

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR ELECTRONICS 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

Contact Us:

Electronics Sector Skill
Council of India
602,604,608,6th floor
Ansal Chambers II,
Bhikaji Cama Place
New Delhi-110066,
India

E-mail:

info@essc-india.org



Contents

1. Introduction and Contacts.....	1
2. Qualifications Pack.....	2
3. Glossary of Key Terms.....	3
4. OS Units.....	5
5. Annexure: Nomenclature for QP & OS.....	36
6. Assessment Criteria.....	38

Introduction

Qualifications Pack - Security System Installation Technician

SECTOR/S: ELECTRONICS

SUB-SECTOR: Security Surveillance

OCCUPATION: After Sales Support

REFERENCE ID: ELE/Q4611

ALIGNED TO: NCO-2015/ NIL

Brief Job Description: A security system installation technician is responsible for installing and commissioning security system as per given instructions with the help of cabling technicians. The job duties involve identification and repair of technical faults as per customer's requirements and job specifications. The candidate must also comply with relevant code of practices and healthy and safety guidelines relevant to work.

Personal Attributes: Must exhibit good customer service attributes-courteous, solution-oriented, polite, reliable, good decision-making skills, etc. Must be for used on quality outcomes. Possess an alert mind, physically active body and a study arm-hand coordination; must be reliable, honest and attentive to details. Should be responsible for own outcomes and work in a team.

Job Details	Qualifications Pack Code	ELE/Q4611		
	Job Role	Security System Installation Technician (Applicable for National Scenarios)		
	Credits	TBD	Version number	1.0
	Sector	Electronics	Drafted on	15/01/2016
	Sub-sector	Security Surveillance	Last reviewed on	05/05/2016
	Occupation	After Sales Support	Next review date	05/05/2018
	NSQC Clearance on	19/12/2018		

Job Role	Security System Installation Technician
Role Description	Performs installation, commission and repair of different categories of security systems in accordance with given work specifications and customer's requirements.
NSQF level	4
Minimum Educational Qualifications	12 th Standard (Science)
Maximum Educational Qualifications	
Prerequisite License or Training	Not Applicable
Minimum Job Entry Age	18 Years
Experience	Not applicable
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> ELE/N4619 Install and commission electronic security system ELE/N4622 Identify and repair faults in security system ELE/N1001 Use basic health and safety practices in electrical and electronics work CSC/N1336 Work effectively in team
Performance Criteria	As described in the relevant OS units

Definitions

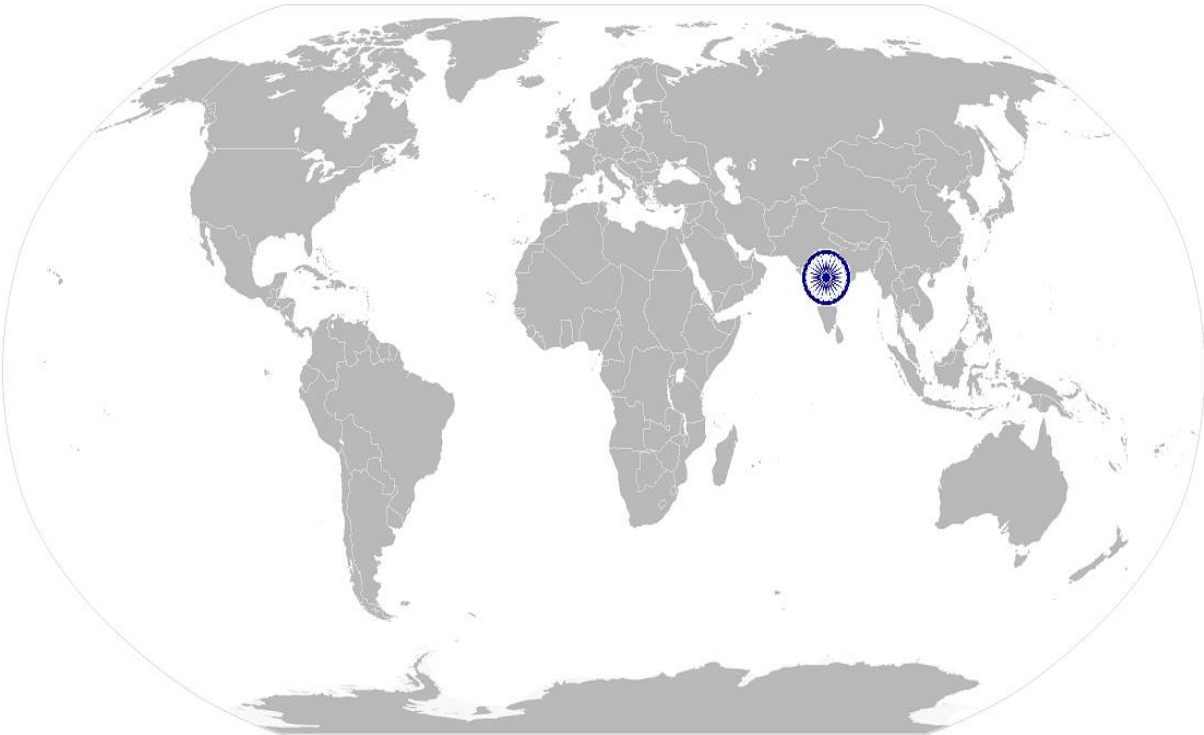
Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding 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.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack(QP)	QP comprises the set of OSs, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual need 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.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish

	specific designated responsibilities.
Core Skills/Generic Skills	Core skills or generic skills 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. In the context of the OS, these include communication related skills that are applicable to most job roles.
Keywords /Terms	Description
NSQF	National Skill Qualification Framework
NOS	National Occupational Standards
LAN	Local Area Network
WAN	Wide Area Network
IT	Information Technology
IP	Internet Protocol
PPE	Personal Protective Equipment
VDP	Video To Door Phone
PIR	Passive Infra-Red
CCTV	Closed Circuit Television
RFID	Radio Frequency Identification

ELE/N4619

Install and commission electronic security system

National Occupational Standard



Overview

This unit describes the skills and competencies required to install and commission different types of electronic security systems using approved installation and commissioning procedures.

ELE/N4619

Install and commission electronic security system

National Occupational Standard	Unit Code	ELE/N4619
	Unit Title (Task)	Install and commission electronic security system
	Description	The job duties of an electronic security system installation technician are to primarily install and commission security system at residential, commercial or industrial places as per given work instructions.
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Customer handling • Work safely • Prepare to install and commission security system • Install cable using approved procedures • Carry out equipment installation • Connect cables appropriately • Test and commission security system • Post installation Activities
Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria	
Customer handling	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC1. introduce self and organization correctly, and state the purpose of visit</p> <p>PC2. interpret customer's security requirements as per needs communicated</p> <p>PC3. speak politely and respectfully with the customer at all times</p> <p>PC4. provide accurate information at all times in line with organization's quality standards and procedures</p>	
Work safely	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines</p> <p>PC6. use personal protective equipment (PPE) suitable to installation and commissioning of security systems Personal Protection Equipment: safety glasses, head protection, ear muffs, safety footwear, knee pads, gloves, flash lights, apron, etc.</p> <p>PC7. comply with safety electrical practices such as use of insulated tools & devices while handling electrical connections/systems</p> <p>PC8. follow safe working practices while working at height, confined spaces, etc.</p> <p>PC9. assess possible risks and hazards in electronics work and implement safety measures where necessary</p>	
Prepare to install and commission security systems	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC10. obtain correct work order, blueprints electrical layouts and building plan, and other related instructions from responsible authority</p>	

ELE/N4619

Install and commission electronic security system

	<p>PC11. obtain appropriate tools, equipment and materials required to perform work Tools & equipment: e.g. cable testing equipment, communication equipment, consumable items (batteries), crimp tools, fixing tools, hand tools, IDS tools, ladder, multi meter, power tools, soldering iron, templates, driller, etc.</p> <p>PC12. ensure that selected tools and equipment are safely calibrated and in good working condition</p> <p>PC13. confirm customer's security needs and estimate the required coverage area</p> <p>PC14. identify appropriate location for optimum performance of security system within limitation imposed by customer and relevant regulations</p> <p>PC15. ensure safe isolation of electrical circuits prior to commencing work</p> <p>PC16. check that accessories are installed straight and square in the selected locations and within acceptable tolerance</p>
<p>Install cable using approved procedures</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC17. identify required cable supports, containment systems and fixing devices needed during cabling as per work requirements</p> <p>PC18. use approved procedures to route and secure cables, wires and cable containment as per work specifications Cable containment: e.g. conduit, ducting, ceiling voids, trays, surface mounted, catenaries, trunking (plastic & steel), etc.</p> <p>PC19. test the cables and wires for any possible damages or faults in line with required quality standards</p>
<p>Carry out equipment installation</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC20. verify if the mounting surface is solid and capable of supporting the equipment weight</p> <p>PC21. use approved technique to install equipment as per given work specification</p> <p>PC22. adjust mounting position without causing any damage to equipment and in line with customer's requirements, operational effectiveness and required quality standards</p> <p>PC23. follow approved procedures to secure fastening accessories to the mounting surface using correct fixing devices as per manufacturer's instructions Fixing devices: e.g. saddles; conduit; loxins; girder clips; wall plugs; hollow wall anchors; silicon; screws; parts and components; insulation tape; sealing compounds; solder; etc.</p>
<p>Connect cables appropriately</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC24. apply approved technique to terminate cables and conductors to accessories as per manufacturer's specification Cables & wires: e.g. coaxial, wire pair, CAT5, CAT6, power cable, armoured and unarmoured, etc. Technique: screw, insulation displacement, solder, wire-wrap, crimp, clamped</p> <p>PC25. verify that no loose wires are left unattended; connectors are properly fitted, and metallic components of cable are not exposed</p>

ELE/N4619

Install and commission electronic security system

	<p>PC26. check that power over load protection device is attached where necessary and the continuity of voltage is maintained</p>
<p>Test and commission security system</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC27. ensure that system is positioned correctly as required specification given in the manufacturer's guidelines</p> <p>PC28. test and commission installed security system using appropriate tools and methods</p> <p>PC29. follow appropriate commissioning procedures without causing any damages to the equipment, circuit, environment etc.</p> <p>PC30. carry out appropriate system software installation and commissioning procedures applicable to security systems</p> <p>PC31. test the operational performance of the installed security system against defined quality parameters Testing equipment: multi meter, dB meter, data logging, earth loop impedance, another specialised test equipment, etc.</p> <p>PC32. establish correct transmission protocol for device output such as customer's IT system, communication system, the security system and the transmission equipment, etc. Device output: IP network, LAN & WAN, network switches, telecom network, etc.</p> <p>PC33. verify that the network configuration meets the customer's IT systems specification where applicable</p> <p>PC34. record the testing results accurately in the correct format as per standard operation requirements</p>
<p>Post installation Activities</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC35. handover the completed security system with related information to customer as per organizational standards and regulatory requirements Information: e.g. specifications; variants and capabilities; installation procedures; manufacturer's instructions; service and maintenance requirements; warranties and guarantees, etc.</p> <p>PC36. demonstrate the operation of the system to the customer in line with organizational standards</p> <p>PC37. file completion of installation report in designated document as per organizational policies and procedures</p> <p>PC38. repair the building surfaces to its original condition post installation in accordance with organizational quality standards and policies</p> <p>PC39. dispose hazardous and non-hazardous waste materials as per instructions given in the organization's and other regulatory bodies' environmental policies</p> <p>PC40. report any work-related problems or issues to appropriate authority and seek</p>

ELE/N4619

Install and commission electronic security system

	<p>possible solutions</p> <p>PC41. return all tools and devices to their designated storage area safely after the completion of work</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company/ organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. relevant people and their responsibilities within the work area</p> <p>KA8. escalation matrix and procedures for reporting work and employment related issues</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. use appropriate personal protection equipment suitable to carry out installation and commissioning of security systems</p> <p>KB2. possible risks and hazards involved in the work environment</p> <p>KB3. safe working practices used while working at height, confined spaces, etc.</p> <p>KB4. quality standards, operational parameters, safety compliance and relevant regulatory requirements e.g. fire safety regulation (National Building Code of India)</p> <p>KB5. basic of electrical and electronics e.g. circuits (load, conductor, voltage), D.C & A.C. power source, units of measurement: V, kV, etc., current, series and parallel connection, resistor, capacitor, etc.</p> <p>KB6. electrical safety practices</p> <p>KB7. necessity of earthing systems arrangements and requirements</p> <p>KB8. types of security systems, their parts and functions Types of electronic security systems: access control systems, intruder alarm systems, closed circuit television (CCTV) systems (digital video door phone; IP camera; DVR's & NVR's; Analog camera), fire detection and alarm systems (Fire detection & alarm (conventional & addressable); Gas leak detection)</p> <p>KB9. range of security systems included in access control system namely, gate automation such as boom barriers, turnstile, flap barrier, etc. Access control systems: card readers, PIN access, Biometrics, RFID system</p>

ELE/N4619

Install and commission electronic security system

	<p>KB10. software and hardware used in security systems</p> <p>KB11. software installation and commissioning applicable to security systems</p> <p>KB12. Installation techniques and factors affecting their uses Factors: application, load-bearing capacity, fabric of structure, environmental conditions, aesthetic considerations</p> <p>KB13. range of tools, equipment and testing devices used</p> <p>KB14. different types of cables, connectors and supporting accessories there uses and limitations Connectors: e.g. RJ 45, BNC, RCA, etc.</p> <p>KB15. basic uses and application of fibre optic cables</p> <p>KB16. techniques used to terminate cables</p> <p>KB17. high voltage protection device used in equipment</p> <p>KB18. approved safe practices for lifting and carrying heavy equipment</p> <p>KB19. devices and methods used to secure and route cables, wire and cable containment</p> <p>KB20. importance of correct equipment placement and positioning, e.g. straight and square</p> <p>KB21. methods and devices used to seal cable entries</p> <p>KB22. relevant regulatory requirements and customer confidentiality</p> <p>KB23. maintaining professional attitude and customer service standards Customer service standards: identify self and company correctly; provide accurate information; solve customer's problem in a time-bound manner; show respect; tend to queries and complaints, etc.</p> <p>KB24. safe disposal of hazardous and non-hazardous waste materials</p> <p>KB25. how to protect security systems against environmental factors and IP ratings of the environmental factors Factors: dust penetration, water penetration, corrosion, temperature changes, humidity changes, (lightening only knowledge)</p> <p>KB26. types of building materials & structures, architectural surface, interior and exterior of customer's premises Building materials: masonry, brick, concrete, metal, plasterboard, timber, plastic</p> <p>KB27. escalation matrix or reporting procedures of technical problems</p> <p>KB28. how to document reports such as test results, customer requests/complaints,</p> <p>KB29. technical terminology, units, signs, symbols, etc. related to security systems</p> <p>KB30. what is scanner systems Scanner system: door frame metal detector, hand held, guard monitoring system (standalone & patrol)</p> <p>KB31. what is Intruder alarm system Intruder Alarm System: door switches, glass break sensors, and linear-beam sensors, pressure/seismic sensors, magnetic field sensors, buried-ported</p>
--	--

ELE/N4619

Install and commission electronic security system

	coaxial cable, and buried fiber-optic cable sensor systems
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. fill up appropriate forms, activity logs, attendance sheets as per organizational format in English and/or local language SA2. document work completion report including key tasks performed, product category, customer feedback/requests, etc.in English or local language SA3. record customer details, service availed, issue of warranty/guarantee in appropriate forms
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA4. read and interpret information correctly from job specification documents, health and safety instructions, etc. applicable to the job in English and/or local language SA5. read signages, safety symbols, warnings, etc. displayed in work environment SA6. read and comprehend manufacturer's instructions on equipment and devices correctly
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. communicate with customer clearly and effectively SA8. convey and share technical information clearly using appropriate language SA9. check and clarify task-related information SA10. liaise with appropriate authorities using correct protocol SA11. communicate with people in respectful form and manner in line with organizational protocol
	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. seek clarification from immediate supervisor or responsible authority on how to resolve problems when faced with difficult situations SB2. decide the feasibility of customer's needs with respect to given work environment SB3. determine the suitability of installation site based on own learning and work requirements
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB4. plan, prioritize and sequence work operations as per job requirements SB5. organize and analyze information relevant to work

ELE/N4619

Install and commission electronic security system

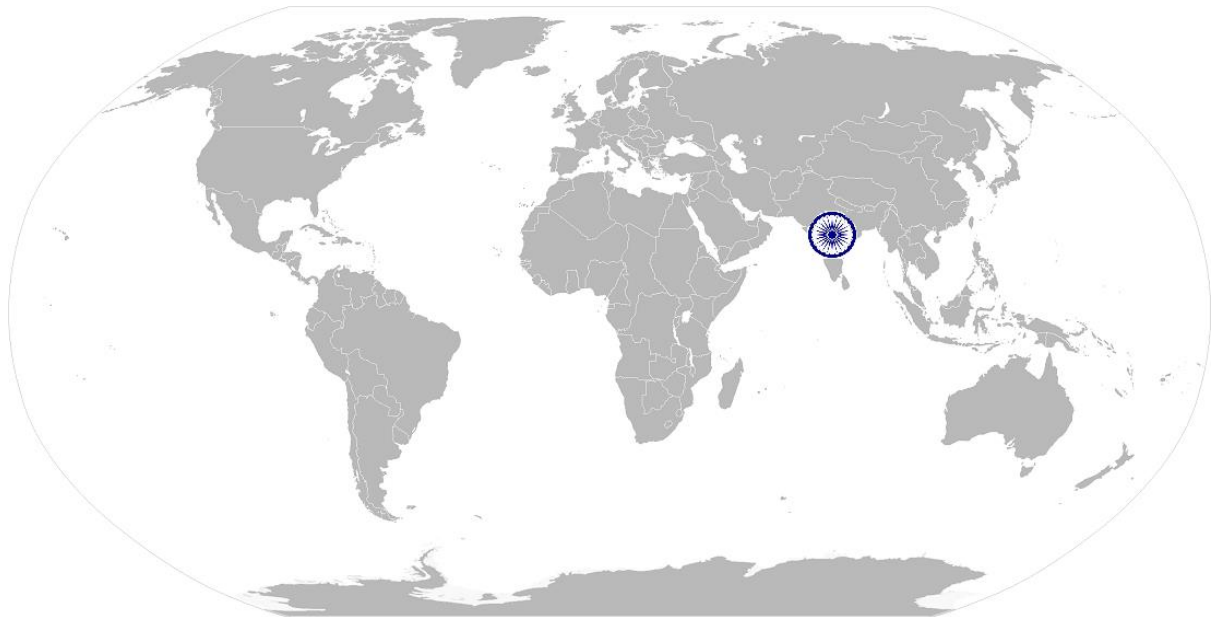
	<p>SB6. basic concepts of work productivity including waste reduction, efficient material usage and optimization of time</p>
	<p>Customer Centricity</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. receptive to customer's needs within the scope of the work</p> <p>SB8. provide customer with information on how to enhance quality and efficiency of equipment/ system</p> <p>SB9. respect customer's decision and privacy, maintain professional relationship and adhere to relevant confidentiality clauses</p>
	<p>Problem Solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. identify problems with work planning, procedures, output and behaviour and their implications</p> <p>SB11. prioritize and plan for problem solving</p> <p>SB12. communicate problems appropriately to others</p> <p>SB13. identify sources of information and support for problem solving</p> <p>SB14. seek assistance and support from other sources to solve problems</p> <p>SB15. identify effective resolution techniques</p> <p>SB16. select and apply resolution techniques</p> <p>SB17. seek evidence for problem resolution</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB18. identify potential problems at work and review related information to develop, evaluate and implement solutions</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB19. apply logic and reasoning to identify the pros and cons of alternative solutions or approaches to problems at work</p>

ELE/N4619

Install and commission electronic security system

NOS Version Control

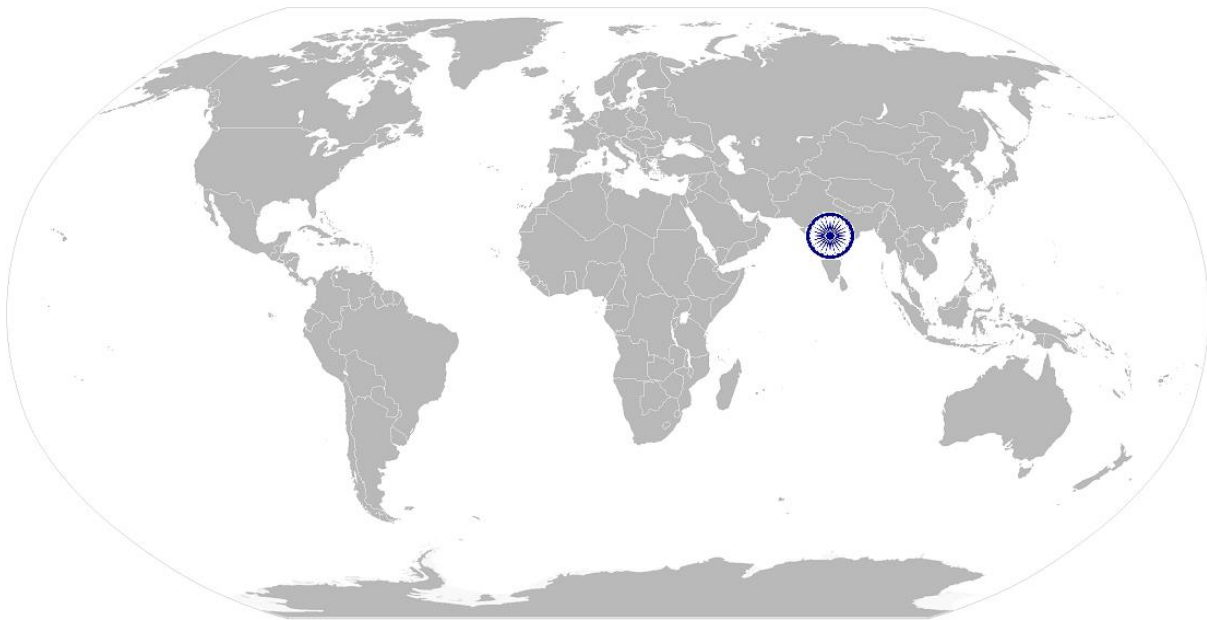
NOS Code	ELE/N4619		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	15/01/2016
Industry Sub-sector	Security Surveillance	Last reviewed on	05/05/2016
Occupation	After Sales Support	Next review date	05/05/2018



ELE/N4622

Identify and repair faults in security system

National Occupational Standard



Overview

This unit is about the key skills and competencies required for an installation technician to identify faults and carry out repair or replace of parts/ components of system using approved procedures.

ELE/N4622

Identify and repair faults in security system

National Occupational Standard	Unit Code	ELE/N4622
	Unit Title (Task)	Identify and repair faults in security system
	Description	A security system installation technician is capable of performing a wide range of tasks such as installation and commissioning, diagnosing and repairing faults. The job duties may be performed at customer's premise or in a set work place.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Customer handling • Work safely • Prepare work place to perform maintenance and determine fault • Repair faults or replace components • Post repair activity
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Customer Handling	To be competent, the user/ individual on the job must be able to: <ul style="list-style-type: none"> PC1. introduce self and organization correctly, and state the purpose of visit PC2. interpret customer's security requirements as per needs communicated PC3. speak politely and respectfully with the customer at all times PC4. provide accurate information at all times in line with organization's quality standards and procedures
	Work safely	To be competent, the user/ individual on the job must be able to: <ul style="list-style-type: none"> PC5. work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines PC6. use personal protective equipment (PPE) suitable to installation and commissioning of security systems Personal Protection Equipment: safety glasses, head protection, ear muffs, safety footwear, knee pads, gloves, flash lights, apron, etc. PC7. comply with safety electrical practices such as use of insulated tools & devices while handling electrical connections/systems PC8. follow safe working practices while working at height, confined spaces, etc. PC9. assess possible risks and hazards in the work environment and implement safety measures where necessary
	Prepare work place to perform maintenance and determine fault	To be competent, the user/ individual on the job must be able to: <ul style="list-style-type: none"> PC10. obtain correct work order and other related instructions from responsible authority PC11. identify tools, equipment, resources and materials required as per given job specifications Tools & equipment: cable testing equipment, communications equipment,

ELE/N4622

Identify and repair faults in security system

	<p>consumable items (batteries), crimp tools, fixing tools, hand tools, IDS tools, ladder, multi meter, power tools, soldering iron, templates Resource: e.g. blueprint layout/building plan and manufacturer’s manuals, etc.</p> <p>PC12. check that the selected tools and equipment are in working condition and compliant with safety and operational requirements</p> <p>PC13. confirm circuits/machines are being checked and safely isolated in accordance with relevant regulatory requirements and organizational standards</p> <p>PC14. inform any affected parties before disengaging networked system to avoid work disruption</p> <p>PC15. comply with manufacturer’s instructions on how to disengage/shut down the equipment and operating system</p> <p>PC16. follow approved procedures to access identified equipment/system in line with manufacturer’s instructions</p> <p>PC17. disassemble the system as per manufacturer’s instructions without causing damage or distortion to system</p> <p>PC18. carry out preliminary fault checks using approved logical diagnostic and systematic fault-finding methods of the networked security components Preliminary fault checks: e.g. connections (short circuits, loose wiring, etc.), voltage discontinuity, breakage, power connectors, loose connectors, etc.</p> <p>PC19. use approved procedures to test suspected source of fault using appropriate testing devices</p>
<p>Repair faults or replace components</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC20. use approved devices and techniques to rectify any identified common faults Common faults: e.g. faulty connection (short circuits, loose wiring, etc.), voltage discontinuity, breakage, power connectors, loose connectors, etc.; software system reprogramming,</p> <p>PC21. make adjustments or replace faulty components in line with required quality parameters and manufacturer’s instructions</p> <p>PC22. report any unprecedented or complex fault conditions to responsible personnel as per organization’s procedures</p>
<p>Post repair activity</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC23. reassemble equipment and system components as per manufacturer’s instructions and test the operational efficiency as per given quality parameters</p> <p>PC24. return all used tools and materials safely to designated storage</p> <p>PC25. report any damages or malfunctions in tools and equipment to responsible personnel</p> <p>PC26. record the work fully and accurately in relevant document as per organization’s standard procedures</p> <p>PC27. handover the rectified security system and related information to customer as per organization’s standard and regulatory requirements</p>

ELE/N4622

Identify and repair faults in security system

	<p>Information: specifications; variants and capabilities; installation procedures; manufacturer's instructions; service and maintenance requirements; warranties and guarantees</p> <p>PC28. demonstrate the operation of the system to the customer in line with required standards</p> <p>PC29. leave the work area in a clean and safe condition</p> <p>PC30. restore workplace to its original condition</p> <p>PC31. dispose toxic and non-toxic wastes appropriately in line with relevant environmental and safety policies</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. relevant people and their responsibilities within the work area</p> <p>KA8. escalation matrix and procedures for reporting work and employment related issues</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. use appropriate personal protection equipment suitable to carry out installation and commissioning of security systems</p> <p>KB2. possible risks and hazards involved in the work environment</p> <p>KB3. safe working practices used while working at height, confined spaces, etc.</p> <p>KB4. quality standards, operational parameters, safety compliance and relevant regulatory requirements e.g. fire safety regulation (National Building Code of India)</p> <p>KB5. basic of electricals and electronics e.g. circuits (load, conductor, voltage), D.C & A.C. power source, units of measurement: V, kV, etc., current, series and parallel connection, resistor, capacitor, etc.</p> <p>KB6. electrical safety practices</p> <p>KB7. necessity of earthing systems arrangements and requirements</p> <p>KB8. types of security systems, their parts and functions</p> <p>Types of electronic security systems: access control systems, intruder alarm systems, closed circuit television (CCTV) systems (digital video door phone; IP</p>

ELE/N4622

Identify and repair faults in security system

	<p>camera; DVR's & NVR's; Analog camera), fire detection and alarm systems (Fire detection & alarm (conventional & addressable); Gas leak detection)</p> <p>KB9. range of security systems included in access control system namely, gate automation such as boom barriers, turnstile, flap barrier, etc.</p> <p>KB10. internet protocol (IP) and its application to security systems: e.g. local area network (LAN), wide area network (WAN)</p> <p>KB11. software and hardware used in security systems</p> <p>KB12. programming applicable to security systems</p> <p>KB13. preliminary checks to find fault(s) in system</p> <p>KB14. approved logical diagnostic and systemic fault-finding methods</p> <p>KB15. range of tools, equipment and testing devices used</p> <p>KB16. different types of cables, connectors and supporting accessories, their uses and limitations Connectors: e.g. RJ 45, BNC, RCA, etc.</p> <p>KB17. basic uses and application of fibre optic cables</p> <p>KB18. techniques used to terminate cables</p> <p>KB19. high voltage protection device used in equipment</p> <p>KB20. approved safe practices for lifting and carrying heavy equipment</p> <p>KB21. devices and methods used to secure and route cables, wire and cable containment</p> <p>KB22. importance of correct equipment placement and positioning, e.g. straight and square</p> <p>KB23. methods and devices used to seal cable entries</p> <p>KB24. relevant regulatory requirements and customer confidentiality</p> <p>KB25. maintaining professional attitude and customer service standards Customer service standards: identify self and company correctly; provide accurate information; solve customer's problem in a time-bound manner; show respect; tend to queries and complaints, etc.</p> <p>KB26. safe disposal of hazardous and non-hazardous waste materials</p> <p>KB27. how to protect security systems against environmental factors and IP ratings of the environmental factors Factors: dust penetration, water penetration, corrosion, temperature changes, humidity changes, (lightening only knowledge)</p> <p>KB28. types of building materials & structures, architectural surface, interior and exterior of customer's premises Building materials: masonry, brick, concrete, metal, plasterboard, timber, plastic</p> <p>KB29. escalation matrix or reporting procedures of technical problems</p> <p>KB30. how to document reports such as test results, customer requests/complaints,</p> <p>KB31. technical terminology, units, signs, symbols, etc. related to security system</p> <p>KB32. what is scanner systems</p>
--	---

ELE/N4622

Identify and repair faults in security system

	<p>Scanner system: door frame metal detector, hand held, guard monitoring system (standalone & patrol)</p> <p>KB33. what is Intruder alarm system</p> <p>Intruder Alarm System: door switches, glass break sensors, and linear-beam sensors, pressure/seismic sensors, magnetic field sensors, buried-ported coaxial cable, and buried fiber-optic cable sensor systems</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. fill up appropriate forms, activity logs, attendance sheets as per organizational format in English and/or local language</p> <p>SA2. document work completion report including key tasks performed, product category, customer feedback/requests, etc.in English or local language</p> <p>SA3. record customer details, service availed, issue of warranty/guarantee in appropriate forms</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. read and interpret information correctly from job specification documents, health and safety instructions, etc. applicable to the job in English and/or local language</p> <p>SA5. read signages, safety symbols, warnings, etc. displayed in work environment</p> <p>SA6. read and comprehend manufacturer’s instructions on equipment and devices correctly</p>
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA7. communicate with customer clearly and effectively</p> <p>SA8. convey and share technical information clearly using appropriate language</p> <p>SA9. check and clarify task-related information</p> <p>SA10. liaise with appropriate authorities using correct protocol</p> <p>SA11. communicate with people in respectful form and manner in line with organizational protocol</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. seek clarification from immediate supervisor or responsible authority on how to resolve problems when faced with difficult situations</p> <p>SB2. decide the feasibility of customer’s needs with respect to given work environment</p> <p>SB3. identify complex faults or problems that are beyond one’s scope of competency</p>

ELE/N4622

Identify and repair faults in security system

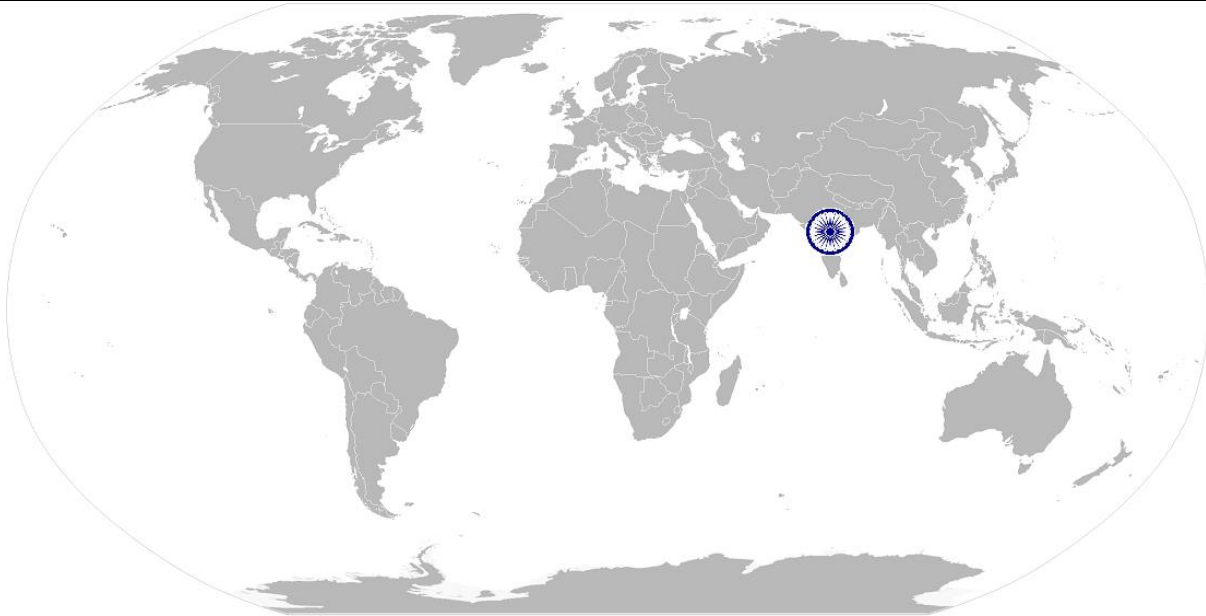
	and report to appropriate authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. identify problems with work planning, procedures, output and behavior and their implications SB5. prioritize and plan for problem solving SB6. communicate problems appropriately to others SB7. identify sources of information and support for problem solving SB8. seek assistance and support from other sources to solve problems SB9. identify effective resolution techniques SB10. select and apply resolution techniques SB11. seek evidence for problem resolution
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB12. plan, prioritize and sequence work operations as per job requirements SB13. organize and analyze information relevant to work SB14. basic concepts of work productivity including waste reduction, efficient material usage and optimization of time
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB15. receptive to customer's needs within the scope of the work SB16. provide customer with information on how to enhance quality and efficiency of equipment SB17. respect customer's decision and privacy, maintain professional relationship and adhere to relevant confidentiality clauses
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB18. identify potential problems at work and review related information to develop, evaluate and implement solutions
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB19. apply logic and reasoning to identify the pros and cons of alternative solutions or approaches to problems at work

ELE/N4622

Identify and repair faults in security system

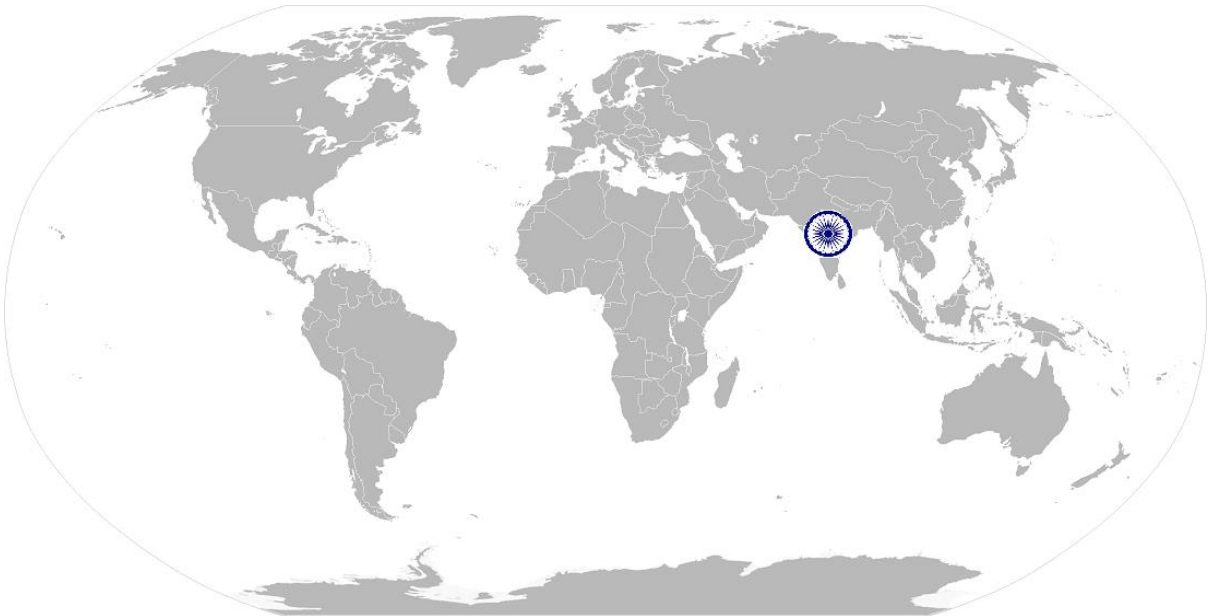
NOS Version Control

NOS Code	ELE/N4622		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	15/01/2016
Industry Sub-sector	Security Surveillance	Last reviewed on	05/05/2016
Occupation	After Sales Support	Next review date	05/05/2018



ELE/N1001 Use basic health and safety practices in electrical and electronics work

National Occupational Standard



Overview

This unit covers health, safety and security practices associated with electrical and electronics system. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment in a given site while working with electrical and electronic equipment.

ELE/N1001 Use basic health and safety practices in electrical and electronics work

National Occupational Standard	Unit Code	ELE/N1001
	Unit Title (Task)	Use basic health and safety practices in electrical and electronics work
	Description	This unit covers health, safety and security guidelines pertaining to electrical and electronics work. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Health and safety • Fire safety • Emergencies, rescue and first-aid procedures
	Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria	
Health and safety	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. use protective clothing/equipment for specific tasks and work conditions Protective clothing: rubber gloves, flame proof aprons, flame proof overalls buttoned to neck, cuffless (without folds), trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/ plugs, safety boots, knee pads, particle masks, glasses/ goggles/ visors Equipment: hand and face shields, machine guards, residual current devices, shields, dust sheets, respirator</p> <p>PC2. state the name and location of people responsible for health and safety in the workplace</p> <p>PC3. state the names and location of documents that refer to health and safety in the workplace</p> <p>PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace</p> <p>Hazards: electrical hazards (dealing with high voltage equipment, power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.); sharp edged and heavy tools; heated metals; oxyfuel and gas cylinders; welding radiation; hazardous surfaces (sharp, slippery, uneven, chipped, broken, etc.); hazardous substances (chemicals, gas, oxy-fuel, fumes, dust, hazardous waste materials, etc.); physical hazards(working at heights, working in windy or moist areas, large and heavy objects and machines, sharp and piercing objects, moving objects and part of machinery, tolls and machines, intense light, load noise, abnormal temperature; obstructions in corridors, by doors, blind turns, over stacked shelve sand packages, etc.); working in high</p>	

ELE/N1001 Use basic health and safety practices in electrical and electronics work

	<p>temperatures Possible causes of risk and accident: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness); not taking safety precautions</p> <p>PC5. follow safe methods while repairing building surfaces in compliant with related building regulations and customer’s specifications</p> <p>PC6. risks of electric shock when working with electrical tools/equipment and system</p> <p>PC7. follow warning signs (danger, out of service, etc.) while accessing sensitive areas</p> <p>PC8. comply with safe working standards when dealing with potential hazards such as working at heights, lifting and handling heavy equipment</p> <p>PC9. test any electrical equipment and system using insulated testing devices before touching them</p> <p>PC10. ensure positive isolation of electrical equipment & system as per given standards</p> <p>PC11. state methods for controlling safe access and egress from site</p> <p>PC12. ensure safe working of access control equipment as per given specifications</p> <p>PC13. carry out safe working practices while dealing with hazards to ensure the safety of self and others Safe working practices: using protective clothing and equipment; putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; while working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.; safe lifting and carrying practices; use equipment that is working properly and is well maintained; take due measures for safety while working at heights, etc. including safety harness, fall arrestors, guardrails, proper work positioning, do not jump or overload, etc.; take due measures for safety while working in confined spaces or trenches, etc.</p> <p>PC14. state methods of accident prevention in the work environment of the job role Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors</p> <p>PC15. state location of general health and safety equipment in the workplace General health and safety equipment: fire extinguishers; first aid equipment; safety instruments and clothing; safety installation (e.g. fire exits, exhaust</p>
--	---

ELE/N1001 Use basic health and safety practices in electrical and electronics work

	<p>fans)</p> <p>PC16. inspect for faults, set up and safely use scaffolds, elevated platforms and ladders Faults: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc. Set up: firm/level base, clip/lash down, leaning at the correct angle, appropriate load as per capacity, etc.</p> <p>PC17. lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa</p> <p>PC18. apply good housekeeping practices at all times Good housekeeping practices: clean/tidy work areas, removal/disposal of waste products, protect surfaces</p> <p>PC19. identify common hazard signs displayed in various areas Various areas: labels on equipment; packages; inside buildings; in open areas and public spaces, etc.</p> <p>PC20. retrieve and/or point out documents that refer to health and safety in the workplace Documents: fire notices, accident reports, safety instructions for equipment and procedures, company notices and documents, legal documents (e.g. government notices)</p> <p>PC21. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly</p>
Fire safety	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC22. use the various appropriate fire extinguishers on different types of fires correctly Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids; Class C: e.g. combustible gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class D: combustible chemicals and metals such as magnesium, titanium, and sodium (These fires burn at extremely high temperatures and require special suppression agents) These categories of fires become Class A, B, C and D fires when the electrical equipment that initiated the fire is no longer receiving electricity; Class E: e.g. electrical equipment such as appliances, wiring, breaker panels, etc.</p> <p>PC23. demonstrate rescue techniques applied during fire hazard</p> <p>PC24. demonstrate good housekeeping in order to prevent fire hazards</p> <p>PC25. demonstrate the correct use of a fire extinguisher</p>
Emergencies, rescue and first-aid	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC26. demonstrate how to free a person from electrocution</p>

ELE/N1001 Use basic health and safety practices in electrical and electronics work

<p>procedures</p>	<p>PC27. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC28. demonstrate basic techniques of bandaging</p> <p>PC29. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC30. perform and organize loss minimization or rescue activity during an accident in real or simulated environments</p> <p>PC31. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases</p> <p>PC32. demonstrate the artificial respiration and the CPR Process</p> <p>PC33. participate in emergency procedures</p> <p>Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work</p> <p>PC34. complete a written accident/incident report or dictate a report to another person, and send report to person responsible</p> <p>Incident Report includes details of: name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified</p> <p>PC35. demonstrate correct method to move injured people and others during an emergency</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace</p> <p>KA2. names and location of documents that refer to health and safety in the workplace</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. meaning of “hazards” and “risks”</p> <p>KB2. health and safety hazards commonly present in the work environment and related precautions</p> <p>KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB4. possible causes of risk and accident</p> <p>Possible causes of risk and accident: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and</p>

ELE/N1001 Use basic health and safety practices in electrical and electronics work

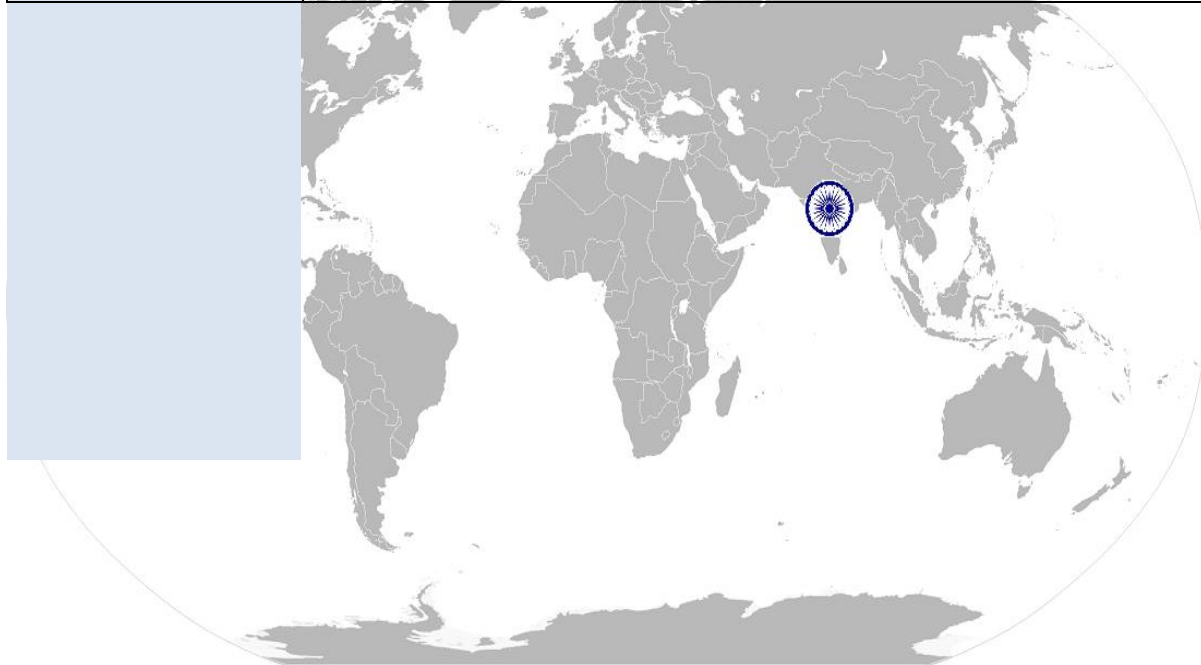
	<p>contagious illness); not taking safety precautions</p> <p>KB5. methods of accident prevention Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors</p> <p>KB6. safe working practices when working with tools and equipment</p> <p>KB7. safe working practices while working at various hazardous sites</p> <p>KB8. where to find all the general health and safety equipment in the workplace</p> <p>KB9. various dangers associated with the use of electrical equipment</p> <p>KB10. positive isolation of electrical equipment and system</p> <p>KB11. safe handling and disposal of hazardous wastes</p> <p>KB12. risks of electric shock while using electrical equipment</p> <p>KB13. various safety procedures and equipment used to work at heights, trenches and confined places</p> <p>KB14. safe methods used to repair building surfaces</p> <p>KB15. preventative and remedial actions to be taken in the case of exposure to toxic materials Exposure: ingested, contact with skin, inhaled Preventative action: ventilation, masks, protective clothing/equipment); Remedial action: immediate first aid, report to supervisor Toxic materials: solvents, flux, lead</p> <p>KB16. importance of using protective clothing/equipment and other insulated work gear while handling electrical system and equipment</p> <p>KB17. precautionary activities taken to prevent fire accident</p> <p>KB18. various causes of fire Causes of fires: heating of metal; spontaneous ignition; sparking; electrical heating; loose fires (smoking, welding, etc.); chemical fires; etc.</p> <p>KB19. techniques of using the different fire extinguishers</p> <p>KB20. different methods of extinguishing fire</p> <p>KB21. different materials used for extinguishing fire Materials: sand, water, foam, CO2, dry powder</p> <p>KB22. building fire safety regulations</p> <p>KB23. emergency rescue techniques applied during a fire hazard</p> <p>KB24. various types of safety signs and what they mean</p> <p>KB25. appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p> <p>KB26. content of written accident report</p>
--	--

ELE/N1001 Use basic health and safety practices in electrical and electronics work

	<p>KB27. potential injuries and ill health associated with incorrect manual handling</p> <p>KB28. safe lifting, carrying and transporting practices</p> <p>KB29. personal safety, health and dignity issues relating to the movement of a person by others</p> <p>KB30. potential impact to a person who is moved incorrectly</p>
Skills (S)	
A. Professional Skills	Writing Skills
	The user/individual on the job needs to know and understand how to:
	SA1. write basic accident report as per organization's standard procedures format in English and/or local language
	SA2. record/write defaults observed in work tools; health and safety issues in the work area; etc. as per required organization's policy
	SA3. write an accident/incident report in local language or English
	Reading Skills
The user/individual on the job needs to know and understand how to:	
SA4. read and comprehend basic content; read labels, charts, signages, etc.	
SA5. read and comprehend basic English to read manuals of operations	
SA6. read an accident/incident report in local language or English	
Oral Communication (Listening and Speaking skills)	
The user/individual on the job needs to know and understand how to:	
SA7. question coworkers appropriately in order to clarify instructions and other issues	
SA8. give clear instructions to coworkers, subordinates others	
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to:
	SB1. make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines, etc.
	Plan and Organize
	The user/individual on the job needs to know and understand how to:
	SB2. plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
Customer Centricity	
NA	
Problem Solving	
The user/individual on the job needs to know and understand how to:	
SB3. think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)	

ELE/N1001 Use basic health and safety practices in electrical and electronics work

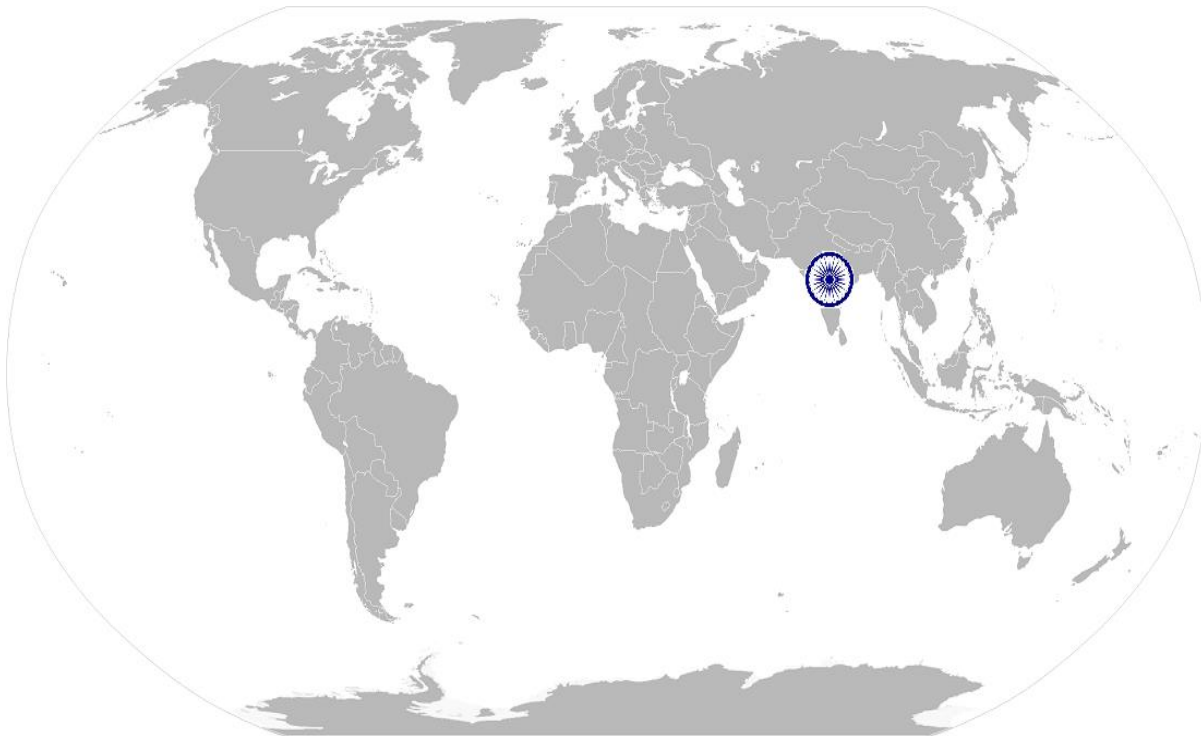
	<p>SB4. identify immediate or temporary solutions to resolve delays</p> <p>SB5. identify sources of support that can be availed of for problem solving for various kind of problems</p> <p>SB6. seek appropriate assistance from other sources to resolve problems</p> <p>SB7. report problems that you cannot resolve to appropriate authority</p>
	<p>Analytical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. identify cause and effect relations in their area of work</p> <p>SB9. use cause and effect relations to anticipate potential problems and their solution</p>
	<p>Critical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. apply logic and reasoning to identify the pros and cons of alternative solutions or approaches to problems at work</p>



ELE/N1001 Use basic health and safety practices in electrical and electronics work

NOS Version Control

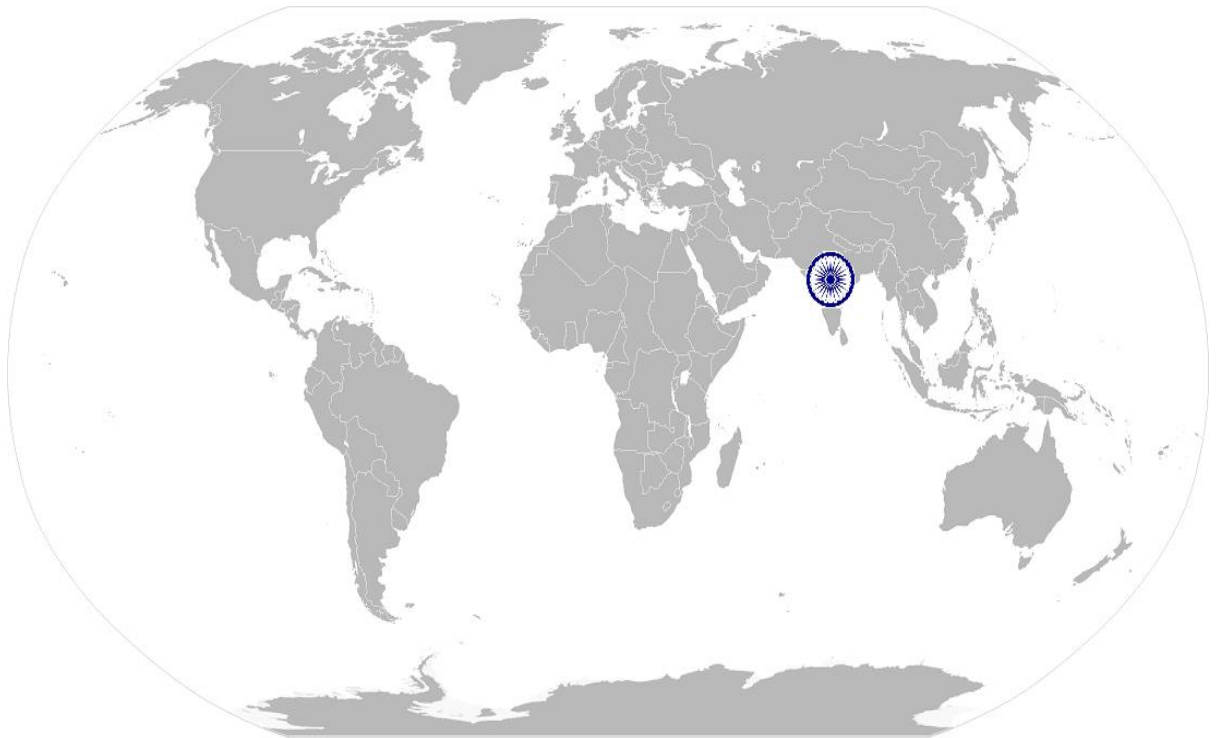
NOS Code	ELE/N1001		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	15/01/2016
Industry Sub-sector	Security Surveillance	Last reviewed on	05/05/2016
Occupation	After Sales Support	Next review date	05/05/2018



CSC/N1336

Work effectively in team

National Occupational Standard



Overview

This unit covers basic practices that improve effectiveness of working in a team in an organizational set-up.

CSC/N1336

Work effectively in team

National Occupational Standard	Unit Code	CSC/N1336
	Unit Title (Task)	Work effectively with others
	Description	This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Work effectively with others
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Work effectively with others	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. display appropriate communication etiquette while working Communication etiquette: do not use abusive language; use appropriate titles and terms of respect; do not eat or chew while talking (vice versa) etc.</p> <p>PC7. display active listening skills while interacting with others at work</p> <p>PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. demonstrate responsible and disciplined behaviors at the workplace Disciplined behaviors: e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc.</p> <p>PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict</p>
	Knowledge and Understanding (K)	
	A. Organizational Context (Knowledge of the company / organization and	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. reporting structure, inter-dependent functions, lines and procedures in the work area</p>

CSC/N1336

Work effectively in team

its processes)	<p>KA3. relevant people and their responsibilities within the work area</p> <p>KA4. escalation matrix and procedures for reporting work and employment related issues Occupational</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. various categories of people that one is required to communicate and co-ordinate within the organization</p> <p>KB2. importance of effective communication in the workplace</p> <p>KB3. importance of teamwork in organizational and individual success</p> <p>KB4. various components of effective communication</p> <p>KB5. key elements of active listening</p> <p>KB6. value and importance of active listening and assertive communication</p> <p>KB7. barriers to effective communication</p> <p>KB8. importance of tone and pitch in effective communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer</p> <p>KB11. importance of ethics for professional success</p> <p>KB12. importance of discipline for professional success</p> <p>KB13. what constitutes disciplined behavior for a working professional</p> <p>KB14. common reasons for interpersonal conflict</p> <p>KB15. importance of developing effective working relationships for professional success</p> <p>KB16. expressing and addressing grievances appropriately and effectively</p> <p>KB17. importance and ways of managing interpersonal conflict effectively</p>
Skills (S)	
A. Professional Skills	<p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. read basic terms and terminologies to accurately interpret work related documents, labels, supervisor instructions in the local language</p> <p>SA2. read and interpret accurate information from various relevant work instructions and records</p> <p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. write clear and legible notes to self, colleagues and seniors to pass messages, keep records, prepare to-do lists, take down instructions</p> <p>SA4. write basic numbers, quantities and work-related terminology for operational requirements in the local language</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p>

CSC/N1336

Work effectively in team

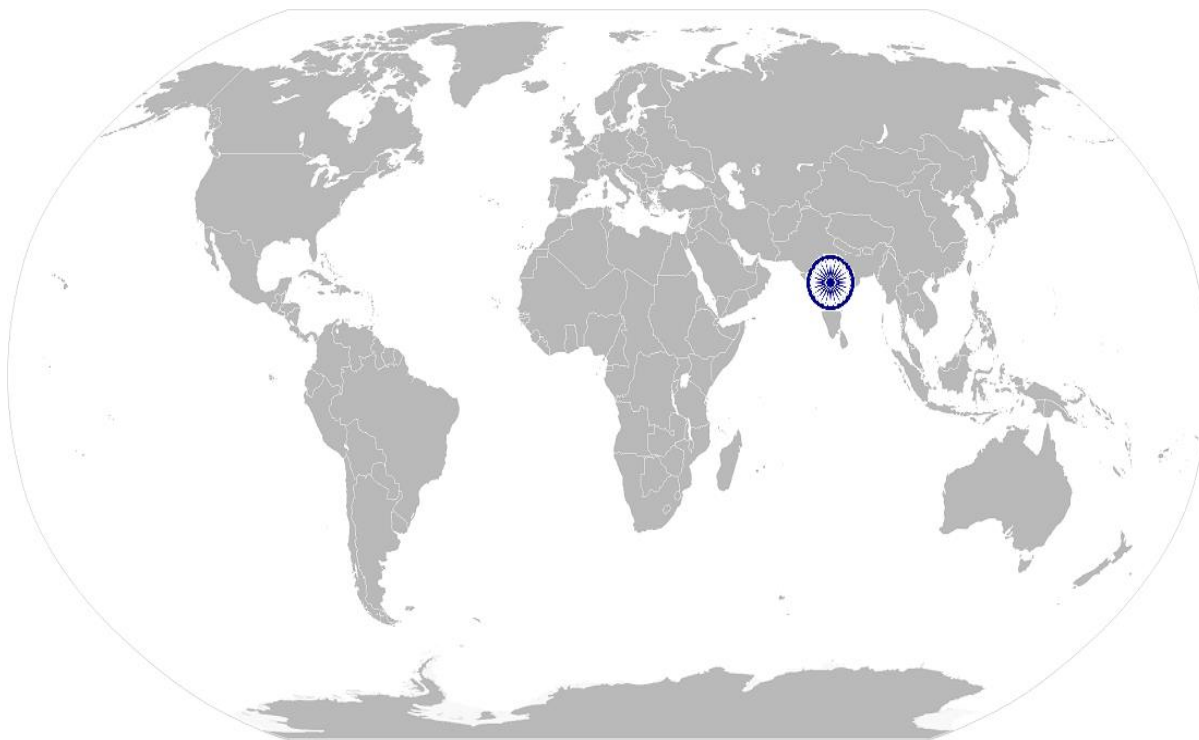
	<p>SA5. interact with the supervisor appropriately (correct protocol and manner of speaking) in order to understand the basic requirements of the product, production plans and other associated requirements</p> <p>SA6. give clear instructions to co-workers about the type of output required and answer queries</p> <p>SA7. display active listening skills while interacting with co-workers and other in the workplace</p>
B. Professional Skills	Decision Making
	NA
	Plan and Organize
	The user/individual on the job needs to know and understand how to:
	SB1. use appropriate planning to maintain a smooth relationship with fellow team members
	SB2. take steps within one's limits of authority to initiate modification in plan if the circumstances require it
	Customer Centricity
	The user/individual on the job needs to know and understand how to:
	SB3. check that work meets customer requirements SB4. deliver consistent and reliable service to internal and external customers
Problem Solving	
The user/individual on the job needs to know and understand how to:	
SB5. work with co-workers and supervisor to resolve any issues that threaten disruption, increase risk, cause delays or under-achievement of quality and targets as per the planned schedule	
Analytical Thinking	
NA	
Critical Thinking	
NA	

CSC/N1336

Work effectively in team

NOS Version Control

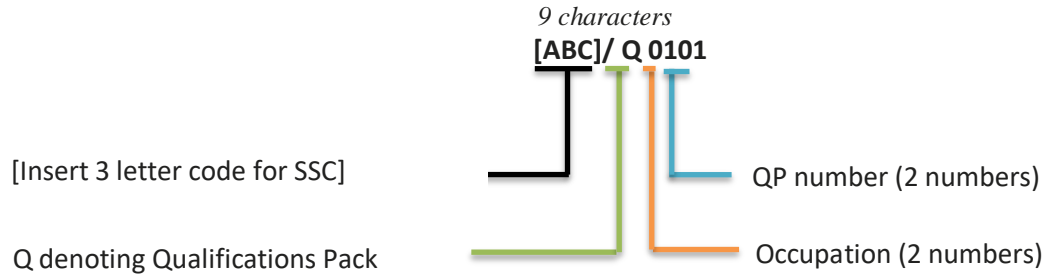
NOS Code	CSC/N1336		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	15/01/2016
Industry Sub-sector	Security Surveillance	Last reviewed on	05/05/2016
Occupation	After Sales Support	Next review date	05/05/2018



Annexure

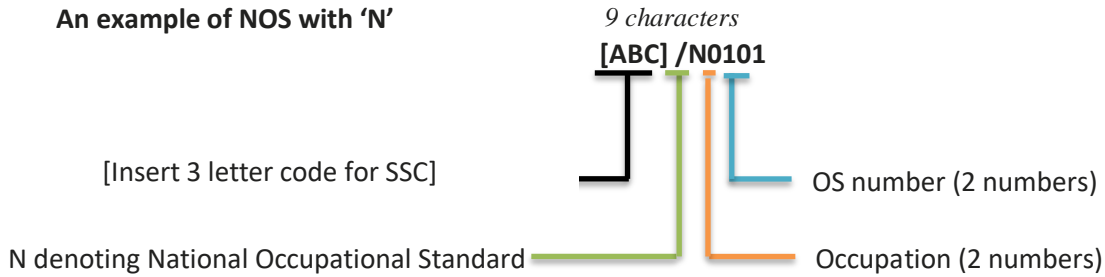
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



[Back to top...](#)

The following acronyms/ codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Consumer Electronics & IT Hardware	31 - 40, 76 - 80
Consumer Electronics & IT Hardware Security Surveillance	41 - 50
Semiconductor & Components	01 - 20
PCB Design and Manufacturing	21 - 30, 86 - 90
Electronics Manufacturing System	51 - 55
Solar and LED	56 - 60, 91 - 95
E-Mobility and Battery	66 - 70
Communication and Broadcasting	81 - 85
Industrial Automation	61 - 65, 71 - 75

Sequence	Description	Example
Three letters	Industry Name	ELE
Slash	/	/
Next letter	Whether QP or NOS	Q
Next two numbers	Occupation code	01
Next two numbers	OS number	01

Criteria For Assessment Of Trainees

Job Role: Security System Installation Technician

Qualification Pack ELE/Q4611

Sector Skill Council: Electronics Sector Skills Council of India

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.
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 this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS				Marks Allocation	
Total Marks: 400				Theory	Skills Practical
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of		
ELE/N4619 Install and commission electronic security system	PC1.introduce self and organization correctly, and state the purpose of visit	100	2	0	2
	PC2.interpret customer's security requirements as per needs communicated		2	1	1
	PC3.speak politely and respectfully with the customer at all times		2	0	2
	PC4.provide accurate information at all times in line with organization's quality standards and procedures		2	1	1

PC5.work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines	2	0	2
PC6.use personal protective equipment (PPE) suitable to installation and commissioning of security systems Personal Protection Equipment: safety glasses, head protection, ear muffs, safety footwear, knee pads, gloves, flash lights, apron, etc.	2	0	2
PC7.comply with safety electrical practices such as use of insulated tools & devices while handling electrical connections/systems	2	0	2
PC8.follow safe working practices while working at height, confined spaces, etc.	3	1	2
PC9.assess possible risks and hazards in electronics work and implement safety measures where necessary	2	0	2
PC10.obtain correct work order, blueprints electrical layouts and building plan, and other related instructions from responsible authority	3	2	1
PC11.obtain appropriate tools, equipment and materials required to perform work Tools & equipment: e.g. cable testing equipment, communication equipment, consumable items (batteries), crimp tools, fixing tools, hand tools, IDS tools, ladder, multi meter, power tools, soldering iron, templates, driller, etc.	2	0	2
PC12.ensure that selected tools and equipment are safely calibrated and in good working condition	2	0	2
PC13.confirm customer's security needs and estimate the required coverage area	2	0	2
PC14.identify appropriate location for optimum performance of security system within limitation imposed by customer and relevant regulations	3	1	2
PC15.ensure safe isolation of electrical circuits prior to commencing work	2	0	2
PC16.check that accessories are installed straight and square in the selected locations and within acceptable tolerance	2	0	2
PC17.identify required cable supports, containment systems and fixing devices needed during cabling as per work requirements	3	0	3

PC18.use approved procedures to route and secure cables, wires and cable containment as per work specifications Cable containment: e.g. conduit, ducting, ceiling voids, trays, surface mounted, catenaries, trunking (plastic & steel), etc.	3	1	2
PC19.test the cables and wires for any possible damages or faults in line with required quality standards	3	1	2
PC20.verify if the mounting surface is solid and capable of supporting the equipment weight	3	0	3
PC21.use approved technique to install equipment as per given work specification	3	1	2
PC22.adjust mounting position without causing any damage to equipment and in line with customer's requirements, operational effectiveness and required quality standards	4	1	3
PC23.follow approved procedures to secure fastening accessories to the mounting surface using correct fixing devices as per manufacturer's instructions	3	1	2
PC24.apply approved technique to terminate cables and conductors to accessories as per manufacturer's specification	3	1	2
PC25.verify that no loose wires are left unattended; connectors are properly fitted, and metallic components of cable are not exposed	3	0	3
PC26.check that power over load protection device is attached where necessary and the continuity of voltage is maintained	2	0	2
PC27.ensure that system is positioned correctly as required specification given in the manufacturer's guidelines	3	2	1
PC28.test and commission installed security system using appropriate tools and methods	2	1	1
PC29.follow appropriate commissioning procedures without causing any damages to the equipment, circuit, environment etc.	2	0	2
PC30.carry out appropriate system software installation and commissioning procedures applicable to security systems	2	0	2

	PC31.test the operational performance of the installed security system against defined quality parameters Testing equipment: multi meter, dB meter, data logging, earth loop impedance, other specialised test equipment, etc.		3	1	2
	PC32.establish correct transmission protocol for device output such as customer's IT system, communication system, the security system and the transmission equipment, etc.		3	0	3
	PC33.verify that the network configuration meets the customer's IT systems specification where applicable		2	0	2
	PC34.record the testing results accurately in the correct format as per standard operation requirements		4	1	3
	PC35.handover the completed security system with related information to customer as per organizational standards and regulatory requirements		3	1	2
	PC36.demonstrate the operation of the system to the customer in line with organizational standards		2	1	1
	PC37.file completion of installation report in designated document as per organizational policies and procedures		2	1	1
	PC38.repair the building surfaces to its original condition post installation in accordance with organizational quality standards and policies		2	1	1
	PC39.dispose hazardous and non-hazardous waste materials as per instructions given in the organization's and other regulatory bodies' environmental policies		2	1	1
	PC40.report any work related problems or issues to appropriate authority and seek possible solutions		2	0	2
	PC41.return all tools and devices to their designated storage area safely after the completion of work		1	0	1
		Total	100	22	78
ELE/N4622 Identify and repair faults in security system	PC1.introduce self and organization correctly, and state the purpose of visit	100	2	2	0

PC2.interpret customer's security requirements as per needs communicated	2	2	0
PC3.speak politely and respectfully with the customer at all times	2	2	0
PC4.provide accurate information at all times in line with organization's quality standards and procedures	2	2	0
PC5.work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines	5	2	3
PC6.use personal protective equipment (PPE) suitable to installation and commissioning of security systems	5	2	3
PC7.comply with safety electrical practices such as use of insulated tools & devices while handling electrical connections/systems	3	1	2
PC8.follow safe working practices while working at height, confined spaces, etc.	3	1	2
PC9.assess possible risks and hazards in the work environment and implement safety measures where necessary	3	1	2
PC10.obtain correct work order and other related instructions from responsible authority	4	2	2
PC11.identify tools, equipment, resources and materials required as per given job specifications	4	2	2
PC12.check that the selected tools and equipment are in working condition and compliant with safety and operational requirements	4	2	2
PC13.confirm circuits/machines are being checked and safely isolated in accordance with relevant regulatory requirements and organizational standards	4	2	2
PC14.inform any affected parties before disengaging networked system to avoid work disruption	4	2	2
PC15.comply with manufacturer's instructions on how to disengage/shut down the equipment and operating system	4	2	2
PC16.follow approved procedures to access identified equipment/system in line with manufacturer's instructions	3	1	2
PC17.disassemble the system as per manufacturer's instructions without causing damage or distortion to system	3	1	2
PC18.carry out preliminary fault checks using approved logical diagnostic and systematic fault finding methods of the networked security components	3	1	2
PC19.use approved procedures to test suspected source of fault using appropriate testing devices	3	1	2
PC20.use approved devices and techniques to rectify any identified common faults	4	0	4

	PC21.make adjustments or replace faulty components in line with required quality parameters and manufacturer's instructions		3	1	2
	PC22.report any unprecedented or complex fault conditions to responsible personnel as per organization's procedures		3	1	2
	PC23.reassemble equipment and system components as per manufacturer's instructions and test the operational efficiency as per given quality parameters		3	1	2
	PC24.return all used tools and materials safely to designated storage		2	0	2
	PC25.report any damages or malfunctions in tools and equipment to responsible personnel		4	2	2
	PC26.record the work fully and accurately in relevant document as per organization's standard procedures		3	1	2
	PC27.handover the rectified security system and related information to customer as per organization's standard and regulatory requirements		3	1	2
	PC28.demonstrate the operation of the system to the customer in line with required standards		4	1	3
	PC29.leave the work area in a clean and safe condition		2	0	2
	PC30.restore workplace to its original condition		3	0	3
	PC31.dispose toxic and non-toxic wastes appropriately in line with relevant environmental and safety policies		3	1	2
		Total	100	40	60
ELE/N1001 Use basic health and safety practices in electrical and electronics work	PC1.use protective clothing/equipment for specific tasks and work conditions	100	3	0	3
	PC2.state the name and location of people responsible for health and safety in the workplace		2	0	2
	PC3.state the names and location of documents that refer to health and safety in the workplace		2	0	2
	PC4.identify job-site hazardous work and state possible causes of risk or accident in the workplace		3	1	2
	PC5.follow safe methods while repairing building surfaces in compliant with related building regulations and customer's specifications		3	1	2
	PC6.risks of electric shock when working with electrical tools/equipment and system		3	1	2
	PC7.follow warning signs (danger, out of service, etc.) while accessing sensitive areas		3	1	2
	PC8.comply with safe working standards when dealing with potential hazards such as working at heights, lifting and handling heavy equipment		3	1	2

PC9.test any electrical equipment and system using insulated testing devices before touching them	3	0	3
PC10.ensure positive isolation of electrical equipment & system as per given standards	3	1	2
PC11.state methods for controlling safe access and egress from site	3	1	2
PC12.ensure safe working of access control equipment as per given specifications	2	0	2
PC13.carry out safe working practices while dealing with hazards to ensure the safety of self and others	3	0	3
PC14.state methods of accident prevention in the work environment of the job role	3	1	2
PC15.state location of general health and safety equipment in the workplace	3	1	2
PC16.inspect for faults, set up and safely use scaffolds, elevated platforms and ladders	3	0	3
PC17.lift, carry and transport heavy objects & tools safely using correct procedures from storage to workplace and vice versa	2	0	2
PC18.apply good housekeeping practices at all times	4	1	3
PC19.identify common hazard signs displayed in various areas	2	0	2
PC20.retrieve and/or point out documents that refer to health and safety in the workplace	2	0	2
PC21.inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly	2	0	2
PC22.use the various appropriate fire extinguishers on different types of fires correctly	3	0	3
PC23.demonstrate rescue techniques applied during fire hazard	4	1	3
PC24.demonstrate good housekeeping in order to prevent fire hazards	3	1	2
PC25.demonstrate the correct use of a fire extinguisher	3	1	2
PC26.demonstrate how to free a person from electrocution	3	1	2
PC27.administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	3	0	3
PC28.demonstrate basic techniques of bandaging	3	1	2
PC29.respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments	3	1	2
PC30.perform and organize loss minimization or rescue activity during an accident in real or simulated environments	3	1	2
PC31.administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases	3	1	2

	PC32.demonstrate the artificial respiration and the CPR Process		3	1	2
	PC33.participate in emergency procedures		3	1	2
	PC34.complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC35.demonstrate correct method to move injured people and others during an emergency		3	1	2
		Total	100	22	78
CSC/N1336 Work effectively in team	PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	3	7
	PC2.accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3.give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4.display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible		10	3	7
	PC5.consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
	PC6.display appropriate communication etiquette while working		10	3	7
	PC7.display active listening skills while interacting with others at work		10	3	7
	PC8.use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	3	7
	PC9.demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10.escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7
		Total	100	30	70