumption
- PC15.** use and promote eco-friendly materials (such as low-impact protective coatings and biodegradable packaging) wherever feasible

Comply with environmental and regulatory standards

To be competent, the user/individual on the job must be able to:

- PC16.** follow national and local environmental laws, regulations, and workplace policies related to telecom cabling operations
- PC17.** maintain proper documentation of sustainability-related activities, including logs of disposed and recycled materials, to meet regulatory and audit requirements
- PC18.** conduct periodic self-audits to verify compliance with environmental policies
- PC19.** educate team members on best practices for sustainability, including waste segregation, material reuse, and responsible energy consumption
- PC20.** report any violations of environmental policies, hazardous material spills, or unsafe disposal practices to the designated supervisor or regulatory body

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational policies on sustainability, waste reduction, and material reuse in telecom infrastructure projects
- KU2.** the procedures for recycling, hazardous waste handling, and safe disposal of telecom-related materials
- KU3.** the importance of sustainability in long-term infrastructure planning, including the impact of telecom waste on the environment
- KU4.** the classification of materials used in optical fiber cabling, including recyclable, reusable, and hazardous components
- KU5.** standard waste management procedures for telecom operations, including segregation, labeling, and disposal methods
- KU6.** the methods to reduce material wastage, such as accurate measurements, careful handling of fiber optic cables, and optimized trenching techniques
- KU7.** the environmental hazards associated with improper disposal of optical fibers, batteries, and chemical adhesives
- KU8.** the regulations and compliance requirements for hazardous material disposal under national and international environmental laws
- KU9.** energy-efficient work practices, including low-power tools, optimized route planning, and reduced excavation techniques

Qualification Pack

- KU10.** the importance of proper record-keeping for disposal and recycling to ensure compliance and accountability

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively sustainability practices and compliance requirements to team members and supervisors
- GS2.** identify and implement solutions for reducing material wastage and improving recycling efforts
- GS3.** select the best disposal or recycling methods based on regulatory compliance and workplace policies
- GS4.** determine the environmental impact of cabling operations and suggest improvements
- GS5.** work effectively with waste management teams, regulatory bodies, and supervisors to ensure compliance
- GS6.** accurately document materials used, disposed of, or recycled for audit and compliance purposes
- GS7.** prioritize sustainability initiatives while meeting project deadlines
- GS8.** incorporate new sustainable materials and methods into existing work processes

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify recyclable, reusable, and hazardous materials</i>	8	15	-	5
PC1. identify different types of materials used in cabling operations, such as optical fiber, connectors, protective ducts, and joint enclosures	2	3	-	1
PC2. segregate materials into recyclable (e.g., plastic ducts, fiber offcuts, packaging), reusable (e.g., spare connectors, splitters), and hazardous (e.g., lead-based cables, old batteries, chemical adhesives) categories	2	3	-	1
PC3. follow workplace procedures for storing recyclable materials separately from hazardous and general waste	2	3	-	1
PC4. label and store hazardous waste safely to prevent contamination or accidents during handling and disposal	1	3	-	1
PC5. ensure all recyclable and hazardous waste is recorded in logs for traceability and compliance	1	3	-	1
<i>Follow waste management, recycling, and disposal protocols</i>	6	15	-	5
PC6. adhere to applicable SOPs for safe handling and disposal of non-recyclable and hazardous materials, such as fiber shards, cable sheaths, and chemical adhesives	2	3	-	1
PC7. coordinate safe disposal of waste materials at designated collection points or through approved vendors, as per organizational policies and environmental guidelines	1	3	-	1
PC8. reduce waste by minimizing excess material use and reusing components wherever possible	1	3	-	1
PC9. maintain clean and organized work sites to prevent environmental contamination and promote workplace safety	1	3	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. check for and report any issues related to improper waste disposal, unauthorized dumping, or environmental hazards to the relevant authority	1	3	-	1
<i>Optimize material and energy usage in cabling work</i>	8	10	-	5
PC11. plan cabling work to minimize material wastage by accurately measuring fiber optic lengths, ducts, and accessories before cutting or installing	2	2	-	1
PC12. use energy-efficient tools and machinery where possible, ensuring minimal power consumption without compromising work efficiency	2	2	-	1
PC13. ensure proper maintenance of cabling tools and equipment to reduce unnecessary repairs and replacements that contribute to waste	2	2	-	1
PC14. optimize the use of trenching and ducting by following efficient layout designs to minimize excavation and reduce material consumption	1	2	-	1
PC15. use and promote eco-friendly materials (such as low-impact protective coatings and biodegradable packaging) wherever feasible	1	2	-	1
<i>Comply with environmental and regulatory standards</i>	8	10	-	5
PC16. follow national and local environmental laws, regulations, and workplace policies related to telecom cabling operations	2	2	-	1
PC17. maintain proper documentation of sustainability-related activities, including logs of disposed and recycled materials, to meet regulatory and audit requirements	2	2	-	1
PC18. conduct periodic self-audits to verify compliance with environmental policies	2	2	-	1
PC19. educate team members on best practices for sustainability, including waste segregation, material reuse, and responsible energy consumption	1	2	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. report any violations of environmental policies, hazardous material spills, or unsafe disposal practices to the designated supervisor or regulatory body	1	2	-	1
NOS Total	30	50	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9111
NOS Name	Follow sustainability practices in telecom cabling operations
Sector	Telecom
Sub-Sector	
Occupation	Generic
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Qualification Pack

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	30/04/2025
Next Review Date	30/04/2028
NSQC Clearance Date	30/04/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(**Please note:** Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N4137.Coordinate Installation and Commissioning of Optical Fiber Cables (OFCs)	30	50	0	20	100	25
TEL/N6403.Undertake Condition based Maintenance and Planned Repair Activities	30	50	0	20	100	25
TEL/N6404.Perform Corrective Maintenance/Restoration of Optical Fiber Faults	30	50	0	20	100	25
TEL/N91111.Follow sustainability practices in telecom cabling operations	30	50	0	20	100	15
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	140	230	-	80	450	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NCVET	National Council for Vocational Education and Training
QP	Qualification Pack
MC	Model Curriculum
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills
TSSC	Telecom Sector Skill Council
TRAI	Telecom Regulatory Authority of India
LAN	Local Area Network
WAN	Wide Area Network
GI	Galvanized Iron
RCC	Reinforced Cement Concrete
PLB	Permanently Lubricated Duct
OTDR	Optical Time-Domain Reflectometer
OHS	Occupational Health and Safety
EPR	Earth Potential Rise
AT	Acceptance Testing
NOC	Network Operations Center
OFCs	Optical Fiber Cables

Qualification Pack

STMs	Synchronous Transport Modules
VFL	Visual Fault Locator
POPs	Points of Presence
NOC	Network Operation Center
TAT	Turn Around Time
SLAs	Service Level Agreements
KPIs	Key Performance Indicators
WDM	Wavelength Division Multiplexing
FRP	Fiber Reinforced Plastic

Qualification Pack

Glossary

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.
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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	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.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) 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 (GS)	Core skills or Generic Skills (GS) 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.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.