

Qualification Pack



Outside Plant Fiber Installation, Testing and Commissioning Supervisor

QP Code: TEL/Q4107

Version: 3.0

NSQF Level: 4

Telecom Sector Skill Council || 3rd Floor, Plot No 126, Sector - 44
Gurgaon - 122003

Qualification Pack

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TEL/Q4107: Outside Plant Fiber Installation, Testing and Commissioning Supervisor

Brief Job Description

An individual in this job role is responsible for on-site optical fibre installation activities adhering to the best practices for optical splicing, testing and safety compliances/measures on the field. They manage a team of splicers and technicians to achieve work completion within stipulated timelines and quality of service (QoS).

Personal Attributes

Good analytical skills, on-site problem-solving skills, attention to details and fair communication skills to interact with team members and higher-ups are required for the role.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [TEL/N4126: Handle fiber Constructs, Performance and Selection Criteria](#)
2. [TEL/N4127: Fiber connectorisation, splicing and first level checks](#)
3. [TEL/N4128: Outside Plant Cable Installation Procedures and Practices](#)
4. [TEL/N4129: Preparing Cables for Termination and Splicing](#)
5. [TEL/N4130: Outside Plant Fiber Testing and Troubleshooting](#)
6. [TEL/N4131: Work Safety Practices with Fiber Optics](#)
7. [TEL/N9101: Organize Work and Resources as per Health and Safety Standards](#)
8. [TEL/N9102: Interact Effectively with Team Members and Customers](#)
9. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure

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Country	India
NSQF Level	4
Credits	19
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7422.0804
Minimum Educational Qualification & Experience	12th grade Pass OR Completed 2nd year of the 3-year diploma after 10 OR Completed 2nd year of the 3-year diploma after 10 (Pursuing 2nd year of 3-year regular Diploma after 10th) OR 10th grade pass (with two years of any combination of NTC/NAC/CITS or equivalent) OR 8th grade pass with 2 year NTC plus 1 year NAC plus 1 year CITS OR 10th grade pass (and pursuing continuous schooling with no experience required) OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience
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	24/02/2025
NSQC Approval Date	24/02/2022
Version	3.0
Reference code on NQR	QG-04-TL-00457-2023-V1.1-TSSC
NQR Version	1.1

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TEL/N4126: Handle fiber Constructs, Performance and Selection Criteria

Description

This OS unit is about identifying and working with various fiber types, understanding specifications of passive components like Fiber Distribution Management System (FDMS), joint enclosure, patch chords, pigtailed, 0dB adapters, attenuators etc. and comply with use/deployment parameters.

Scope

The scope covers the following :

- Carry out Optical Fiber construction and transmission checks
- Identify fiber performance parameters
- Install suitable fiber types and identifiers
- Cable selection criteria

Elements and Performance Criteria

Carry out Optical Fiber construction and transmission checks

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

- PC1.** identify fiber cable construct (core, clad, buffer coating)
- PC2.** identify various cable components (fibers, strength members, jackets)
- PC3.** identify and work with strengthening members, rip cords and armored fibers
- PC4.** perform transmission checks for various types of fiber identified (multimode or single mode)

Identify fiber performance parameters

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

- PC5.** identify key performance parameters for an optical fiber (attenuation, fiber size and bandwidth)
- PC6.** gauge performance by reading characteristic chart/parameters
- PC7.** identify causes of attenuation (scattering, absorption, fiber bending radius and bending losses)
- PC8.** differentiate between speed and bandwidth
- PC9.** correlate between attenuation and wavelength

Identify suitable fiber types and identifiers

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

- PC10.** identify and differentiate various fiber types as per their construction (zip cord, distribution, loose tube, breakout)
- PC11.** identify and differentiate various fiber types as per use (armored, aerial, direct burial, underwater)
- PC12.** deploy suitable fiber type based on deployment and its characteristics
- PC13.** identify cables as per the standard color codes

Cable selection criteria

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

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- PC14.** select appropriate cable as per the criteria - pulling strength, water protection, rodent penetration
- PC15.** demonstrate grounding and bonding for armored cables

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the implication of induced potential and electrical hazards related to Electrical Traction Supply
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** escalation matrix for reporting identified incidents, troubleshooting and/or emergencies, e.g. system failures, fire and power failures
- KU4.** Safety Health and Environment (SHE) and Occupational Health and Safety (OHS) guidelines and regulations as per company norms
- KU5.** optical fiber as communication medium
- KU6.** basics of optical fiber manufacturing and construction
- KU7.** optical fiber light transmission basics
- KU8.** cause and effect of reflection and dispersion (modal, chromatic, polarization)
- KU9.** relevance of cut-off wavelength
- KU10.** types of fibers based on core structure - multi-mode and single mode fibers
- KU11.** optical fiber performance parameters and selection criteria
- KU12.** optical fiber specifications

Generic Skills (GS)

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

- GS1.** write system concepts and flows
- GS2.** maintain records and process documents
- GS3.** read and comprehend technical literature/parameters/performance graphs
- GS4.** read manuals, health and safety Instructions, memos, reports etc.
- GS5.** communicate with colleagues, peers and customers/stakeholders
- GS6.** liaise and coordinate with third party vendors or other stakeholders
- GS7.** plan and organize the work to achieve compliances and results
- GS8.** read customer interaction protocol

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out Optical Fiber construction and transmission checks</i>	8	16	-	7
PC1. identify fiber cable construct (core, clad, buffer coating)	2	4	-	1
PC2. identify various cable components (fibers, strength members, jackets)	2	4	-	2
PC3. identify and work with strengthening members, rip cords and armored fibers	2	4	-	2
PC4. perform transmission checks for various types of fiber identified (multimode or single mode)	2	4	-	2
<i>Identify fiber performance parameters</i>	10	15	-	5
PC5. identify key performance parameters for an optical fiber (attenuation, fiber size and bandwidth)	2	4	-	1
PC6. gauge performance by reading characteristic chart/parameters	2	4	-	1
PC7. identify causes of attenuation (scattering, absorption, fiber bending radius and bending losses)	2	2	-	1
PC8. differentiate between speed and bandwidth	2	3	-	1
PC9. correlate between attenuation and wavelength	2	2	-	1
<i>Identify suitable fiber types and identifiers</i>	8	14	-	6
PC10. identify and differentiate various fiber types as per their construction (zip cord, distribution, loose tube, breakout)	2	3	-	2
PC11. identify and differentiate various fiber types as per use (armored, aerial, direct burial, underwater)	2	4	-	2
PC12. deploy suitable fiber type based on deployment and its characteristics	2	4	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. identify cables as per the standard color codes	2	3	-	1
<i>Cable selection criteria</i>	4	5	-	2
PC14. select appropriate cable as per the criteria - pulling strength, water protection, rodent penetration	2	3	-	1
PC15. demonstrate grounding and bonding for armored cables	2	2	-	1
NOS Total	30	50	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4126
NOS Name	Handle fiber Constructs, Performance and Selection Criteria
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	5
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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TEL/N4127: Fiber connectorisation, splicing and first level checks

Description

This OS unit is about carrying out fiber end connections and splicing using various splicing techniques (mechanical, fusion, ribbon) and undertaking first level/immediate performance checks.

Scope

The scope covers the following :

- Connector types and their use
- Mechanical splicing
- Fusion splicing
- Ribbon splicing
- First level/immediate performance checks
- Report and record

Elements and Performance Criteria

Connector types and their use

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

- PC1.** identify connectors on basis of colour code (TIA 568)
- PC2.** select a particular type of connector (ST, SC, FC/PC, MT, LC) for a given use
- PC3.** demonstrate the effect of polish type (Flat, PC, UPC, APC) on the connector performance
- PC4.** perform connector termination on field environment (use of termination tools, cable tools and test equipment) including connector inspection and cleaning

Mechanical splicing

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

- PC5.** demonstrate fiber preparation for splicing (strip jacket, dressing buffer tubes and fibers, strength members, removal of buffer coating)
- PC6.** demonstrate fiber cleaning
- PC7.** demonstrate fiber cleaving
- PC8.** demonstrate mechanical splicing (Elastomeric)

Fusion splicing

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

- PC9.** demonstrate fiber preparation for fusion splicing as per process provided in mechanical splicing
- PC10.** demonstrate use of splicing equipment, selection of correct splicing program, arc calibration, dust check and cleaning of clamp/grooves
- PC11.** demonstrate fusion splicing on the splicing machine

Ribbon splicing

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

- PC12.** demonstrate fiber preparation for ribbon splicing (use of ribbon jacket stripper)

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PC13. demonstrate ribbon cleaving (using ribbon cleaver)

PC14. demonstrate ribbon splicing

First level/immediate performance checks

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

PC15. demonstrate first level/immediate (post splicing) checks (using VFL, OTDR)

PC16. demonstrate splice evaluation (white line, offset, diameter difference, bubble, bulge etc.)

PC17. identify common problems and likely causes, for an improper splicing

Report and records

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

PC18. comprehend the data recording and reporting formats

PC19. perform basic documentation process like recording test results, performance parameters, cable and drum markings etc.

PC20. submit the records and documents to appropriate authorities to inspect

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organizational policies and processes related to area of work

KU2. risk and impact of not following defined procedures/work instructions

KU3. escalation matrix for reporting issues/incidents/concerns

KU4. records and reports

KU5. Safety Health and Environment (SHE) and Occupational Health and Safety (OHS) guidelines and regulations as per company norms

KU6. types of cable connectors

KU7. losses and attenuations (dB/dBm)

KU8. optical loss limiting techniques and processes

KU9. functioning of stripping, cleaving and splicers

KU10. performance measurement techniques and corrective actions

Generic Skills (GS)

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

GS1. read and interpret necessary documents

GS2. read and understand manuals, requirement documents, operational health and safety instructions, memos, reports etc.

GS3. read and comprehend/understand material specifications

GS4. communicate with colleagues, peers and supervisor

GS5. liaise and coordinate with third party vendors/other stakeholders

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Connector types and their use</i>	6	11	-	4
PC1. identify connectors on basis of colour code (TIA 568)	1	3	-	1
PC2. select a particular type of connector (ST, SC, FC/PC, MT, LC) for a given use	1	2	-	1
PC3. demonstrate the effect of polish type (Flat, PC, UPC, APC) on the connector performance	2	3	-	1
PC4. perform connector termination on field environment (use of termination tools, cable tools and test equipment) including connector inspection and cleaning	2	3	-	1
<i>Mechanical splicing</i>	4	9	-	4
PC5. demonstrate fiber preparation for splicing (strip jacket, dressing buffer tubes and fibers, strength members, removal of buffer coating)	1	3	-	1
PC6. demonstrate fiber cleaning	1	3	-	1
PC7. demonstrate fiber cleaving	1	1	-	1
PC8. demonstrate mechanical splicing (Elastomeric)	1	2	-	1
<i>Fusion splicing</i>	7	12	-	3
PC9. demonstrate fiber preparation for fusion splicing as per process provided in mechanical splicing	2	4	-	1
PC10. demonstrate use of splicing equipment, selection of correct splicing program, arc calibration, dust check and cleaning of clamp/grooves	2	4	-	1
PC11. demonstrate fusion splicing on the splicing machine	3	4	-	1
<i>Ribbon splicing</i>	6	6	-	3

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. demonstrate fiber preparation for ribbon splicing (use of ribbon jacket stripper)	2	2	-	1
PC13. demonstrate ribbon cleaving (using ribbon cleaver)	2	2	-	1
PC14. demonstrate ribbon splicing	2	2	-	1
<i>First level/immediate performance checks</i>	5	6	-	3
PC15. demonstrate first level/immediate (post splicing) checks (using VFL, OTDR)	2	2	-	1
PC16. demonstrate splice evaluation (white line, offset, diameter difference, bubble, bulge etc.)	2	2	-	1
PC17. identify common problems and likely causes, for an improper splicing	1	2	-	1
<i>Report and records</i>	2	6	-	3
PC18. comprehend the data recording and reporting formats	1	2	-	1
PC19. perform basic documentation process like recording test results, performance parameters, cable and drum markings etc.	1	2	-	1
PC20. submit the records and documents to appropriate authorities to inspect	-	2	-	1
NOS Total	30	50	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4127
NOS Name	Fiber connectorisation, splicing and first level checks
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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TEL/N4128: Outside Plant Cable Installation Procedures and Practices

Description

This OS unit is about outside plant installation procedures and practices for optical fiber cables.

Scope

The scope covers the following :

- Pre-installation checks and processes
- Direct buried installation
- Underground (duct) installation
- Aerial installation

Elements and Performance Criteria

Pre-installation checks and processes

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

- PC1.** carry out pre-construction survey of the cable placing route and identify all probable pit-falls and account for them
- PC2.** perform pre-test of optical cable using an OTDR
- PC3.** undertake pre-installation cable inspection to identify any visible damage or non-compliances
- PC4.** confirm basic parameters like maximum pulling tension, bending radius, total cable length, splicing length required at termination points
- PC5.** demonstrate duct rodding, testing and cleaning process/procedure

Direct buried installation

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

- PC6.** select appropriate cable for direct buried (single jacket, dual jacket) as per site requirements
- PC7.** demonstrate armor bonding and grounding
- PC8.** handle cable while bending and placing tension
- PC9.** perform cable laying and trench compacting practices and placement of markers
- PC10.** carry out reinstatements

Underground (duct) installation

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

- PC11.** demonstrate best practices in duct cable pulling using proper tools and accessories (pulling rope, cable pulling grip, breakaway swivel)
- PC12.** demonstrate cable reel positioning and pulling
- PC13.** demonstrate 'figure-8' winding/storing of cable
- PC14.** perform cable blowing process (wing compressed air)
- PC15.** test duct integration, duct fill ratio, co-efficient of friction and their effect on cable laying/longevity

Aerial installation

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

- PC16.** demonstrate specific construction of aerial cables making them suitable for such deployment
- PC17.** demonstrate cable handling practices for aerial cables (bending radius, placing tension)
- PC18.** demonstrate use and uniqueness of messenger strand
- PC19.** demonstrate deployment and use of self-supporting cables
- PC20.** demonstrate deployment process for aerial cable

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** work and time management
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** escalation matrix for reporting identified incidents, troubles and/or emergencies, e.g. system failures, fire and power failures
- KU4.** clearances/in-building authority approvals that are required prior to carry out the installation work
- KU5.** Safety Health and Environment (SHE) and Occupational Health and Safety (OHS) guidelines and regulations as per company norms
- KU6.** various types of optical fiber cable constructs
- KU7.** suitability of deployment of optical fiber cables given a specific requirement
- KU8.** importance of safe/correct handling and negative effects on exceeding parameters like bend radius etc
- KU9.** handling of key equipment and their characteristics (blowing equipment, cable pulling tools etc)
- KU10.** need for proper trenching, ducting, aerial messages/supports and best practices

Generic Skills (GS)

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

- GS1.** read and interpret necessary documents
- GS2.** read and understand manuals, requirement documents, operational health and safety instructions, memos, reports etc.
- GS3.** read and comprehend/understand material specifications
- GS4.** communicate with colleagues, peers and supervisor
- GS5.** liaise and coordinate with third party vendors/other stakeholders

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pre-installation checks and processes</i>	6	12	-	3
PC1. carry out pre-construction survey of the cable placing route and identify all probable pit-falls and account for them	2	1	-	1
PC2. perform pre-test of optical cable using an OTDR	2	3	-	1
PC3. undertake pre-installation cable inspection to identify any visible damage or non-compliances	-	5	-	1
PC4. confirm basic parameters like maximum pulling tension, bending radius, total cable length, splicing length required at termination points	2	1	-	-
PC5. demonstrate duct rodding, testing and cleaning process/procedure	-	2	-	-
<i>Direct buried installation</i>	6	14	-	2
PC6. select appropriate cable for direct buried (single jacket, dual jacket) as per site requirements	3	2	-	1
PC7. demonstrate armor bonding and grounding	1	2	-	1
PC8. handle cable while bending and placing tension	-	4	-	-
PC9. perform cable laying and trench compacting practices and placement of markers	-	4	-	-
PC10. carry out reinstatements	2	2	-	-
<i>Underground (duct) installation</i>	4	21	-	2
PC11. demonstrate best practices in duct cable pulling using proper tools and accessories (pulling rope, cable pulling grip, breakaway swivel)	-	3	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. demonstrate cable reel positioning and pulling	2	5	-	-
PC13. demonstrate 'figure-8' winding/storing of cable	-	4	-	1
PC14. perform cable blowing process (wing compressed air)	-	6	-	-
PC15. test duct integration, duct fill ratio, coefficient of friction and their effect on cable laying/longevity	2	3	-	-
<i>Aerial installation</i>	14	13	-	3
PC16. demonstrate specific construction of aerial cables making them suitable for such deployment	4	5	-	1
PC17. demonstrate cable handling practices for aerial cables (bending radius, placing tension)	3	3	-	1
PC18. demonstrate use and uniqueness of messenger strand	3	2	-	1
PC19. demonstrate deployment and use of self-supporting cables	2	2	-	-
PC20. demonstrate deployment process for aerial cable	2	1	-	-
NOS Total	30	60	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4128
NOS Name	Outside Plant Cable Installation Procedures and Practices
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	3
Credits	2
Version	4.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQF Clearance Date	24/02/2022

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TEL/N4129: Preparing Cables for Termination and Splicing

Description

This OS unit is about outside plant installation procedures and practices for optical fiber cables.

Scope

The scope covers the following :

- Fiber optic cable preparation
- Fiber optic cable handling
- Cable slack management

Elements and Performance Criteria

Fiber optic cable preparation

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

- PC1.** demonstrate cable preparation (removal of outer jacket, use of rip-cord, identifying and dressing strength member)
- PC2.** demonstrate use of Kellum's grip
- PC3.** demonstrate use of armoured cable cutter

Fiber optic cable handling

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

- PC4.** demonstrate correct cable drum position
- PC5.** perform cable handling procedure/process whilst lifting drums, shifting cables, handling with fork-lifts
- PC6.** demonstrate correct positioning and rolling of drums
- PC7.** unload and store the cable drums

Cable slack management

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

- PC8.** calculate the slack requirement as per standard practices
- PC9.** demonstrate securing of slack is slack brackets

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational processes and procedures for cable handling, termination and splicing
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** organizational norms on record keeping and accounting
- KU4.** Safety Health and Environment (SHE) and Occupational Health and Safety (OHS) guidelines and regulations as per company norms
- KU5.** effect of cable parameters on performance

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- KU6.** relevance of proper slack management
- KU7.** cable handling practices (drum handling, fork-lifts loading/unloading of drums)
- KU8.** effect of cable laying practices on performance

Generic Skills (GS)

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

- GS1.** read and interpret necessary documents
- GS2.** read and understand manuals, requirement documents, operational health and safety instructions, memos, reports etc.
- GS3.** read and comprehend/understand material specifications
- GS4.** communicate with colleagues, peers and supervisor
- GS5.** liaise and coordinate with third party vendors/other stakeholders

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Fiber optic cable preparation</i>	12	19	-	3
PC1. demonstrate cable preparation (removal of outer jacket, use of rip-cord, identifying and dressing strength member)	5	7	-	1
PC2. demonstrate use of Kellum's grip	4	6	-	1
PC3. demonstrate use of armoured cable cutter	3	6	-	1
<i>Fiber optic cable handling</i>	12	31	-	5
PC4. demonstrate correct cable drum position	3	6	-	1
PC5. perform cable handling procedure/process whilst lifting drums, shifting cables, handling with fork-lifts	4	8	-	2
PC6. demonstrate correct positioning and rolling of drums	3	9	-	1
PC7. unload and store the cable drums	2	8	-	1
<i>Cable slack management</i>	6	10	-	2
PC8. calculate the slack requirement as per standard practices	2	4	-	1
PC9. demonstrate securing of slack is slack brackets	4	6	-	1
NOS Total	30	60	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4129
NOS Name	Preparing Cables for Termination and Splicing
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	5
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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TEL/N4130: Outside Plant Fiber Testing and Troubleshooting

Description

This OS unit is about outside plant fiber testing and troubleshooting including use of all associated test equipment.

Scope

The scope covers the following :

- Fiber test parameters
- Test equipment (OTDR, Optic Power Meter, OLTS kit, VFL, fiber tracer)
- Report and Record

Elements and Performance Criteria

Fiber test parameters

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

- PC1.** demonstrate measurement of optical parameters (optical power, attenuation at fiber cables/connectors, fault location)
- PC2.** perform optical power and power loss measurement of an optical cable

Test Equipment (OTDR, Optic Power Meter, OLTS kit, VFL, fiber tracer)

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

- PC3.** demonstrate use of various devices (OTDR, optical power meter, visual cable fault locator, OLTS, visual inspection test (use of fiber tracer)
- PC4.** demonstrate visual inspection test of connectors using a microscope
- PC5.** demonstrate two cable and three cable tests for loss measurement
- PC6.** demonstrate insertion loss measurement using patch cord test and double ended loss technique

Report and Record

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

- PC7.** record cable performance and test parameters like power, attenuation etc
- PC8.** record cable inspection parameters as per the company policy/format provided
- PC9.** ensure documents are available to all appropriate authorities to inspect

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational processes and procedures for undertaking tests and troubleshooting
- KU2.** risk and impact of not following defined procedures/work instructions
- KU3.** organizational norms and guidelines on the subject



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- KU4.** Safety Health and Environment (SHE) and Occupational Health and Safety (OHS) guidelines and regulations as per company norms
- KU5.** optical power and power loss
- KU6.** measurement units (db & dbm) and decibel to power conversions
- KU7.** optical fiber power meters and test sources
- KU8.** effect of cable laying practices on performance
- KU9.** loss measurement references and measuring techniques

Generic Skills (GS)

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

- GS1.** read and interpret necessary documents
- GS2.** read and understand manuals, requirement documents, operational health and safety instructions, memos, reports etc.
- GS3.** read and comprehend/understand material specifications
- GS4.** communicate with colleagues, peers and supervisor
- GS5.** liaise and coordinate with third party vendors/other stakeholders

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Fiber test parameters</i>	5	11	-	4
PC1. demonstrate measurement of optical parameters (optical power, attenuation at fiber cables/connectors, fault location)	3	6	-	2
PC2. perform optical power and power loss measurement of an optical cable	2	5	-	2
<i>Test Equipment (OTDR, Optic Power Meter, OLTS kit, VFL, fiber tracer)</i>	11	26	-	10
PC3. demonstrate use of various devices (OTDR, optical power meter, visual cable fault locator, OLTS, visual inspection test (use of fiber tracer)	4	3	-	3
PC4. demonstrate visual inspection test of connectors using a microscope	2	4	-	2
PC5. demonstrate two cable and three cable tests for loss measurement	2	8	-	2
PC6. demonstrate insertion loss measurement using patch cord test and double ended loss technique	3	11	-	3
<i>Report and Record</i>	9	18	-	6
PC7. record cable performance and test parameters like power, attenuation etc	2	6	-	2
PC8. record cable inspection parameters as per the company policy/format provided	4	5	-	2
PC9. ensure documents are available to all appropriate authorities to inspect	3	7	-	2
NOS Total	25	55	-	20

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4130
NOS Name	Outside Plant Fiber Testing and Troubleshooting
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	4
Credits	3
Version	3.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

TEL/N4131: Work Safety Practices with Fiber Optics

Description

This OS unit is about work safety practices whilst working with fiber optics.

Scope

The scope covers the following :

- Work safety practices whilst working with fiber optics

Elements and Performance Criteria

Work safety practices whilst working with fiber optics

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

- PC1.** demonstrate eye-safety measures whilst at work
- PC2.** demonstrate safe handling of bare fiber (broken ends of fiber and scraps)
- PC3.** demonstrate fire safety practices (whilst working with high voltage arc in fusion splicers)
- PC4.** demonstrate electrical safety norms where fiber is placed along with electrical cables
- PC5.** adhere to laser safety rules
- PC6.** demonstrate use of safety gloves and boots, in required situations
- PC7.** complete any health and safety records legibly and accurately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** manufacturer supplied MSDS for safe handling of fiber
- KU2.** legislative requirements and organizations procedures for health, safety and security and role and responsibilities
- KU3.** different types of health and safety hazards that can be found in the workplace
- KU4.** limits of your responsibility for dealing with hazards
- KU5.** different emergency situations and the importance of following emergency procedures
- KU6.** the importance of maintaining high standards of health, safety and security
- KU7.** implications that any non compliance with health, safety and security may have on individuals and the organization
- KU8.** construction of the fiber and protection of fiber from outside environment
- KU9.** safety features of protective equipment and gear
- KU10.** limitations of safety gear
- KU11.** government agencies in the area of safety, health and security and their norms and services along with their contact detail
- KU12.** layout of associated services in the work area (gas pipeline, electrical cables, sewage lines, water pipeline etc) so as to avoid consequential damage



Qualification Pack

Generic Skills (GS)

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

- GS1.** read and interpret necessary documents
- GS2.** read and understand manuals, requirement documents, operational health and safety instructions, memos, reports etc.
- GS3.** read and comprehend/understand material specifications
- GS4.** communicate with colleagues, peers and supervisor
- GS5.** liaise and coordinate with third party vendors/other stakeholders

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Work safety practices whilst working with fiber optics</i>	40	50	-	10
PC1. demonstrate eye-safety measures whilst at work	4	9	-	1
PC2. demonstrate safe handling of bare fiber (broken ends of fiber and scraps)	6	9	-	2
PC3. demonstrate fire safety practices (whilst working with high voltage arc in fusion splicers)	4	9	-	2
PC4. demonstrate electrical safety norms where fiber is placed along with electrical cables	6	8	-	1
PC5. adhere to laser safety rules	8	5	-	1
PC6. demonstrate use of safety gloves and boots, in required situations	6	5	-	1
PC7. complete any health and safety records legibly and accurately	6	5	-	2
NOS Total	40	50	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N4131
NOS Name	Work Safety Practices with Fiber Optics
Sector	Telecom
Sub-Sector	Passive Infrastructure
Occupation	Operations and Maintenance - Passive Infrastructure
NSQF Level	3
Credits	3
Version	4.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

TEL/N9101: Organize Work and Resources as per Health and Safety Standards

Description

This OS unit is about planning work and following sustainable as well as healthy practices for safety and optimal use of resources.

Scope

The scope covers the following :

- Perform work as per quality standards
- Maintain safe, healthy and secure working environment
- Conserve material/energy/electricity
- Use effective waste management/recycling practices

Elements and Performance Criteria

Perform work as per quality standards

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

- PC1.** keep workspace clean and tidy
- PC2.** perform individual role and responsibilities as per the job role while taking accountability for the work
- PC3.** record/document tasks completed as per the requirements within specific timelines
- PC4.** implement schedules to ensure timely completion of tasks
- PC5.** identify the cause of a problem related to own work and validate it
- PC6.** analyse problems accurately and communicate different possible solutions to the problem

Maintain safe, healthy and secure working environment

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

- PC7.** comply with organisation's current health, safety, security policies and procedures
- PC8.** check for water spills in and around the work space and escalate these to the appropriate authority
- PC9.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- PC10.** use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.
- PC11.** avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence
- PC12.** identify hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority
- PC13.** participate regularly in fire drills or other safety related workshops organised by the company
- PC14.** report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected

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- PC15.** maintain appropriate posture while sitting/standing for long hours
- PC16.** handle heavy and hazardous materials with care, while maintaining appropriate posture
- PC17.** sanitize workstation and equipment regularly
- PC18.** clean hands with soap, alcohol-based sanitizer regularly
- PC19.** avoid contact with anyone suffering from communicable diseases and take necessary precautions
- PC20.** take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.
- PC21.** report hygiene and sanitation issues to appropriate authority
- PC22.** follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.

Conserve material/energy/electricity

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

- PC23.** optimize usage of material including water in various tasks/activities/processes
- PC24.** use resources such as water, electricity and others responsibly
- PC25.** carry out routine cleaning of tools, machine and equipment
- PC26.** optimize use of electricity/energy in various tasks/activities/processes
- PC27.** perform periodic checks of the functioning of the equipment/machine and rectify wherever required
- PC28.** report malfunctioning and lapses in maintenance of equipment
- PC29.** use electrical equipment and appliances properly

Use effective waste management/recycling practices

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

- PC30.** identify recyclable, non-recyclable and hazardous waste
- PC31.** deposit recyclable and reusable material at identified location
- PC32.** dispose non-recyclable and hazardous waste as per recommended processes

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** strategies pertinent to their field (such as internet searches, asking peers and managers, enrolling for courses and certifications, etc.) that can be used to pursue an advancement in their skills
- KU2.** key performance indicators for the new tasks
- KU3.** feedback processes and formats
- KU4.** timelines and goals as well as their relevance to work allocated
- KU5.** importance of quality and timely delivery of the product/service
- KU6.** escalation matrix and its importance, especially in case of emergencies
- KU7.** ways of time and cost management
- KU8.** rules/regulation for maintaining health and safety at workplace

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- KU9.** meaning of hazard, different types of health and safety hazards found in the workplace, risks and threats based on the nature of work
- KU10.** relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- KU11.** procedures to report breaches in health, safety and security
- KU12.** organisation's procedures for different emergency situations and the importance of following the same
- KU13.** different methods of cleaning, disinfection, sterilization, and sanitization
- KU14.** significance of personal hygiene practice including hand hygiene
- KU15.** path of disease transmission
- KU16.** correct method of donning and doffing of PPE
- KU17.** ways of managing resources and material efficiently
- KU18.** common electrical problems and common practices of conserving electricity
- KU19.** categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics and use of different colours of dustbins
- KU20.** organisation's procedures for minimizing waste
- KU21.** waste management and methods of waste disposal
- KU22.** common sources of pollution and ways to minimize it

Generic Skills (GS)

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

- GS1.** improve and modify work practices
- GS2.** complete tasks efficiently and accurately within stipulated time
- GS3.** develop skills and mastery of the technologies prevalent in the industry
- GS4.** write in at least one language and complete written work with attention to detail
- GS5.** utilize time and manage workload efficiently
- GS6.** read and comprehend instructions and documents
- GS7.** accept feedback in a constructive way
- GS8.** seek clarifications from superior about the job requirement
- GS9.** read and comprehend statutory documents relevant to safety and hygiene
- GS10.** refer all anomalies to the concerned persons
- GS11.** analyze situations and make appropriate decisions
- GS12.** decide the most suitable course of action for completing the task within resources

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform work as per quality standards</i>	4	9	-	2
PC1. keep workspace clean and tidy	-	1	-	-
PC2. perform individual role and responsibilities as per the job role while taking accountability for the work	1	1	-	1
PC3. record/document tasks completed as per the requirements within specific timelines	-	1	-	1
PC4. implement schedules to ensure timely completion of tasks	-	2	-	-
PC5. identify the cause of a problem related to own work and validate it	2	2	-	-
PC6. analyse problems accurately and communicate different possible solutions to the problem	1	2	-	-
<i>Maintain safe, healthy and secure working environment</i>	16	27	-	4
PC7. comply with organisation's current health, safety, security policies and procedures	1	1	-	-
PC8. check for water spills in and around the work space and escalate these to the appropriate authority	1	2	-	1
PC9. report any identified breaches in health, safety, and security policies and procedures to the designated person	1	2	-	1
PC10. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.	1	2	-	1
PC11. avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence	2	3	-	1
PC12. identify hazards such as illness, accidents, fires or any other natural calamity safely, as per organisation's emergency procedures, within the limits of individual's authority	2	1	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. participate regularly in fire drills or other safety related workshops organised by the company	1	3	-	-
PC14. report any hazard outside the individual's authority to the relevant person in line with organisational procedures and warn others who may be affected	1	3	-	-
PC15. maintain appropriate posture while sitting/standing for long hours	1	1	-	-
PC16. handle heavy and hazardous materials with care, while maintaining appropriate posture	1	1	-	-
PC17. sanitize workstation and equipment regularly	1	2	-	-
PC18. clean hands with soap, alcohol-based sanitizer regularly	-	1	-	-
PC19. avoid contact with anyone suffering from communicable diseases and take necessary precautions	-	1	-	-
PC20. take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.	1	2	-	-
PC21. report hygiene and sanitation issues to appropriate authority	1	1	-	-
PC22. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with a bent elbow while coughing/sneezing, using PPE, etc.	1	1	-	-
<i>Conserve material/energy/electricity</i>	7	16	-	3
PC23. optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC24. use resources such as water, electricity and others responsibly	1	2	-	1
PC25. carry out routine cleaning of tools, machine and equipment	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. optimize use of electricity/energy in various tasks/activities/processes	1	3	-	1
PC27. perform periodic checks of the functioning of the equipment/machine and rectify wherever required	1	3	-	1
PC28. report malfunctioning and lapses in maintenance of equipment	1	2	-	-
PC29. use electrical equipment and appliances properly	1	2	-	-
<i>Use effective waste management/recycling practices</i>	3	8	-	1
PC30. identify recyclable, non-recyclable and hazardous waste	1	2	-	1
PC31. deposit recyclable and reusable material at identified location	1	3	-	-
PC32. dispose non-recyclable and hazardous waste as per recommended processes	1	3	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9101
NOS Name	Organize Work and Resources as per Health and Safety Standards
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

TEL/N9102: Interact Effectively with Team Members and Customers

Description

This OS unit is about interacting with superiors and colleagues as well as customers and other stakeholders in own or other work groups within as well as outside the organisation.

Scope

The scope covers the following :

- Interact effectively with superiors
- Interact effectively with colleagues and customers
- Respect differences of gender and ability

Elements and Performance Criteria

Interact effectively with superiors

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

- PC1.** receive work requirements from superiors and customers and interpret them correctly
- PC2.** inform the supervisor and/or concerned person about any unforeseen disruptions or delays
- PC3.** participate in decision making by providing facts and figures, giving/accepting constructive suggestions
- PC4.** rectify errors as per feedback and ensure the errors are not repeated

Interact effectively with colleagues and customers

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

- PC5.** comply with organisation's policies and procedures for working with team members
- PC6.** communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written
- PC7.** respond to queries and seek/provide clarifications if required
- PC8.** co-ordinate with team to integrate work as per requirements
- PC9.** resolve conflicts within the team/with customers to achieve smooth workflow
- PC10.** recognize emotions accurately in self and others to build good relationships
- PC11.** prioritize team and organization goals above personal goals

Respect differences of gender and ability

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

- PC12.** maintain a conducive environment for all the genders at the workplace
- PC13.** encourage appropriate behavior and conduct with people across gender
- PC14.** assist team members with disability in overcoming any challenges faced in work
- PC15.** practice appropriate verbal and non-verbal communication while interacting with People with Disability (PwD)
- PC16.** ensure equal participation of the people across genders in discussions

Knowledge and Understanding (KU)

Qualification Pack

The individual on the job needs to know and understand:

- KU1.** organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc.
- KU2.** organisation's hierarchy and escalation matrix
- KU3.** importance of establishing good working relationships with colleagues and superiors
- KU4.** importance of helping colleagues with problems, in order to meet quality and time standards as a team
- KU5.** different means and methods of communication
- KU6.** different types of information that colleagues might need and the importance of providing this information in an appropriate manner
- KU7.** organisation's policies and procedures for working with colleagues and superiors
- KU8.** importance of understanding consequences of gender biased behaviour
- KU9.** gender based concepts, issues and legislation
- KU10.** organisation standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the statutory bodies and the right way to use them including various medical conditions associated with PwD
- KU11.** health and safety requirements at workplace for PwD
- KU12.** process of recruiting people for a particular job profile w.r.t PwD and gender
- KU13.** various government/private schemes and benefits available for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD

Generic Skills (GS)

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

- GS1.** read and comprehend forms, documents and records
- GS2.** read and write in English and/or local language
- GS3.** complete work with attention to detail
- GS4.** listen effectively and orally communicate information
- GS5.** work as per customer requirements
- GS6.** communicate with empathy across genders and PwD
- GS7.** improve and modify work practices
- GS8.** maintain positive and effective relationships with colleagues and customers
- GS9.** evaluate the possible solution(s) to the problem

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact effectively with superiors</i>	7	15	-	2
PC1. receive work requirements from superiors and customers and interpret them correctly	1	2	-	-
PC2. inform the supervisor and/or concerned person about any unforeseen disruptions or delays	2	4	-	1
PC3. participate in decision making by providing facts and figures, giving/accepting constructive suggestions	2	5	-	1
PC4. rectify errors as per feedback and ensure the errors are not repeated	2	4	-	-
<i>Interact effectively with colleagues and customers</i>	7	26	-	4
PC5. comply with organisation's policies and procedures for working with team members	1	2	-	-
PC6. communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written	2	4	-	1
PC7. respond to queries and seek/provide clarifications if required	2	4	-	1
PC8. co-ordinate with team to integrate work as per requirements	-	3	-	-
PC9. resolve conflicts within the team/with customers to achieve smooth workflow	1	5	-	1
PC10. recognize emotions accurately in self and others to build good relationships	1	4	-	-
PC11. prioritize team and organization goals above personal goals	-	4	-	1
<i>Respect differences of gender and ability</i>	11	24	-	4
PC12. maintain a conducive environment for all the genders at the workplace	2	5	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. encourage appropriate behavior and conduct with people across gender	2	5	-	1
PC14. assist team members with disability in overcoming any challenges faced in work	3	4	-	1
PC15. practice appropriate verbal and non-verbal communication while interacting with People with Disability (PWD)	2	4	-	1
PC16. ensure equal participation of the people across genders in discussions	2	6	-	-
NOS Total	25	65	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N9102
NOS Name	Interact Effectively with Team Members and Customers
Sector	Telecom
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	1
Version	2.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 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
- Career Development & Goal Setting
- 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.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

Qualification Pack

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

Qualification Pack

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

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 English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings



Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization 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. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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.

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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/N4126.Handle fiber Constructs, Performance and Selection Criteria	30	50	-	20	100	12
TEL/N4127.Fiber connectorisation, splicing and first level checks	30	50	-	20	100	12
TEL/N4128.Outside Plant Cable Installation Procedures and Practices	30	60	-	10	100	12
TEL/N4129.Preparing Cables for Termination and Splicing	30	60	-	10	100	12
TEL/N4130.Outside Plant Fiber Testing and Troubleshooting	25	55	-	20	100	12
TEL/N4131.Work Safety Practices with Fiber Optics	40	50	-	10	100	12
TEL/N9101.Organize Work and Resources as per Health and Safety Standards	30	60	-	10	100	12
TEL/N9102.Interact Effectively with Team Members and Customers	25	65	-	10	100	12
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	4
Total	260	480	-	110	850	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

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.

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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.