

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR TELECOM INDUSTRY

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack- Telecom Tower/ Bay Installation Supervisor

SECTOR: TELECOM

SUB-SECTOR: Passive Infra

OCCUPATION: Operator & Maintenance

REFERENCE ID: TEL/Q4104

ALIGNED TO: NCO-2015/ 3114.1701

Brief Job Description: This unit is about dealing with industry standard techniques for interpretation of civil, mechanical and electrical drawings using geometrical dimensioning and tolerances for assembly and installation of telecom equipment bays, telecom towers and implementing wiring harnesses.

Personal Attributes: This job requires the individual to be analytical and be able to handle high pressure situations to successfully perform the assigned responsibilities. He should have basic written and oral communication skills and should be able to apply practical judgment to successfully perform the assigned responsibilities.

Qualifications Pack For Tower/Bay Installation Supervisor

Job Details	Qualifications Pack Code	TEL/Q4104		
	Job Role	Telecom Tower/Bay Installation Supervisor		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Telecom	Drafted on	08/01/2015
	Sub-sector	Passive infra	Last reviewed on	21/06/2018
	Occupation	Operations & Maintenance	Next Review Date	31/03/2019
	NSQF Clearance on	20 / 07 / 2015		

Job Role	Telecom Tower/ Bay installation Supervisor
Role Description	Telecom tower/ bay installation supervisor is dealing with industry standard techniques for interpretation of civil, mechanical and electrical drawings to supervise assembly and installation of telecom equipment bays and towers .
NSQF level	4
Minimum Educational Qualifications*	ITI
Maximum Educational Qualifications*	Bachelor in Technology (Mechanical, Electrical, Civil)
Training (Suggested but not mandatory)	Training on reading of engineering drawings Training on installation of bays and towers
Minimum Job Entry Age	18 Years
Experience	0-4 years of work experience in civil or mechanical or electrical wiring works
Applicable National Occupational Standards (NOS)	Compulsory: 1. TEL/N4118(Tower/Bay installation-Mechanical) 2. TEL/N4119(Tower/Bay installation- Electrical) 3. TEL/N4120(Tower/Bay Installation- Electromechanical) 4. TEL/N4121(Maintain a healthy,safe and secure working Environment)
Performance Criteria	As described in the relevant OS units

Qualifications Pack For Tower/Bay Installation Supervisor

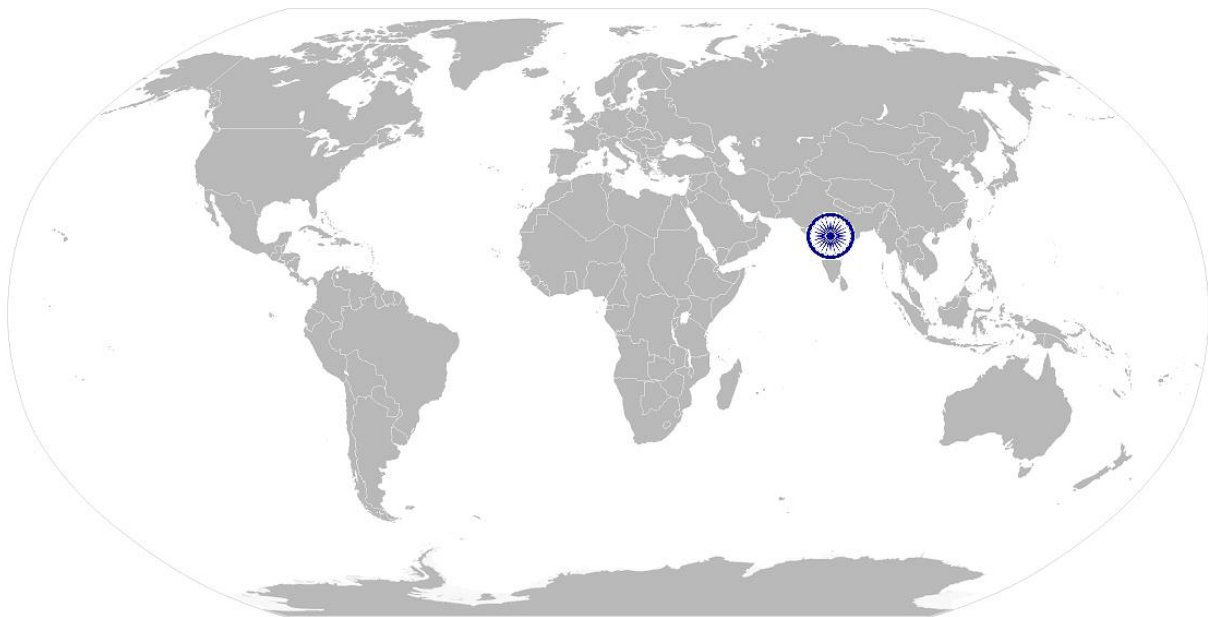
Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A qualifications Pack is assigned a unique qualification 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.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.

Qualifications Pack For Tower/Bay Installation Supervisor

Acronyms	Keywords /Terms	Description
	CAD	Computer aided Design
	OHS	Occupational safety and health
	SI	International System of Units
	MKS	Meter-Kilogram-Seconds

National Occupational Standard



Overview

This unit is about dealing with industry standard techniques for interpretation of mechanical drawings using geometrical dimensioning and tolerances for assembly and installation of telecom equipment bays, telecom towers and telecom racks.

TEL/N4118

Tower/Bay Installation - Mechanical

National Occupational Standard

Unit Code	TEL/N4118
Unit Title (Task)	Tower/Bay Installation – Mechanical
Description	This unit is industry standard techniques for interpretation of civil and mechanical drawings for assembly and installation of telecom equipment bays, telecom towers, structure and telecom racks.
Scope	This unit/task covers the following: Reading of Engineering drawings: - civil engineering drawings - mechanical drawings Assembly and Installation - tools - materials - supervision Report and Record - documentation - reporting
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Reading of Engineering drawings	To be competent, the user/individual on the job must be able to: PC1. understand design layout of telecom structures. PC2. basic engineering concepts PC3. read civil & mechanical drawings of complex mechanical structures using manual and software driven methods. PC4. use technical drawing software like autocad/ creo 2.0 (for reading drawing) PC5. use software tools like ms office. PC6. use working knowledge of traditionally deployed structures and bays. PC7. read & physically correlate bill of material.
Assembly and Installation	PC8. determine components required for erection and assembly of tower. PC9. obtain materials required (such as components, equipment, tools and other inventory) as per organizational procedures. PC10. ensure that tools, equipment and other devices are in proper working condition and calibrated. PC11. arrange the required hardware tools like combination pliers, spanner, drill machine. PC12. supervise civil foundation and structural works PC13. supervise mechanical assembly and erection works.

TEL/N4118
Tower/Bay Installation - Mechanical

Report & Record	PC14. ensure that engineering documents are available to all appropriate authorities to inspect. PC15. ensure that issued inventory items document and work summary are shared with appropriate teams.
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. relevant legislation, standards, policies, and procedures followed in the company KA3. how to engage with both internal and external specialists for support in order to resolve incidents and service requests KA4. service request procedures, tools, and techniques KA5. protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that is required to be used. KA6. first aid requirements in case of electrical shocks, cuts and other common injuries.
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basics of civil & mechanical engineering drawing. KB2. basics of mechanical hardware and software tools. KB3. basics of mechanical assembly and associated techniques. KB4. structural basics of telecom systems and devices. KB5. maintain a knowledge-base of the known problems.
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. fill up record sheets clearly, concisely and accurately as per company procedures.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. to read, infer and interpret different types of engineering datasheets. SA3. read and understand organizational health and safety instructions
	Oral Communication (Listening and Speaking skills)
	SA4. ability to communicate, manages, direct & supervise unskilled and semi-skilled work force for accomplishment of installation project work. SA5. ability to resolve conflict. SA6. ability to translate technical data to simple, layman friendly directives.

TEL/N4118
Tower/Bay Installation - Mechanical

A. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work
	Plan and Organize
	The user/individual on the job needs to know and understand: SB2. plan and organize service feedback files/documents
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. manage relationships with customers who may be stressed, frustrated, confused, or angry SB4. build customer relationships and use customer centric approach
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB6. deal with clients lacking the technical background to solve the problem on their own SB7. identify immediate or temporary solutions to resolve delays
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. use the existing data to arrive at specific data points SB9. use the existing data points for improving the call resolution time SB10. use the existing data points to generate required reports for business
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB11. apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

NOS Version Control

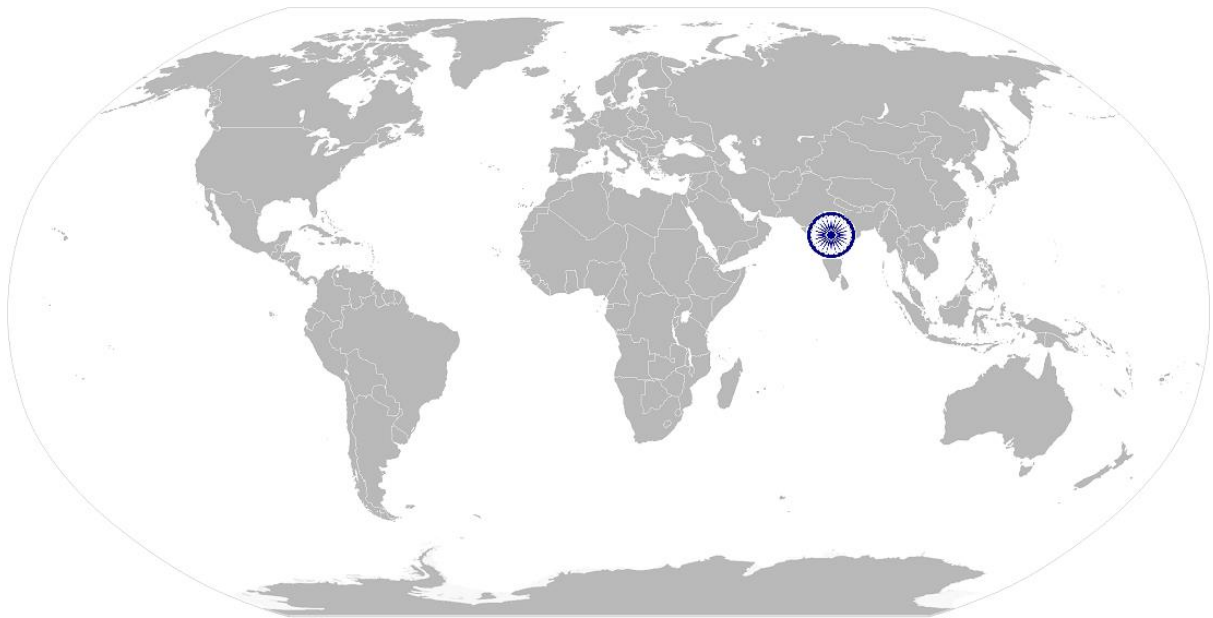
NOS Code	TEL/N4118		
Credits (NSQF)	TBD	Version number	1.0
Industry	Telecom	Drafted on	08/01/2015
Industry Sub-sector	Passive infra	Last reviewed on	21/06/2018
Occupation	Operations & Maintenance	Next review date	31/03/2019



TEL/N4119

Tower/Bay Installation - Electrical

National Occupational Standard



Overview

This unit is about dealing with industry standard techniques for reading electrical drawing sheet and routing of cable/ wiring harness for telecom tower,bay installation.

TEL/N4119

Tower/Bay Installation - Electrical

National Occupational Standard

Unit Code	TEL/N4119
Unit Title (Task)	Tower/Bay installation – Electrical
Description	This unit is about dealing with industry standard techniques for reading Electrical drawing sheet and routing of cable/ wiring harness for telecom tower, bay installation.
Scope	This unit/task covers the following: Reading of engineering drawings: - electrical drawings - cable assembly - circuit mapping - transmission diagrams and layouts Assembly and Installation - tools - materials - supervision Report and Record - documentation - reporting
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Reading of engineering drawings	PC1. read design layout of telecom structures for cable fabrication. PC2. read electrical drawings of complex mechanical structures using manual and software driven methods. PC3. working knowledge of conventionally deployed cable assembly. PC4. understanding graphic symbols used on drawing sheet. PC5. basic knowledge of fibre-optic cable. PC6. ability to understand diverse electrical diagrams.
Assembly and installation	PC7. arrange the required hardware tools like combination plier, wire cutter, wire stripper, nose pliers etc. for cable assembly. PC8. ensure that tools, equipment's and other devices are in proper working condition and calibrated. PC9. determine components required based on fault installation line. PC10. supervise cable assembly and wiring harnesses
Report & Record	PC11. ensure record sheets are completed accurately, as per company guidelines PC12. retain documents for specific period of time, as per company procedure. PC13. develop the report of assembly work for future inspection.
Knowledge and Understanding (K)	
B. Organizational Context (Knowledge of the	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. relevant legislation, standards, policies, and procedures followed in the company

TEL/N4119

Tower/Bay Installation - Electrical

company / organization and its processes)	KA3. how to engage with both internal and external specialists for support in order to resolve incidents and service requests KA4. service request procedures, tools, and techniques KA5. protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that is required to be used. KA6. first aid requirements in case of electrical shocks, cuts .
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basics of electrical engineering drawing and its wiring color code. KB2. basics of electrical hardware tools. like nose plier, wire cutter etc KB3. knowledge of numerous electrical diagrams. KB4. acquire knowledge of basic assembly technique of wiring harness. KB5. structural basics of telecom systems and devices. KB6. maintain a knowledge-base of the known problems. KB7. standard fault-finding techniques.
Skills (S) [Optional]	
B. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. fill up record sheets clearly, concisely and accurately as per company procedures.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. to read, infer and interpret different types of engineering datasheets. SA3. read and understand organizational health and safety instructions
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. ability to communicate, manages, direct & supervise unskilled and semi-skilled work force for accomplishment of installation project work. SA5. ability to resolve conflict. SA6. ability to translate technical data to simple, layman friendly director. SA7. clearly communicate relevant information to supervisor

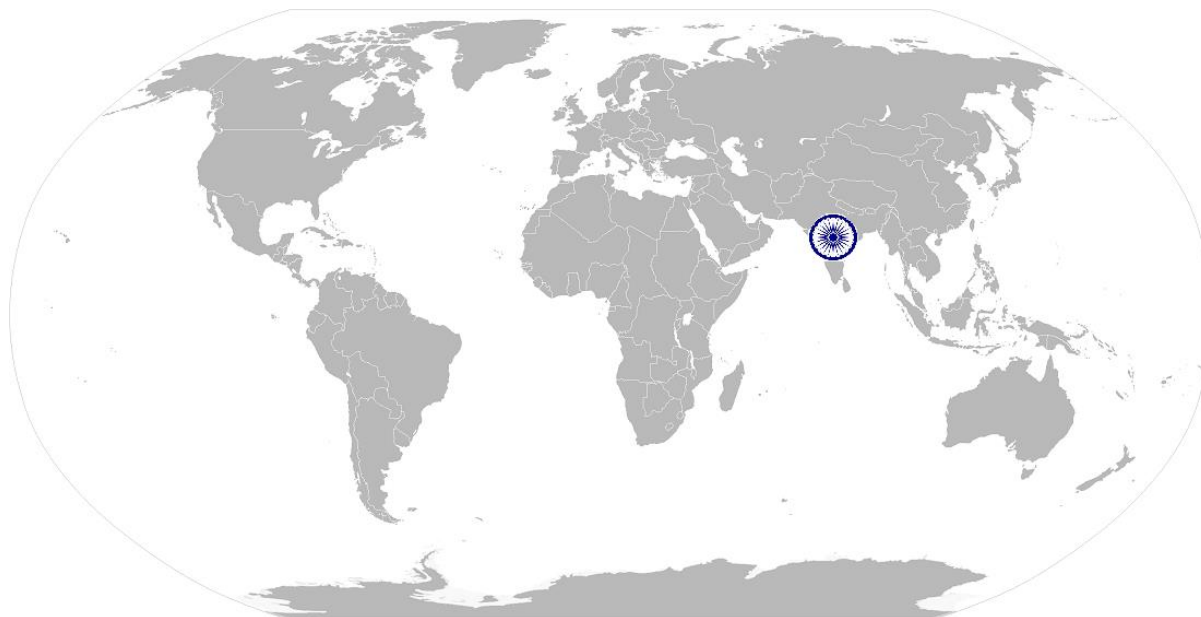
TEL/N4119

Tower/Bay Installation - Electrical

C. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work
	Plan and Organize
	The user/individual on the job needs to know and understand: SB2. Plan and organize service feedback files/documents
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. manage relationships with customers who may be stressed, frustrated, confused, or angry SB4. build customer relationships and use customer centric approach
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB6. deal with clients lacking the technical background to solve the problem on their own SB7. identify immediate or temporary solutions to resolve delays
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. use the existing data to arrive at specific data points SB9. use the existing data points for improving the call resolution time SB10. use the existing data points to generate required reports for business
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB11. apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

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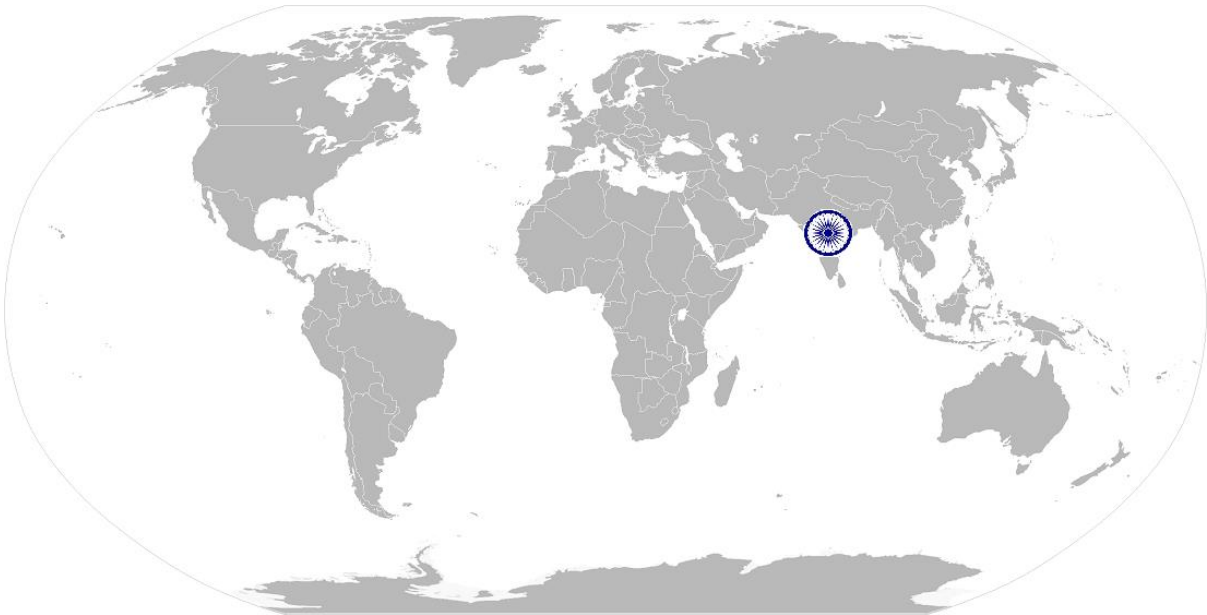
NOS Code	TEL/N4119		
Credits (NSQF)	TBD	Version number	1.0
Industry	Telecom	Drafted on	08/01/2015
Industry Sub-sector	Passive infra	Last reviewed on	21/06/2018
Occupation	Operations & Maintenance	Next review date	31/03/2019



TEL/N4120

Tower/Bay Installation - Electromechanical

National Occupational Standard



Overview

This unit is about dealing with industry standard techniques for interpretation of civil, mechanical and electrical drawings using geometrical dimensioning and tolerances for assembly and installation of telecom equipment bays, telecom towers and implementing wiring harnesses & routing cable.

TEL/N4120

Tower/Bay Installation - Electromechanical

National Occupational Standard

Unit Code	TEL/N4120
Unit Title (Task)	Tower/ Bay installation - Electromechanical
Description	This OS unit is industry standard techniques for interpretation of civil, mechanical and electrical drawings for assembly & implementing of tower or cable routing.
Scope	This unit/task covers the following: Reading of engineering drawings: - civil engineering drawings - mechanical and electrical drawings Assembly and Installation - tools - materials - supervision Report and Record - documentation - reporting
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Reading of engineering drawings	PC1. understanding design layout of electromechanical structures of telecom industry. PC2. read mechanical, civil and electrical drawings of complex electromechanical structures using manual and software driven methods. PC3. skill to use software tools like ms office. PC4. working knowledge of conventionally deployed structures, bays & wiring assembly of tower. PC5. ability to create simple drawing sheet of electromechanical structure. PC6. read simple electrical drawings using software tools PC7. read mechanical drawings of complex mechanical structures using manual and software driven methods. PC8. physically correlate bill of material of electromechanical structures. PC9. ability to read basic electrical graphical symbols including receptacles, switches, batteries, fuses, and circuit breakers. PC10. troubleshooting and repairing of telecom tower & wiring harnesses PC11. working knowledge of usually deployed cable assembly PC12. understanding graphic symbols used on drawing sheet. PC13. fibre-optics installation line visualization PC14. develop ability to understanding the numerous electrical diagrams.
Assembly and installation	PC15. determine components required for tower installation & cable routing. PC16. organize the required hardware tools for electromechanical structure setup and realization. PC17. Supervise civil foundation & structural works PC18. Supervise mechanical assembly and erection works

TEL/N4120

Tower/Bay Installation - Electromechanical

	PC19. Supervise cable assembly and wiring harnesses
Report & Record	PC20. ensure that the record sheets are completed accurately, as per company guidelines PC21. retain documents for specific period of time, as per company procedure.
Knowledge and Understanding (K)	
C. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. risk and impact of not following defined procedures/work instructions KA2. relevant legislation, standards, policies, and procedures followed in the company KA3. how to engage with both internal and external specialists for support in order to resolve incidents and service requests KA4. service request procedures, tools, and techniques KA5. protection equipment (anti-static wrist bands, shoes, dress, packaging, and other appropriate insulations) that is required to be used. KA6. first aid requirements in case of electrical shocks, cuts and other common injuries. KA7. knowledge of obtaining verified os, patches and application software from correct organizational channel.
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basics of mechanical engineering drawing and its geometry. KB2. basics of electrical engineering drawing and its symbol. KB3. basics knowledge of electromechanical hardware and software tools. KB4. acquire knowledge of basic assembly technique. KB5. structural basics of telecom systems and devices. KB6. maintain a knowledge-base of the known problems. KB7. standard fault-finding (troubleshooting) techniques.
Skills (S) [Optional]	
D. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. fill up record sheets clearly, concisely and accurately as per company procedures
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. to read, infer and interpret different types of engineering datasheets. SA3. read and understand organizational health and safety instructions
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. ability to communicate, manages, direct & supervise unskilled and semi-skilled work force for accomplishment of installation project work. SA5. ability to translate technical data to simple, layman friendly direct

TEL/N4120

Tower/Bay Installation - Electromechanical

E. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. make decisions pertaining to the concerned area of work
	Plan and Organize
	The user/individual on the job needs to know and understand: SB2. Plan and organize service feedback files/documents
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. manage relationships with customers who may be stressed, frustrated, confused, or angry SB4. build customer relationships and use customer centric approach
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB6. deal with clients lacking the technical background to solve the problem on their own SB7. identify immediate or temporary solutions to resolve delays
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. use the existing data to arrive at specific data points SB9. use the existing data points for improving the call resolution time SB10. use the existing data points to generate required reports for business
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB11. apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

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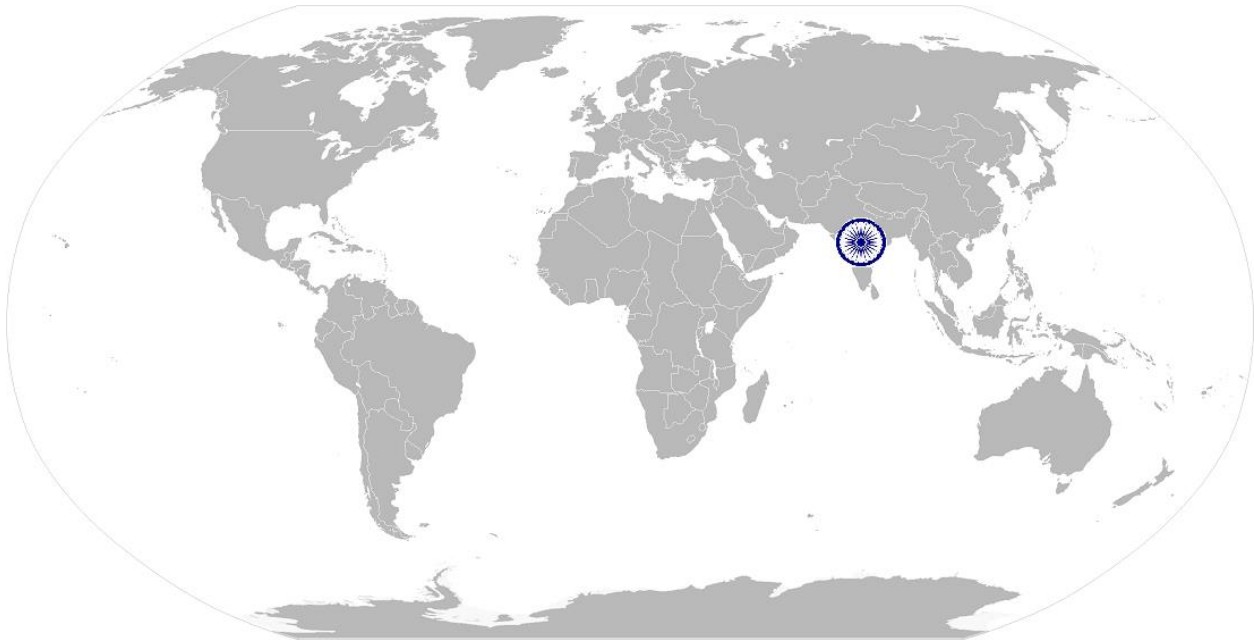
NOS Code	TEL/N4120		
Credits (NSQF)	TBD	Version number	1.0
Industry	Telecom	Drafted on	08/01/2015
Industry Sub-sector	Passive infra	Last reviewed on	21/06/2018
Occupation	Operations & Maintenance	Next review date	31/03/2019



TEL/N4121

Maintain a healthy, safe and secure working environment

National Occupational Standard



Overview

This unit is about monitoring the working environment and making sure it meets requirements for health, safety and security.

TEL/N4121
Maintain a healthy, safe and secure working environment

Unit Code	TEL/N4121
Unit Title (Task)	Maintain a healthy, safe and secure working environment
Description	This unit is about monitoring your working environment and making sure it meets requirements for health, safety and security.
Scope	This unit/task covers the following: Emergency procedures: • illness • accidents • fires • other reasons to evacuate the premises • breaches of security
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Emergency procedures	To be competent, the user/individual on the job must be able to: PC1. Ensure that work is carried out in accordance to the level of competence and legal requirements PC2. Ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work PC3. Ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work PC4. Identify and correct any hazards that you can deal with safely, competently and within the limits of your authority PC5. Report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected PC6. Follow your organization's emergency procedures promptly, calmly, and efficiently PC7. Identify and recommend opportunities for improving health, safety, and security to the designated person PC8. Complete any health and safety records legibly and accurately
Knowledge and Understanding (K)	
D. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Legislative requirements and organization's procedures for health, safety and security and your role and responsibilities in relation to this KA2. What is meant by a hazard, including the different types of health and safety hazards that can be found in the workplace KA3. How and when to report hazards KA4. Limits of your responsibility for dealing with hazards KA5. Your organization's emergency procedures for different emergency situations and the importance of following these KA6. The importance of maintaining high standards of health, safety and security KA7. Implications that any non-compliance with health, safety and security may have on individuals and the organization

TEL/N4121

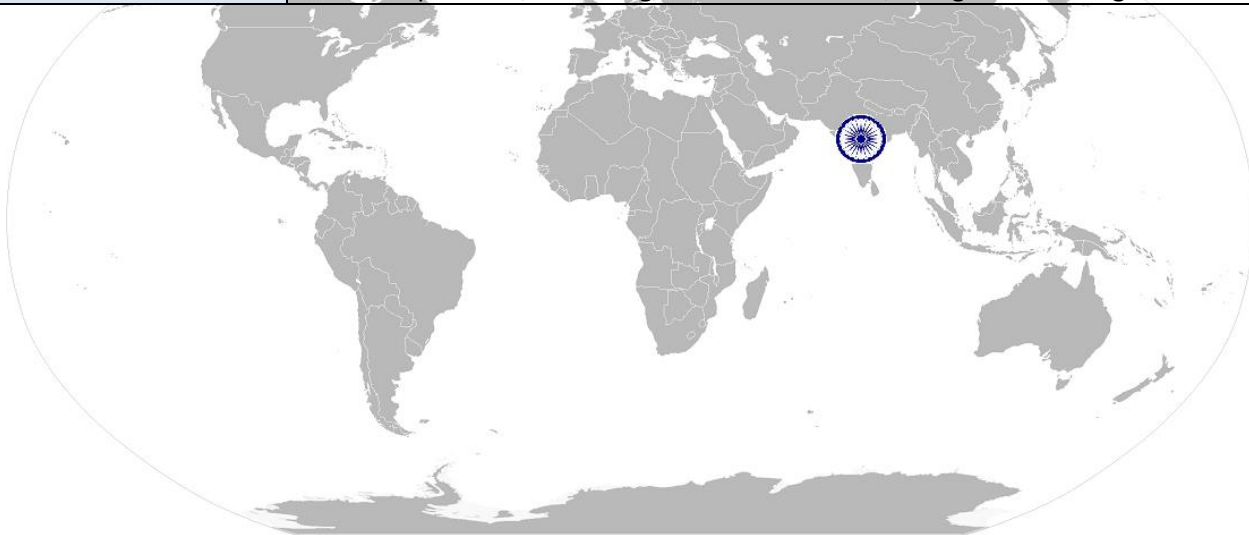
Maintain a healthy, safe and secure working environment

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Different types of breaches in health, safety and security and how and when to report these KB2. Evacuation procedures for workers and visitors KB3. How to summon medical assistance and the emergency services, where necessary KB4. How to use the health, safety and accident reporting procedures and the importance of these KB5. Government agencies in the areas of safety, health and security and their norms and services
Skills (S) [Optional]	
F. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Complete accurate, well written work with attention to detail
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. Read instructions, guidelines, procedures, rules and service level agreements
	Oral Communication (Listening and Speaking skills)
	You need to know and understand how to: SA3. Listen effectively and orally communicate information accurately
G. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Make decisions on suitable course of action
	Plan and Organize
	The user/individual on the job needs to know and understand: SB2. Plan and organize your work to meet health, safety and security requirements
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB3. manage relationships with customers who may be stressed, frustrated, confused, or angry SB4. build customer relationships and use customer centric approach

TEL/N4121

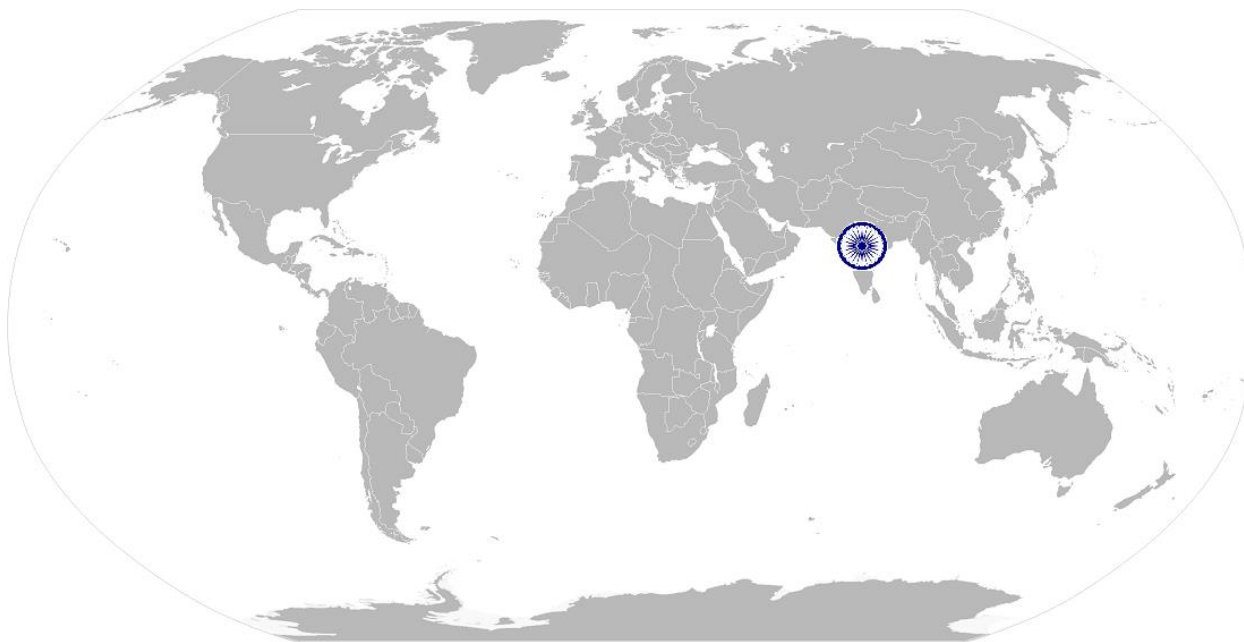
Maintain a healthy, safe and secure working environment

	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB5. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
	SB6. deal with clients lacking the technical background to solve the problem on their own
	SB7. identify immediate or temporary solutions to resolve delays
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB8. use the existing data to arrive at specific data points
	SB9. use the existing data points for improving the call resolution time
	Critical Thinking
	The user/individual on the job needs to know and understand how to:
	SB11. apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action



NOS Version Control

NOS Code	TEL/N4121		
Credits (NSQF)	TBD	Version number	1.0
Industry	Telecom	Drafted on	08/01/2015
Industry Sub-sector	Passive infra	Last reviewed on	21/06/2018
Occupation	Operations & Maintenance	Next review date	31/03/2019



CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Telecom Tower/Bay Installation Supervisor

Qualification Pack TEL/Q4104

Sector Skill Council Telecom

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- 4a. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
- 4b. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
5. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessment Outcome	Assessment Criteria	Marks Allocation			
		Total Mark (400)	Out of	Theory	Skills Practical
TEL/N4118 Tower/Bay Installation-Mechanical	PC1. Understanding design layout of Telecom Structures.	100	10	5	5
	PC2. Person able to understand the basic engineering concept.		6	3	3
	PC3. develop ability to read civil & mechanical drawings of complex mechanical structures using manual and software driven methods		10	4	6
	PC4. ability to use technical drawing software like autocad/ creo 2.0 (for reading drawing)		10	2	8

	PC5. ability to use software tools like ms office.		8	5	3
	PC6. working knowledge of traditionally deployed structures and bays.		5	3	2
	PC7.ability to read & physically correlate bill of material.		8	3	5
	PC8.determine components required for erection and assembly of tower.		6	5	1
	PC9. obtain materials required (such as components, equipment's, tools and other inventory) as per organizational procedures.		6	3	3
	PC10. ensure that tools, equipment's and other devices are in proper working condition and calibrated.		5	3	2
	PC11. arrange the required hardware tools like combination pliers, spanner. drill machine, etc.		6	2	4
	PC12. Supervise civil foundation and structural works		5	2	3
	PC13. Supervise mechanical assembly and erection work		5	2	3
	PC14. ensure that the documents are available to all appropriate authorities to inspect.		4	2	2
	PC15. ensure that issues inventory items document and summery are shared with appropriate team.		6	2	4
		Total	100	46	54

TEL/N4119 Tower/Bay Installation- Electrical	PC1. read design layout of telecom structures for cable fabrication.	100	14	6	8
	PC2. read electrical drawings of complex mechanical structures using manual and software driven methods		14	6	8
	PC3. working knowledge of conventionally deployed cable assembly.		8	4	4
	PC4. understanding graphic symbols used on drawing sheet.		10	3	7
	PC5. basic knowledge of fibre-optic cable.		10	5	5
	PC6.ability to understand diverse electrical diagrams.		10	6	4
	PC7.Arrange the required hardware tools like combination plier, wire cutter, wire stripper, nose pliers etc. For cable assembly.		8	3	5
	PC8.Ensure that tools, equipment's and other devices are in proper working condition and calibrated		5	3	2
	PC9. Determine components required based on fault installation line.		6	3	3
	PC10. Supervise cable assembly and wiring harnesses		5	1	4
	PC11. Retain documents for specific period of time, as per company procedure.		6	2	4
	PC12. Ensure record sheets are completed accurately, as per company guidelines		4	2	2
		Total	100	46	54

TEL/N4120	PC1. Understanding design layout of Electromechanical structures of telecom industry.	100	10	5	5
Tower/Bay Installation-Electromechanical	PC2. read mechanical, civil and electrical drawings of complex electromechanical		5	2	3
	PC3. Skill to use software tools like MS office.		8	3	5
	PC4.Working knowledge of conventionally deployed structures, bays & wiring assembly of tower.		5	2	3
	PC5. Develop ability to create simple drawing sheet of electromechanical structure.		6	2	4
	PC6. read simple electrical drawings using software AutoCAD Electrical (2012).		5	2	3
	PC7.read mechanical drawings of complex mechanical structures using Manual and Software Driven Methods.		4	2	2
	PC8.Ability to read & physically correlate bill of material of electromechanical structure		8	4	4
	PC9.Ability to read basic electrical graphical symbols including receptacles, switches, batteries, fuses, and circuit breakers.		5	2	3
	PC10.Troubleshooting and repairing of Telecom tower & wiring Harnesses		4	2	2
	PC11.Working knowledge of usually deployed cable assembly		4	2	2
	PC12.Understanding Graphic Symbols used on drawing sheet.		5	3	2
	PC13.Fibre-optics Installation line visualization		3	2	1
	PC14.Determine components required for Tower Installation & cable Routing.		4	2	2
	PC15.Organize the required hardware tools for electromechanical structure setup and realization.		3	1	2

	PC16. Supervise civil foundation & structural works		6	2	4
	PC17. Supervise mechanical assembly & erection works		5	1	4
	PC18. Supervise cable assembly and wiring harnesses		5	1	4
	PC19. Ensure that the record sheets are completed accurately, as per company guidelines		3	2	1
	PC20. Retain documents for specific period of time, as per company procedure.		2	1	1
		Total	100	48	52

TEL/N4121 Maintain a healthy, safe and secure working environment	PC1. Ensure that work is carried out in accordance to the level of competence and legal requirements	100	10	6	4
	PC2. Ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work		12	6	6
	PC3. Ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out work		15	9	6
	PC4. Identify and correct any hazards that you can deal with safely, competently and within the limits of your authority		15	10	5
	PC5. Report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected		12	7	5
	PC6. Follow your organization's emergency procedures promptly, calmly, and efficiently		12	6	6
	PC7. Identify and recommend opportunities for improving health, safety, and security to the designated person		14	8	6
	PC8. Complete any health and safety records legibly and accurately		10	5	5
		Total	100	57	43