

**SUB-MAJOR GROUP 34 ELECTROTECHNOLOGY AND TELECOMMUNICATIONS  
TRADES WORKERS**

ELECTROTECHNOLOGY AND TELECOMMUNICATIONS TRADES WORKERS assemble, install, test and repair electrical appliances, networks and circuits, electronic systems and equipment, lifts, refrigeration and airconditioning equipment, electrical distribution networks, and telecommunications equipment.

*Indicative Skill Level:*

Most occupations in this sub-major group have a level of skill commensurate with the qualifications and experience outlined below.

In Australia:

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

In New Zealand:

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

*Tasks Include:*

- examining blueprints, wiring diagrams and specifications to determine location and connections for installations
- testing for, locating and repairing electrical malfunctions
- cutting and connecting wiring and cables
- assembling, fabricating and installing electrical and electronic systems, networks, components and appliances
- installing, testing and adjusting electrical and mechanical parts of lifts
- installing and maintaining refrigeration and airconditioning equipment, and connecting electrical systems and appliances to power supplies
- installing, maintaining and repairing telecommunications and data transmission equipment
- transmitting and receiving radio messages

Occupations in this sub-major group are classified into the following minor groups:

- 341 Electricians
- 342 Electronics and Telecommunications Trades Workers

### MINOR GROUP 341 ELECTRICIANS

ELECTRICIANS design, assemble, install, test, commission, diagnose, maintain and repair electrical networks, systems, circuits, equipment, components, appliances and facilities for industrial, commercial and domestic purposes, and service and repair lifts, escalators and related equipment.

Automotive Electricians are excluded from this minor group. Automotive Electricians are included in Minor Group 321 Automotive Electricians and Mechanics.

#### *Indicative Skill Level:*

Most occupations in this minor group have a level of skill commensurate with the qualifications and experience outlined below.

#### *In Australia:*

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

#### *In New Zealand:*

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

#### *Tasks Include:*

- examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation
- measuring and laying out installation reference points
- selecting, cutting and connecting wire and cable to terminals and connectors
- using electrical and electronic test instruments to trace and diagnose faults
- repairing or replacing faulty wiring and defective parts
- positioning and installing electrical switchboards
- connecting electrical systems to power supply
- testing continuity of circuit
- installing, testing and adjusting electric and mechanical parts of lifts

Occupations in this minor group are classified into the following unit group:

3411 Electricians

### UNIT GROUP 3411 ELECTRICIANS

ELECTRICIANS design, assemble, install, test, commission, diagnose, maintain and repair electrical networks, systems, circuits, equipment, components, appliances and facilities for industrial, commercial and domestic purposes, and service and repair lifts, escalators and related equipment.

Automotive Electricians are excluded from this unit group. Automotive Electricians are included in Unit Group 3211 Automotive Electricians.

#### *Indicative Skill Level:*

Most occupations in this unit group have a level of skill commensurate with the qualifications and experience outlined below.

#### *In Australia:*

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

#### *In New Zealand:*

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

Registration or licensing is required.

#### *Tasks Include:*

- examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation
- measuring and laying out installation reference points
- selecting, cutting and connecting wire and cable to terminals and connectors
- using electrical and electronic test instruments to trace and diagnose faults
- repairing and replacing faulty wiring and defective parts
- positioning and installing electrical switchboards
- connecting electrical systems to power supply
- testing continuity of circuit
- installing, testing and adjusting electric and mechanical parts of lifts

#### *Occupations:*

- 341111 Electrician (General)
- 341112 Electrician (Special Class)
- 341113 Lift Mechanic

## MAJOR GROUP 3 *continued*

### UNIT GROUP 3411 ELECTRICIANS *continued*

#### 341111 ELECTRICIAN (GENERAL)

Alternative Title:

Electrical Fitter

Installs, tests, connects, commissions, maintains and modifies electrical equipment, wiring and control systems. Registration or licensing is required.

Skill Level: 3

Specialisations:

Armature Winder

Electrical Contractor

Heavy Coil Winder

Railway Signal Electrician

#### 341112 ELECTRICIAN (SPECIAL CLASS)

Services and repairs intricate and complex electrical and electronic circuitry. Registration or licensing is required.

Skill Level: 3

#### 341113 LIFT MECHANIC

Alternative Title:

Lift Electrician

Designs, installs, maintains, services and repairs electric and hydraulic passenger and freight lifts, escalators, moving walkways and other lift equipment. Registration or licensing is required.

Skill Level: 3

MINOR GROUP 342 ELECTRONICS AND TELECOMMUNICATIONS TRADES WORKERS

ELECTRONICS AND TELECOMMUNICATIONS TRADES WORKERS assemble, install, test and repair electronic systems and equipment, electrical distribution and telecommunications networks, airconditioning and refrigeration equipment, business machines and telecommunications equipment, and transmit and receive radio messages.

*Indicative Skill Level:*

Most occupations in this minor group have a level of skill commensurate with the qualifications and experience outlined below.

*In Australia:*

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

*In New Zealand:*

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

*Tasks Include:*

- examining blueprints, wiring diagrams and specifications to determine job requirements
- testing for, locating, diagnosing and repairing electrical malfunctions
- cutting and connecting wiring and cables
- installing and maintaining airconditioning and refrigeration equipment, and connecting electrical systems and appliances to power supplies
- installing conductors, aerial and underground cables, and equipment associated with electrical supply
- installing, modifying, maintaining, adjusting and repairing business machines, radio and television receivers, audio and visual reproduction equipment, and electronic instruments and control systems
- transmitting and receiving radio messages
- installing, maintaining and repairing telecommunications and voice and data transmission equipment and appliances

Occupations in this minor group are classified into the following unit groups:

- 3421 Airconditioning and Refrigeration Mechanics
- 3422 Electrical Distribution Trades Workers
- 3423 Electronics Trades Workers
- 3424 Telecommunications Trades Workers

UNIT GROUP 3421 AIRCONDITIONING AND REFRIGERATION MECHANICS

AIRCONDITIONING AND REFRIGERATION MECHANICS assemble, install, maintain and repair industrial, commercial and domestic airconditioning and refrigeration systems and equipment.

*Indicative Skill Level:*

Most occupations in this unit group have a level of skill commensurate with the qualifications and experience outlined below.

In Australia:

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

In New Zealand:

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

Registration or licensing may be required.

*Tasks Include:*

- establishing job requirements from drawings and specifications, and laying out installation reference points
- drilling holes, installing mounting brackets and cutting, bending and threading piping
- installing and repairing components such as compressors, motors, condensers, evaporators, switches and gauges, and copper lines for steam, gas, refrigerant, compressed air, oil and chilled water
- bolting, soldering, riveting, welding and brazing pipes to connect equipment, and checking alignment and accuracy of fit
- filling systems with gas or fluid to check for leaks
- test-operating refrigeration systems, checking mechanisms and making adjustments
- removing test gas and fluid using vacuum pumps, and filling with refrigerant
- checking and overhauling refrigeration systems, diagnosing faults and repairing and replacing defective components
- adjusting system controls and mechanisms and reassembling systems
- recording causes of malfunctioning and action taken

Occupation:

342111 Airconditioning and Refrigeration Mechanic

**342111 AIRCONDITIONING AND REFRIGERATION MECHANIC**

Assembles, installs, maintains and repairs industrial, commercial and domestic airconditioning and refrigeration systems and equipment. Registration or licensing may be required.

Skill Level: 3

**UNIT GROUP 3422 ELECTRICAL DISTRIBUTION TRADES WORKERS**

ELECTRICAL DISTRIBUTION TRADES WORKERS prepare, install, repair, maintain and patrol electric power distribution networks.

*Indicative Skill Level:*

Most occupations in this unit group have a level of skill commensurate with the qualifications and experience outlined below.

*In Australia:*

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

*In New Zealand:*

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

Registration or licensing may be required.

*Tasks Include:*

- installing conductors and aerial equipment, and underground cables and equipment
- installing and maintaining equipment associated with electrical supply such as transformers
- attending to electrical breakdown and emergencies
- maintaining poles and associated hardware, and continuity of electrical supply and street lighting
- conducting routine maintenance on the aerial and underground electricity supply network
- conducting low-voltage switching operations
- fitting pole hardware and crossarms
- preparing low- and high-voltage cable joints and cable terminations while connecting and installing electrical equipment and overhead lines
- using heavy plant equipment such as elevated work platforms and portable equipment such as hydraulic drills
- may undertake substation installation and maintenance, and specialised testing and revenue meter installation

*Occupations:*

342211 Electrical Linesworker (Aus) / Electrical Line Mechanic (NZ)

342212 Technical Cable Joiner

**342211 ELECTRICAL LINESWORKER (AUS) / ELECTRICAL LINE MECHANIC (NZ)**

Installs, maintains, repairs and patrols electrical sub-transmission and distribution systems. Registration or licensing may be required.

Skill Level: 3

*Specialisations:*

Electrical Linesworker (Distribution) (Aus) / Electrical Line Mechanic (Distribution) (NZ)

Electrical Linesworker (Transmission) (Aus) / Electrical Line Mechanic (Transmission) (NZ)

Railway Traction Line Worker

## MAJOR GROUP 3 *continued*

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### UNIT GROUP 3422 ELECTRICAL DISTRIBUTION TRADES WORKERS *continued*

#### 342212 TECHNICAL CABLE JOINTER

Joins insulated electric power cables installed in underground conduits and trenches, and prepares cable terminations for connection to electrical equipment and overhead lines. Registration or licensing may be required.

Skill Level: 3



UNIT GROUP 3423 ELECTRONICS TRADES WORKERS

ELECTRONICS TRADES WORKERS maintain, adjust and repair electronic equipment such as commercial and office machines, video and audio equipment, and electronic instruments and control systems, and transmit and receive radio messages.

*Indicative Skill Level:*

Most occupations in this unit group have a level of skill commensurate with the qualifications and experience outlined below.

*In Australia:*

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

*In New Zealand:*

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.

Registration or licensing may be required.

*Tasks Include:*

- examining and testing machines, equipment, instruments and control systems to diagnose faults
- adjusting, repairing, and replacing worn and defective parts and wiring, and maintaining machines, equipment and instruments
- reassembling, test operating and adjusting equipment
- advising users of correct operating procedures to prevent malfunctions
- receiving messages by interpreting code and converting to plain language, and writing and typing messages for transmission
- monitoring radio traffic, and transmitting and receiving voice messages
- installing electronic instruments and control systems
- applying knowledge of electrical, electronic, mechanical, hydraulic and pneumatic principles in commissioning and maintaining control systems

*Occupations:*

- 342311 Business Machine Mechanic
- 342312 Communications Operator
- 342313 Electronic Equipment Trades Worker
- 342314 Electronic Instrument Trades Worker (General)
- 342315 Electronic Instrument Trades Worker (Special Class)

**342311 BUSINESS MACHINE MECHANIC**

Maintains, adjusts and repairs computers, photocopiers, fax machines, cash registers and other electronic commercial and office machines.

Skill Level: 3

## MAJOR GROUP 3 *continued*

### UNIT GROUP 3423 ELECTRONICS TRADES WORKERS *continued*

#### 342312 COMMUNICATIONS OPERATOR

Transmits and receives radio messages by use of morse code, voice and radio teletype.

Skill Level: 3

Specialisations:

Communication Information Systems Sailor (Navy)

Communications and Information Systems Controller (Air Force)

Operator Specialist Communications (Army)

#### 342313 ELECTRONIC EQUIPMENT TRADES WORKER

Maintains, adjusts and repairs radio and television receivers, and related audio and visual reproduction equipment such as video cameras, digital versatile disc players, compact disc players and video cassette recorders.

Skill Level: 3

#### 342314 ELECTRONIC INSTRUMENT TRADES WORKER (GENERAL)

Alternative Title:

Instrument and Control Service Person

Installs, modifies, maintains and repairs electronic instruments and control systems. Registration or licensing may be required.

Skill Level: 3

Specialisations:

Communication Electronic Technician (Air Force)

Electronic Technician (Navy)

#### 342315 ELECTRONIC INSTRUMENT TRADES WORKER (SPECIAL CLASS)

Alternative Title:

Industrial Measurement and Control Technician

Installs, modifies, maintains and repairs complex electronic instruments and control systems which involve a combination of electrical, electronic, mechanical, hydraulic and pneumatic principles. Registration or licensing may be required.

Skill Level: 3

UNIT GROUP 3424 TELECOMMUNICATIONS TRADES WORKERS

TELECOMMUNICATIONS TRADES WORKERS install, maintain and repair data transmission equipment, aerial lines, conduits, cables, radio antennae and telecommunications equipment and appliances.

*Indicative Skill Level:*

Most occupations in this unit group have a level of skill commensurate with the qualifications and experience outlined below.

In Australia:

AQF Certificate III including at least two years of on-the-job training, or AQF Certificate IV (ANZSCO Skill Level 3)

In New Zealand:

NZ Register Level 4 qualification (ANZSCO Skill Level 3)

At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or relevant vendor certification may be required in addition to the formal qualification.

*Tasks Include:*

- examining drawings, specifications and work areas to determine positioning and connections for equipment to be installed
- locating faults in telecommunications equipment using instruments such as ohmmeters, voltmeters, ammeters and transmission measuring equipment
- attaching wires and cables to appliances
- adjusting, replacing and repairing faulty items, and testing equipment using electronic instruments
- installing cabling for telephone, radio, pay TV and computer transmission
- joining cables and sealing sheaths with lead and thermoplastic
- erecting, testing and maintaining aerial and underground wires and cables, and radio and mobile phone antennae
- installing telecommunications equipment and appliances such as telephones, switchboards and data transmission equipment

Occupations:

342411 Cabler (Data and Telecommunications)

342412 Telecommunications Cable Joiner

342413 Telecommunications Linesworker (Aus) / Telecommunications Line Mechanic (NZ)

342414 Telecommunications Technician

**342411 CABLER (DATA AND TELECOMMUNICATIONS)**

Installs internal telecommunications and data cabling, equipment and peripherals for computer networks, telephony, cable television and monitored security and fire alarms.

Skill Level: 3

## MAJOR GROUP 3 *continued*

### UNIT GROUP 3424 TELECOMMUNICATIONS TRADES WORKERS *continued*

#### 342412 TELECOMMUNICATIONS CABLE JOINTER

Joints, terminates and repairs copper and fibre optic telecommunications cables installed in underground pipes, trenches and overhead systems.

Skill Level: 3

Specialisations:

Fibre Optic Cable Splicer

Fibre Optics Joiner

#### 342413 TELECOMMUNICATIONS LINESWORKER (AUS) / TELECOMMUNICATIONS LINE MECHANIC (NZ)

Installs, maintains and repairs external telecommunication equipment such as aerial lines, conduits and underground cables, radio and mobile phone antennae, and limited items of terminal equipment.

Skill Level: 3

Specialisation:

Operator Bearer Systems (Army)

#### 342414 TELECOMMUNICATIONS TECHNICIAN

Alternative Title:

Communications Technician

Installs, maintains and repairs telecommunications equipment and appliances, such as telephones, mobile telephones, switchboards and data transmission equipment, in homes, businesses, telephone exchanges and other network sites.

Skill Level: 3

Specialisation:

Technician Telecommunication Systems (Army)