

## Qualification Pack



# Telecom Rigger - 5G and Legacy Networks

QP Code: TEL/Q6212

Version: 2.0

NSQF Level: 3

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

## Qualification Pack

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## Qualification Pack

# TEL/Q6212: Telecom Rigger - 5G and Legacy Networks

## Brief Job Description

A Telecom Rigger - 5G and Legacy Networks works under supervision and is responsible for assisting in the installation and maintenance of telecom equipment on telecom structures and towers by using rigging and other installation related skills. The individual also assists in upgrading, dismantling and removing telecom equipment and cabling as per the requirement.

## Personal Attributes

The individual must be physically fit to climb towers and work for long durations. The person must have problem-solving skills with the ability to work in coordination with others. The individual should be able to communicate appropriately, both verbally and in writing.

## Applicable National Occupational Standards (NOS)

### Compulsory NOS:

1. [TEL/N6310: Assist in the Installation of Telecom Equipment](#)
2. [TEL/N6323: Assist in the Maintenance, Upgrade and Decommissioning of Telecom Equipment and Sites](#)
3. [TEL/N6246: Follow the Occupational Health and Safety Instructions during Tower Climbing](#)
4. [TEL/N9101: Organise Work and Resources as per Health and Safety Standards](#)
5. [TEL/N9102: Interact Effectively with Team Members and Customers](#)
6. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

## Qualification Pack (QP) Parameters

<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Passive Infrastructure
<b>Occupation</b>	Operations and Maintenance - Passive Infrastructure
<b>Country</b>	India
<b>NSQF Level</b>	3

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<b>Credits</b>	15
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/NIL
<b>Minimum Educational Qualification &amp; Experience</b>	9th grade pass OR 8th grade pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 1 Year of experience OR 5th grade pass with 4 Years of experience
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	15 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	31/03/2025
<b>NSQC Approval Date</b>	31/03/2022
<b>Version</b>	2.0
<b>Reference code on NQR</b>	QG-03-TL-00082-2023-V1.1-TSSC
<b>NQR Version</b>	1.1

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### TEL/N6310: Assist in the Installation of Telecom Equipment

#### Description

This OS unit is about carrying out various activities to assist in the installation of telecom equipment on tower structures - Ground Base Towers (GBT), Roof Top Towers (RTT), monopoles etc. using rigging and other installation related skills keeping all the safety related equipment handy.

#### Scope

The scope covers the following :

- Determine the scope of work
- Prepare for the installation of telecom equipment
- Assist in the installation of tower equipment
- Assist in performing Line-of-Sight (LOS) check
- Assist in the shelter room installations
- Assist in completing documentation

#### Elements and Performance Criteria

##### *Determine the scope of work*

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

- PC1.** determine the scope of installation work by coordinating with the supervisor and commissioning engineers
- PC2.** analyse the relevant blueprints, schematics and as-built site plan to determine the work requirements
- PC3.** assist the supervisor/field manager by providing appropriate inputs and feedback as required to help achieve the scope of work

##### *Prepare for the installation of telecom equipment*

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

- PC4.** check the availability of required installation material, tools and equipment, and Personal Protection Equipment (PPE)
- PC5.** examine the installation material, tools and equipment, and PPE to ensure they are not faulty/damaged, and co-ordinate with the supervisor to get them replaced
- PC6.** assist in preparing Radio Frequency (RF) connector and jumper and assembling the relevant telecom equipment for installation, following the supervisor's instructions

##### *Assist in the installation of tower equipment*

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

- PC7.** carry out antenna assembly, waveguide, and coaxial connector assembly and crimping as per the supervisor's instructions
- PC8.** assist in erecting and securing telecom structures, such as steel towers, monopoles, masts and cable tray installations to facilitate the installation of telecom equipment
- PC9.** assist in the installation of antennas, feeders, microwave dishes, mast head amplifiers and ancillary equipment on steel structures/monopoles/towers, using the appropriate safety equipment to ensure safety at heights

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- PC10.** carry out the installation of all necessary transmission equipment components including antenna mounts, surge arrestors, eNodeB, gNodeB, transmission lines, connectors or Tower Mounted Amplifiers (TMAs), Call Distribution Unit (CDU) as per the supervisor's instructions
- PC11.** ensure the correct azimuth, elevation, angle and alignment of the transmission equipment, such as antennas, amplifiers, microwave dishes, etc.
- PC12.** carry out the installation of feeder cables, coaxial cables, and high jumpers on steel lattice towers, guyed towers, masts, rooftop and building antennas/aerial systems
- PC13.** assist in the installation of Radio Frequency (RF) antenna system and external RF hardware, such as Remote Radio Units (RRUs), Tower Mounted Amplifier (TMAs), combiners, microwave dishes, etc.
- PC14.** assist in the installation of microwave antennas, such as parabolic 1 to 15 foot, Very High Frequency (VHF), Ultra High Frequency (UHF) antennas
- PC15.** install, connect or test underground or above ground grounding systems as per the supervisor instructions
- PC16.** use coaxial connectors and coaxial preparatory tools appropriately as per the manufacturer's instructions
- PC17.** measure the alignment in azimuth, tilt, roll, and height of antennas using the antenna alignment tool and change the settings as per the instructions given by the RF engineer
- PC18.** carry out bird-proofing and water-proofing of connectors
- PC19.** assist in installing, terminating, earthing, labelling, and testing different types of cables, such as coaxial, Ethernet, feeder and optical fibre cables for the wireless telecom system
- PC20.** assist in installing and testing Outdoor Unit (ODUs), splitters, and Customer Premises Equipment (CPE) as per the supervisor's instructions
- PC21.** assist in ensuring the 3G/4G/5G wireless system is built as per the approved drawing and is operational as per the design
- PC22.** use the compass, Global Positioning System (GPS) receiver, Range Finder and other relevant equipment as per the requirement
- PC23.** assist in carrying out labelling, grounding and sweep testing
- PC24.** carry out Passive Intermodulation (PIM) and sweep testing, following the supervisor's instructions
- PC25.** assist the technicians and Instrumentation & Control (I&C) engineers in undertaking installation rectification for all the equipment installed

### *Assist in performing LOS check*

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

- PC26.** assist in performing Line of Sight (LOS) check to ensure signal drop or termination is not experienced
- PC27.** assist in identifying the reason for drop/termination of signal, such as bad cable connection, incorrect network configuration, faulty network device, etc.
- PC28.** follow the appropriate measures to correct the LOS and remove the sources causing obstructions, such as networks and radio noise from other electronic and mechanical equipment around wireless gateways

### *Assist in the shelter room installations*

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

- PC29.** perform the shelter room installations as per the supervisor's instructions

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**PC30.** carry out cabling and relevant tests on the shelter room equipment to ensure their correct functioning

**PC31.** carry out troubleshooting for any malfunctioning equipment, as required

*Assist in completing documentation*

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

**PC32.** assist the supervisor in collecting the relevant information concerning the equipment on towers

**PC33.** assist in completing the relevant survey reports and documentation for client handover

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of adhering to the applicable safety guidelines during rigging operations
- KU2.** the importance and process of working safely at high elevations, and the use of appropriate safety equipment
- KU3.** different support mechanisms and techniques used to climb and work on different types of towers, such as guyed towers, lattice towers, monopole towers, stealth towers, etc.
- KU4.** the common defects found in various telecom equipment
- KU5.** the importance of identifying and documenting Job Hazard Assessment (JHA) requirements
- KU6.** the benefits of following checklists and Standard Operating Procedures (SOPs), such as efficiency and consistency in work
- KU7.** the importance of determining the client requirements by studying blueprints and carrying out work accordingly
- KU8.** the process of expanding and upgrading a cellular carrier network, involving civil work at existing cellular network sites and change of telecom equipment
- KU9.** the importance and process of carrying out pre and post-work site audits
- KU10.** the benefits and process of upgrading legacy cable plants from coaxial cable to fibre
- KU11.** the importance and process of determining the scope of work and client's requirements
- KU12.** the relevant installation material, tools and equipment, and PPE required for telecom rigging
- KU13.** the process of erecting and securing telecom structures, such as steel towers, monopoles, masts and cable tray installations to facilitate the installation of telecom equipment
- KU14.** the process of preparing Radio Frequency (RF) connector and jumper, and assembling the relevant telecom equipment for installation
- KU15.** the process of installing antennas, feeders, microwave dishes, mast head amplifiers and ancillary equipment on steel structures/ monopoles/ towers
- KU16.** the process of installing feeder cables, high jumpers, Tower Mounted Amplifier (TMA), Call Distribution Unit (CDU), etc.
- KU17.** the process of installing an RF antenna system and external RF hardware, such as RRUs, Tower Mounted Amplifier (TMAs), Combiners, microwave dishes, etc
- KU18.** the process of undertaking installation rectification for all equipment deployed during the project rollout
- KU19.** the process of installing and testing copper and hybrid feeder system
- KU20.** the process of microwave transmission installation and link panning

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- KU21.** the process of panning/ re-panning antennas
- KU22.** the use of a cable and antenna analyzer for VHF, broadcasting, cellular, PCS/GSM, 3G/4G/5G, Wireless Local Area Network (WLAN) and Wireless Local Loop (WLL) applications
- KU23.** the process of carrying out labelling, grounding and sweep testing
- KU24.** the importance and process of measuring the alignment, azimuth, tilt, roll, and height of antennas using the antenna alignment tool
- KU25.** the process of installing and testing copper and hybrid feeder system
- KU26.** the process of microwave transmission installation and link panning
- KU27.** the process of installing and terminating telecom cables of various types and sizes, as per the requirement
- KU28.** the process of installing, earthing, labelling, and testing of feeder and optical fibre cables
- KU29.** the process of installing and testing Outdoor Units (ODUs), splitters, and Customer Premises Equipment (CPE)
- KU30.** the process of installing mobile/broadcast antenna systems, panel antennas, head frames, hybrid cables, feeder cables, earthing, cable trays, Remote Radio Units (RRUs), etc.
- KU31.** the process of installing mobile/broadcast antenna systems, panel antennas, head frames, hybrid cables, feeder cables, earthing, cable trays, Remote Radio Units (RRUs), etc.
- KU32.** the process of carrying out PIM and sweep testing
- KU33.** the importance of ensuring the 3G/ 4G/ 5G wireless system is built as per the approved drawing and is operational as per the design
- KU34.** the process of commissioning and integrating wireless technologies
- KU35.** the process of installing, terminating and testing different types of cables, such as coaxial, Ethernet, and optical fibre cables for the wireless telecom system
- KU36.** the use of compass, GPS receiver, Range Finder and other relevant equipment
- KU37.** the recommended safety practices to be followed while working at heights on a range of telecom structures, including poles, towers and masts
- KU38.** the relevant documentation to be completed for client handover

## Generic Skills (GS)

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

- GS1.** maintain work related notes and records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** listen attentively to understand the information/instructions being shared
- GS4.** communicate politely and professionally
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** co-ordinate with the coworkers to achieve the work objectives
- GS7.** evaluate all possible solutions to a problem to select the best one
- GS8.** take quick decisions to deal with workplace emergencies/accidents



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Determine the scope of work</i>	<b>1</b>	<b>3</b>	-	<b>3</b>
<b>PC1.</b> determine the scope of installation work by coordinating with the supervisor and commissioning engineers	1	1	-	1
<b>PC2.</b> analyse the relevant blueprints, schematics and as-built site plan to determine the work requirements	-	1	-	1
<b>PC3.</b> assist the supervisor/field manager by providing appropriate inputs and feedback as required to help achieve the scope of work	-	1	-	1
<i>Prepare for the installation of telecom equipment</i>	<b>1</b>	<b>3</b>	-	<b>3</b>
<b>PC4.</b> check the availability of required installation material, tools and equipment, and Personal Protection Equipment (PPE)	-	1	-	1
<b>PC5.</b> examine the installation material, tools and equipment, and PPE to ensure they are not faulty/damaged, and co-ordinate with the supervisor to get them replaced	-	1	-	1
<b>PC6.</b> assist in preparing Radio Frequency (RF) connector and jumper and assembling the relevant telecom equipment for installation, following the supervisor's instructions	1	1	-	1
<i>Assist in the installation of tower equipment</i>	<b>16</b>	<b>25</b>	-	<b>17</b>
<b>PC7.</b> carry out antenna assembly, waveguide, and coaxial connector assembly and crimping as per the supervisor's instructions	1	1	-	1
<b>PC8.</b> assist in erecting and securing telecom structures, such as steel towers, monopoles, masts and cable tray installations to facilitate the installation of telecom equipment	-	1	-	1
<b>PC9.</b> assist in the installation of antennas, feeders, microwave dishes, mast head amplifiers and ancillary equipment on steel structures/monopoles/towers, using the appropriate safety equipment to ensure safety at heights	1	1	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> carry out the installation of all necessary transmission equipment components including antenna mounts, surge arrestors, eNodeB, gNodeB, transmission lines, connectors or Tower Mounted Amplifiers (TMAs), Call Distribution Unit (CDU) as per the supervisor's instructions	1	1	-	1
<b>PC11.</b> ensure the correct azimuth, elevation, angle and alignment of the transmission equipment, such as antennas, amplifiers, microwave dishes, etc.	1	1	-	1
<b>PC12.</b> carry out the installation of feeder cables, coaxial cables, and high jumpers on steel lattice towers, guyed towers, masts, rooftop and building antennas/aerial systems	1	1	-	1
<b>PC13.</b> assist in the installation of Radio Frequency (RF) antenna system and external RF hardware, such as Remote Radio Units (RRUs), Tower Mounted Amplifier (TMAs), combiners, microwave dishes, etc.	1	1	-	1
<b>PC14.</b> assist in the installation of microwave antennas, such as parabolic 1 to 15 foot, Very High Frequency (VHF), Ultra High Frequency (UHF) antennas	1	1	-	1
<b>PC15.</b> install, connect or test underground or above ground grounding systems as per the supervisor instructions	1	1	-	1
<b>PC16.</b> use coaxial connectors and coaxial preparatory tools appropriately as per the manufacturer's instructions	1	2	-	-
<b>PC17.</b> measure the alignment in azimuth, tilt, roll, and height of antennas using the antenna alignment tool and change the settings as per the instructions given by the RF engineer	2	1	-	1
<b>PC18.</b> carry out bird-proofing and water-proofing of connectors	1	1	-	1
<b>PC19.</b> assist in installing, terminating, earthing, labelling, and testing different types of cables, such as coaxial, Ethernet, feeder and optical fibre cables for the wireless telecom system	1	3	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC20.</b> assist in installing and testing Outdoor Unit (ODUs), splitters, and Customer Premises Equipment (CPE) as per the supervisor's instructions	-	2	-	-
<b>PC21.</b> assist in ensuring the 3G/4G/5G wireless system is built as per the approved drawing and is operational as per the design	-	1	-	1
<b>PC22.</b> use the compass, Global Positioning System (GPS) receiver, Range Finder and other relevant equipment as per the requirement	1	2	-	1
<b>PC23.</b> assist in carrying out labelling, grounding and sweep testing	-	1	-	1
<b>PC24.</b> carry out Passive Intermodulation (PIM) and sweep testing, following the supervisor's instructions	1	1	-	1
<b>PC25.</b> assist the technicians and Instrumentation & Control (I&C) engineers in undertaking installation rectification for all the equipment installed	1	2	-	1
<i>Assist in performing LOS check</i>	<b>3</b>	<b>3</b>	-	<b>3</b>
<b>PC26.</b> assist in performing Line of Sight (LOS) check to ensure signal drop or termination is not experienced	1	1	-	1
<b>PC27.</b> assist in identifying the reason for drop/termination of signal, such as bad cable connection, incorrect network configuration, faulty network device, etc.	1	1	-	1
<b>PC28.</b> follow the appropriate measures to correct the LOS and remove the sources causing obstructions, such as networks and radio noise from other electronic and mechanical equipment around wireless gateways	1	1	-	1
<i>Assist in the shelter room installations</i>	<b>2</b>	<b>7</b>	-	<b>2</b>
<b>PC29.</b> perform the shelter room installations as per the supervisor's instructions	1	2	-	1
<b>PC30.</b> carry out cabling and relevant tests on the shelter room equipment to ensure their correct functioning	-	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC31.</b> carry out troubleshooting for any malfunctioning equipment, as required	1	3	-	1
<i>Assist in completing documentation</i>	2	4	-	2
<b>PC32.</b> assist the supervisor in collecting the relevant information concerning the equipment on towers	1	2	-	1
<b>PC33.</b> assist in completing the relevant survey reports and documentation for client handover	1	2	-	1
<b>NOS Total</b>	<b>25</b>	<b>45</b>	<b>-</b>	<b>30</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	TEL/N6310
<b>NOS Name</b>	Assist in the Installation of Telecom Equipment
<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Network Managed Services
<b>Occupation</b>	Project Engineering
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQF Clearance Date</b>	31/03/2022

## Qualification Pack

# TEL/N6323: Assist in the Maintenance, Upgrade and Decommissioning of Telecom Equipment and Sites

## Description

This OS unit is about assisting in the maintenance, upgrade and decommissioning of telecom equipment and sites.

## Scope

The scope covers the following :

- Assist in carrying out preventive maintenance
- Assist in carrying out corrective maintenance and upgrade
- Assist in decommissioning of telecom site and equipment

## Elements and Performance Criteria

### *Assist in carrying out preventive maintenance*

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

- PC1.** carry out preventive maintenance of telecom structures for corrosion, wind-induced vibration, and mechanical damages
- PC2.** ensure the relevant telecom equipment are functioning correctly and have intact protective casing
- PC3.** replace the faulty equipment and protective casing, as required
- PC4.** identify misalignment of telecom equipment and correct the alignment
- PC5.** follow the recommended maintenance schedule to prevent any equipment and infrastructure failure and any consequent downtime

### *Assist in carrying out corrective maintenance and upgrade*

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

- PC6.** assist in conducting site audits, including the auditing of rigging installation and civil areas to ensure adherence to the client's installation and quality standards
- PC7.** check the maintenance requirement of telecom structures, lifting and personal safety equipment
- PC8.** use tower ladders, boom lift, cross lift, and other safety mechanisms and practices to climb cell towers and structures to examine the telecom equipment and installations
- PC9.** identify the maintenance needs of antennas, microwave dishes, feeder cables and ancillary equipment on telecom towers, poles and masts
- PC10.** assist in estimating Distance To Fault (DTF) measurements for failure analysis concerning service and maintenance of antenna and transmission lines
- PC11.** assist in maintaining the 3G/ 4G/ 5G network equipment
- PC12.** check and maintain telecom equipment following the applicable safety, efficiency and calibration procedures
- PC13.** carry out regular maintenance of telecom equipment and structures using the appropriate maintenance tools and equipment

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- PC14.** assist in the maintenance and upgrade of telecom structures, such as steel towers, poles, masts and cable tray installations, following the supervisor's instructions
- PC15.** assist in upgrading existing wireless telecom sites and equipment, as per the requirement
- PC16.** collect the relevant repair and maintenance data and assist the supervisor in maintaining the appropriate records as per the organisational policy

### *Assist in decommissioning of telecom site and equipment*

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

- PC17.** assist in swapping and decommissioning of mobile telecom sites and structures as per the requirement
- PC18.** assist in recovering the 3G/ 4G/ 5G network equipment
- PC19.** assist in decommissioning and dismantling telecom cabling and equipment as per the requirement
- PC20.** assist in the recovery of panel antennas, head frames, hybriflex cables, feeder cables, earthing, cable trays, Remote Radio Units (RRUs), etc.

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of conducting site audits and auditing of rigging installation and civil areas
- KU2.** the importance and process of checking the maintenance requirement of telecom structures, lifting and personal safety equipment
- KU3.** how to use tower ladders, boom lift, cross lift, other safety mechanisms and practices to climb cell towers and structures
- KU4.** the common maintenance needs of antennas, microwave dishes, feeder cables and ancillary equipment on telecom towers, poles and masts
- KU5.** Distance To Fault (DTF) measurements for failure analysis concerning service and maintenance of antenna and transmission lines
- KU6.** how to maintain and recover 3G/ 4G/ 5G network equipment
- KU7.** how to carry out regular maintenance of telecom equipment and structures, and the relevant tools and equipment to be used for the purpose
- KU8.** the process of maintaining and upgrading telecom structures, such as steel towers, poles, masts and cable tray installations
- KU9.** the process of upgrading wireless telecom sites and equipment
- KU10.** the relevant repair and maintenance data to be collected for maintaining the maintenance records
- KU11.** the process of swapping and decommissioning mobile telecom sites and structures
- KU12.** the process of decommissioning and dismantling telecom cabling and equipment
- KU13.** how to recover panel antennas, head frames, hybriflex cables, feeder cables, earthing, cable trays, Remote Radio Units (RRUs), etc.

## Generic Skills (GS)

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



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- GS1.** maintain work-related records
- GS2.** read the relevant guides and literature to get the latest information about the field of work.
- GS3.** communicate clearly and politely
- GS4.** listen attentively to understand the instructions being given
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** identify appropriate solutions to work-related issues
- GS7.** take quick decision in case of an emergency/accident



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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assist in carrying out preventive maintenance</i>	<b>7</b>	<b>13</b>	-	<b>5</b>
<b>PC1.</b> carry out preventive maintenance of telecom structures for corrosion, wind-induced vibration, and mechanical damages	1	3	-	1
<b>PC2.</b> ensure the relevant telecom equipment are functioning correctly and have intact protective casing	1	2	-	1
<b>PC3.</b> replace the faulty equipment and protective casing, as required	1	2	-	1
<b>PC4.</b> identify misalignment of telecom equipment and correct the alignment	2	4	-	1
<b>PC5.</b> follow the recommended maintenance schedule to prevent any equipment and infrastructure failure and any consequent downtime	2	2	-	1
<i>Assist in carrying out corrective maintenance and upgrade</i>	<b>16</b>	<b>28</b>	-	<b>11</b>
<b>PC6.</b> assist in conducting site audits, including the auditing of rigging installation and civil areas to ensure adherence to the client's installation and quality standards	1	2	-	1
<b>PC7.</b> check the maintenance requirement of telecom structures, lifting and personal safety equipment	1	3	-	1
<b>PC8.</b> use tower ladders, boom lift, cross lift, and other safety mechanisms and practices to climb cell towers and structures to examine the telecom equipment and installations	2	3	-	1
<b>PC9.</b> identify the maintenance needs of antennas, microwave dishes, feeder cables and ancillary equipment on telecom towers, poles and masts	1	3	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> assist in estimating Distance To Fault (DTF) measurements for failure analysis concerning service and maintenance of antenna and transmission lines	2	2	-	1
<b>PC11.</b> assist in maintaining the 3G/ 4G/ 5G network equipment	1	2	-	1
<b>PC12.</b> check and maintain telecom equipment following the applicable safety, efficiency and calibration procedures	1	3	-	1
<b>PC13.</b> carry out regular maintenance of telecom equipment and structures using the appropriate maintenance tools and equipment	2	2	-	1
<b>PC14.</b> assist in the maintenance and upgrade of telecom structures, such as steel towers, poles, masts and cable tray installations, following the supervisor's instructions	2	2	-	1
<b>PC15.</b> assist in upgrading existing wireless telecom sites and equipment, as per the requirement	2	4	-	1
<b>PC16.</b> collect the relevant repair and maintenance data and assist the supervisor in maintaining the appropriate records as per the organisational policy	1	2	-	1
<i>Assist in decommissioning of telecom site and equipment</i>	<b>7</b>	<b>9</b>	-	<b>4</b>
<b>PC17.</b> assist in swapping and decommissioning of mobile telecom sites and structures as per the requirement	2	2	-	1
<b>PC18.</b> assist in recovering the 3G/ 4G/ 5G network equipment	1	2	-	1
<b>PC19.</b> assist in decommissioning and dismantling telecom cabling and equipment as per the requirement	2	2	-	1
<b>PC20.</b> assist in the recovery of panel antennas, head frames, hybriflex cables, feeder cables, earthing, cable trays, Remote Radio Units (RRUs), etc.	2	3	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	TEL/N6323
<b>NOS Name</b>	Assist in the Maintenance, Upgrade and Decommissioning of Telecom Equipment and Sites
<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Passive Infrastructure
<b>Occupation</b>	Project Engineering
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## Qualification Pack

# TEL/N6246: Follow the Occupational Health and Safety Instructions during Tower Climbing

## Description

This OS unit is about following the applicable occupational health and safety instructions during tower climbing.

## Scope

The scope covers the following :

- Perform the pre-climb tower inspection
- Check the safety equipment and work site conditions
- Carry out tower operations following safety instructions

## Elements and Performance Criteria

### *Perform the pre-climb tower inspection*

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

- PC1.** perform a visual observation of the tower using binoculars to check for loose or missing hardware and ensure such issues are fixed before climbing the tower
- PC2.** identify any climbing obstructions and hazards, such as bird roosts and insect nests and take appropriate measures to deal with them
- PC3.** inspect turnbuckles for correct installation and check the tension of the guy wires on guyed towers to ensure they are within their recommended tension range
- PC4.** check guy preforms on guyed towers and thimbles for signs of damage
- PC5.** check the verticality of the tower to identify the eccentricity/leaning of the tower due to weakness in the tower members by wind load or excessive line loading
- PC6.** ensure all the identified issues with the tower are addressed through coordination with the relevant authority before tower climbing

### *Check the safety equipment and work site conditions*

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

- PC7.** check the availability of appropriate tower ladders, hoisting and rigging equipment, and relevant tools and machinery for climbing towers ensuring they are appropriately maintained and safe for use
- PC8.** check the availability of appropriate Personal Protective Equipment (PPE) and inspect it to ensure it is well-maintained and safe for use, ensuring not to undertake any rigging work without PPE
- PC9.** check the availability of a fully equipped first aid kit at the work site to deal with minor medical emergencies
- PC10.** check the strength of radio waves at the tower work site using a Radio Frequency (RF) detector to ensure adherence to applicable RF safety regulations
- PC11.** check there are no serious electrical hazards at the tower work site, such as overhead electricity wires

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- PC12.** coordinate with the relevant personnel to conduct comprehensive safety planning, including a Job Hazard Analysis (JHA) and an Emergency Action Plan (EAP)
- PC13.** identify unsafe conditions at the work site and report them promptly to the appropriate authority
- PC14.** check the weather conditions through reliable sources to ensure no storm, lightning or other adverse weather conditions are expected that could impact working at heights on towers
- PC15.** measure the wind velocity using an anemometer to ensure tower climbing is carried out when the wind velocity is under the recommended limits
- PC16.** ensure any equipment, machinery, vehicles, or materials which are potential danger near tower sites and live wires are maintained at a safe distance

### *Carry out tower operations following safety instructions*

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

- PC17.** follow the applicable health and safety protocol at the work site, including registering
- PC18.** use a full-body harness tied off at appropriate spots on the tower to maintain complete tie-off while on the tower
- PC19.** use a safety cable climb or two or more lanyards when moving on towers
- PC20.** use the appropriate PPE while climbing up and down and working on towers, following the manufacturer's instructions to ensure its effectiveness
- PC21.** follow the recommended tower climbing practices while climbing and working on telecom towers to minimise any injuries and untoward incidents during tower climbing
- PC22.** use two-way radio while working on towers to maintain continuous communication with the ground crew
- PC23.** coordinate with the relevant authority to report impaired physical health and stop working at heights under the influence of drowsiness-inducing medication
- PC24.** carry out work away from electricity wires or co-ordinate with the relevant authority to have electricity turned off while working near electricity wires, as appropriate
- PC25.** ensure to place appropriate warning signs to warn co-workers while working near live electricity wires
- PC26.** ensure compliance with the applicable health and safety standards and regulations
- PC27.** administer first aid for different types of medical emergencies
- PC28.** assist the relevant personnel in preparing incident reports by providing information regarding tower climbing incidents

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of getting adequate training and practice in tower climbing to minimise the injuries and untoward incidents during tower climbing
- KU2.** the importance of ensuring the availability of well-maintained safety equipment before climbing towers
- KU3.** the appropriate PPE required for tower climbing, i.e. full body harness designed for tower climbing, dual leg shock-absorbing lanyard, safety climb cable attachment device (Cable Grab), climbing helmet, gloves, steel-toed boots with rigid sole, clear or tinted eyeglasses, positioning lanyard, carabiners etc.

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- KU4.** the importance of ensuring the availability of a fully-equipped first aid kit at the work site
- KU5.** the benefit and importance of using two way radio for telecom riggers to maintain communication with ground crew
- KU6.** the process of administering first aid for different types of medical emergencies
- KU7.** the importance of identifying unsafe conditions at the work site and reporting them promptly to the appropriate authority following the applicable reporting process
- KU8.** the importance of checking the availability of relevant PPE and not undertaking any rigging work without PPE
- KU9.** the importance and process of checking the PPE to ensure it is functioning properly and safe to use
- KU10.** the importance of conducting comprehensive safety planning, including a Job Hazard Analysis (JHA) and an Emergency Action Plan (EAP) for every job site
- KU11.** the importance and process of checking weather conditions and avoiding any work at heights during adverse weather conditions
- KU12.** the importance of not working at heights in case of impaired physical health, such as being under medication that may cause drowsiness affecting the ability to work with concentration at elevations
- KU13.** the importance of continually enhancing safety skills and awareness through regular training
- KU14.** the process of conducting inspections of tools, hoisting and rigging equipment, and other machinery
- KU15.** the applicable electrical health and safety standards
- KU16.** the appropriate climbing and working practices to be adopted for a range of telecom structures, such as towers, poles and other steel structures
- KU17.** the applicable health and safety standards and regulations
- KU18.** the importance and process of preparing and reviewing incident reports for tower climbing incidents to avoid any similar incidents in future

## Generic Skills (GS)

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

- GS1.** maintain work related records
- GS2.** read the relevant guides and literature to get the latest information about the field of work
- GS3.** communicate clearly and politely
- GS4.** listen attentively to understand the instructions being given
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** identify appropriate solutions to work-related issues
- GS7.** take quick decisions to deal with any emergencies or accidents

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform the pre-climb tower inspection</i>	<b>7</b>	<b>12</b>	-	<b>3</b>
<b>PC1.</b> perform a visual observation of the tower using binoculars to check for loose or missing hardware and ensure such issues are fixed before climbing the tower	1	2	-	1
<b>PC2.</b> identify any climbing obstructions and hazards, such as bird roosts and insect nests and take appropriate measures to deal with them	1	2	-	-
<b>PC3.</b> inspect turnbuckles for correct installation and check the tension of the guy wires on guyed towers to ensure they are within their recommended tension range	1	2	-	1
<b>PC4.</b> check guy preforms on guyed towers and thimbles for signs of damage	1	2	-	-
<b>PC5.</b> check the verticality of the tower to identify the eccentricity/leaning of the tower due to weakness in the tower members by wind load or excessive line loading	2	2	-	1
<b>PC6.</b> ensure all the identified issues with the tower are addressed through coordination with the relevant authority before tower climbing	1	2	-	-
<i>Check the safety equipment and work site conditions</i>	<b>11</b>	<b>20</b>	-	<b>7</b>
<b>PC7.</b> check the availability of appropriate tower ladders, hoisting and rigging equipment, and relevant tools and machinery for climbing towers ensuring they are appropriately maintained and safe for use	1	2	-	1
<b>PC8.</b> check the availability of appropriate Personal Protective Equipment (PPE) and inspect it to ensure it is well-maintained and safe for use, ensuring not to undertake any rigging work without PPE	1	2	-	-
<b>PC9.</b> check the availability of a fully equipped first aid kit at the work site to deal with minor medical emergencies	1	2	-	1



### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> check the strength of radio waves at the tower work site using a Radio Frequency (RF) detector to ensure adherence to applicable RF safety regulations	2	2	-	-
<b>PC11.</b> check there are no serious electrical hazards at the tower work site, such as overhead electricity wires	1	2	-	1
<b>PC12.</b> coordinate with the relevant personnel to conduct comprehensive safety planning, including a Job Hazard Analysis (JHA) and an Emergency Action Plan (EAP)	1	2	-	-
<b>PC13.</b> identify unsafe conditions at the work site and report them promptly to the appropriate authority	1	2	-	1
<b>PC14.</b> check the weather conditions through reliable sources to ensure no storm, lightning or other adverse weather conditions are expected that could impact working at heights on towers	1	2	-	1
<b>PC15.</b> measure the wind velocity using an anemometer to ensure tower climbing is carried out when the wind velocity is under the recommended limits	1	2	-	1
<b>PC16.</b> ensure any equipment, machinery, vehicles, or materials which are potential danger near tower sites and live wires are maintained at a safe distance	1	2	-	1
<i>Carry out tower operations following safety instructions</i>	<b>12</b>	<b>23</b>	-	<b>5</b>
<b>PC17.</b> follow the applicable health and safety protocol at the work site, including registering	1	2	-	1
<b>PC18.</b> use a full-body harness tied off at appropriate spots on the tower to maintain complete tie-off while on the tower	1	2	-	-
<b>PC19.</b> use a safety cable climb or two or more lanyards when moving on towers	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC20.</b> use the appropriate PPE while climbing up and down and working on towers, following the manufacturer's instructions to ensure its effectiveness	1	2	-	-
<b>PC21.</b> follow the recommended tower climbing practices while climbing and working on telecom towers to minimise any injuries and untoward incidents during tower climbing	1	2	-	1
<b>PC22.</b> use two-way radio while working on towers to maintain continuous communication with the ground crew	1	2	-	-
<b>PC23.</b> coordinate with the relevant authority to report impaired physical health and stop working at heights under the influence of drowsiness-inducing medication	1	2	-	1
<b>PC24.</b> carry out work away from electricity wires or co-ordinate with the relevant authority to have electricity turned off while working near electricity wires, as appropriate	1	2	-	1
<b>PC25.</b> ensure to place appropriate warning signs to warn co-workers while working near live electricity wires	1	2	-	1
<b>PC26.</b> ensure compliance with the applicable health and safety standards and regulations	1	2	-	-
<b>PC27.</b> administer first aid for different types of medical emergencies	1	2	-	-
<b>PC28.</b> assist the relevant personnel in preparing incident reports by providing information regarding tower climbing incidents	1	1	-	-
<b>NOS Total</b>	<b>30</b>	<b>55</b>	<b>-</b>	<b>15</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	TEL/N6246
<b>NOS Name</b>	Follow the Occupational Health and Safety Instructions during Tower Climbing
<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Network Managed Services
<b>Occupation</b>	Network Operation and Maintenance
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## Qualification Pack

# TEL/N9101: Organise 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>	<b>4</b>	<b>9</b>	-	<b>2</b>
<b>PC1.</b> keep workspace clean and tidy	-	1	-	-
<b>PC2.</b> perform individual role and responsibilities as per the job role while taking accountability for the work	1	1	-	1
<b>PC3.</b> record/document tasks completed as per the requirements within specific timelines	-	1	-	1
<b>PC4.</b> implement schedules to ensure timely completion of tasks	-	2	-	-
<b>PC5.</b> identify the cause of a problem related to own work and validate it	2	2	-	-
<b>PC6.</b> analyse problems accurately and communicate different possible solutions to the problem	1	2	-	-
<i>Maintain safe, healthy and secure working environment</i>	<b>16</b>	<b>27</b>	-	<b>4</b>
<b>PC7.</b> comply with organisation's current health, safety, security policies and procedures	1	1	-	-
<b>PC8.</b> check for water spills in and around the work space and escalate these to the appropriate authority	1	2	-	1
<b>PC9.</b> report any identified breaches in health, safety, and security policies and procedures to the designated person	1	2	-	1
<b>PC10.</b> use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc.	1	2	-	1
<b>PC11.</b> avoid damage of components due to negligence in ESD procedures or any other loss due to safety negligence	2	3	-	1
<b>PC12.</b> 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
<b>PC13.</b> participate regularly in fire drills or other safety related workshops organised by the company	1	3	-	-
<b>PC14.</b> 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	-	-
<b>PC15.</b> maintain appropriate posture while sitting/standing for long hours	1	1	-	-
<b>PC16.</b> handle heavy and hazardous materials with care, while maintaining appropriate posture	1	1	-	-
<b>PC17.</b> sanitize workstation and equipment regularly	1	2	-	-
<b>PC18.</b> clean hands with soap, alcohol-based sanitizer regularly	-	1	-	-
<b>PC19.</b> avoid contact with anyone suffering from communicable diseases and take necessary precautions	-	1	-	-
<b>PC20.</b> take safety precautions while travelling e.g. maintain 1m distance from others, sanitize hands regularly, wear masks, etc.	1	2	-	-
<b>PC21.</b> report hygiene and sanitation issues to appropriate authority	1	1	-	-
<b>PC22.</b> 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>	<b>7</b>	<b>16</b>	-	<b>3</b>
<b>PC23.</b> optimize usage of material including water in various tasks/activities/processes	1	2	-	-
<b>PC24.</b> use resources such as water, electricity and others responsibly	1	2	-	1
<b>PC25.</b> carry out routine cleaning of tools, machine and equipment	1	2	-	-



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

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	TEL/N9101
<b>NOS Name</b>	Organise Work and Resources as per Health and Safety Standards
<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## 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>	<b>7</b>	<b>15</b>	-	<b>2</b>
<b>PC1.</b> receive work requirements from superiors and customers and interpret them correctly	1	2	-	-
<b>PC2.</b> inform the supervisor and/or concerned person about any unforeseen disruptions or delays	2	4	-	1
<b>PC3.</b> participate in decision making by providing facts and figures, giving/accepting constructive suggestions	2	5	-	1
<b>PC4.</b> rectify errors as per feedback and ensure the errors are not repeated	2	4	-	-
<i>Interact effectively with colleagues and customers</i>	<b>7</b>	<b>26</b>	-	<b>4</b>
<b>PC5.</b> comply with organisation's policies and procedures for working with team members	1	2	-	-
<b>PC6.</b> communicate professionally using appropriate mode of communication such as face-to-face, telephonic and written	2	4	-	1
<b>PC7.</b> respond to queries and seek/provide clarifications if required	2	4	-	1
<b>PC8.</b> co-ordinate with team to integrate work as per requirements	-	3	-	-
<b>PC9.</b> resolve conflicts within the team/with customers to achieve smooth workflow	1	5	-	1
<b>PC10.</b> recognize emotions accurately in self and others to build good relationships	1	4	-	-
<b>PC11.</b> prioritize team and organization goals above personal goals	-	4	-	1
<i>Respect differences of gender and ability</i>	<b>11</b>	<b>24</b>	-	<b>4</b>
<b>PC12.</b> 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
<b>PC13.</b> encourage appropriate behavior and conduct with people across gender	2	5	-	1
<b>PC14.</b> assist team members with disability in overcoming any challenges faced in work	3	4	-	1
<b>PC15.</b> practice appropriate verbal and non-verbal communication while interacting with People with Disability (PWD)	2	4	-	1
<b>PC16.</b> ensure equal participation of the people across genders in discussions	2	6	-	-
<b>NOS Total</b>	<b>25</b>	<b>65</b>	<b>-</b>	<b>10</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	TEL/N9102
<b>NOS Name</b>	Interact Effectively with Team Members and Customers
<b>Sector</b>	Telecom
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## 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



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### *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>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC2.</b> identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>1</b>	<b>3</b>	-	-
<b>PC3.</b> 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>	<b>2</b>	<b>3</b>	-	-
<b>PC4.</b> speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC5.</b> follow good manners while communicating with others	-	-	-	-
<b>PC6.</b> work with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>1</b>	-	-
<b>PC7.</b> communicate and behave appropriately with all genders and PwD	-	-	-	-
<b>PC8.</b> report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>3</b>	<b>4</b>	-	-
<b>PC9.</b> use various financial products and services safely and securely	-	-	-	-

### Qualification Pack

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

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0101
<b>NOS Name</b>	Employability Skills (30 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	2
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	NA
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## 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.

## 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/N6310.Assist in the Installation of Telecom Equipment	25	45	-	30	100	20
TEL/N6323.Assist in the Maintenance, Upgrade and Decommissioning of Telecom Equipment and Sites	30	50	-	20	100	20
TEL/N6246.Follow the Occupational Health and Safety Instructions during Tower Climbing	30	55	-	15	100	20
TEL/N9101.Organise Work and Resources as per Health and Safety Standards	30	60	-	10	100	15
TEL/N9102.Interact Effectively with Team Members and Customers	25	65	-	10	100	15
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
<b>Total</b>	<b>160</b>	<b>305</b>	<b>-</b>	<b>85</b>	<b>550</b>	<b>100</b>

## Qualification Pack

### Acronyms

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

## Qualification Pack

### Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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

<b>Knowledge and Understanding (KU)</b>	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.
<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.