Australian Government

Assessment Requirements for UEEEL0056 Place and connect electrical coils

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including using risk control measures
- applying sustainable energy principles and practices
- placing and connecting electrical coils, including:
  - adhering to electrical coil quality workplace procedures
  - completing workplace report/forms accurately
  - connecting coils correctly
  - cutting insulation and placing insulation and coils without damage
  - dealing with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
  - following winding job specifications and instructions
  - preparing to place and connect coils
  - selecting correct coils and insulation
  - using tools safely in accordance with workplace procedures.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- winding wires, including:
  - dangers relating to handling
  - measuring wires using a gauge and micrometer
  - methods of application, including brush, spray, dip and trickle
  - types of varnish, including air drying, baking and epoxy
  - types of winding wires
  - winding wire varnishes, temperature ratings and removal methods

- applications of winding wires, including:
  - armature windings
  - induction coils
  - solenoid
  - stator windings
  - transformer windings
- methods of winding wire connection, including:
  - conductor preparation
  - fusing, including advantages, join preparation and fusing process
  - hard soldering - silver soldering, including advantages, types of silver soldering, wire and flux, operation and safe working procedures with the oxy acetylene welding torch, join preparation, silver soldering process and inspection
  - soft soldering, including types of solder, soldering irons and tips, fluxes (purpose, types and dangers), soldering process and inspection
- insulation methods
- techniques in insulating coils for electrical static and rotating machines, including:
  - methods of insulating coils
  - precautions
  - types of insulation used
- coil types, including:
  - distributed D or mush shape coil group (three phase)
  - distributed concentric coil group (single phase/three phase)
  - distributed diamond shape coil group wound as individual coils (three phase)
  - distributed round end (three phase)
  - universal motor field coils (single phase)
- techniques in placing coils for electrical static and rotating machines, including:
  - coil finishing
  - connection for correct polarity
  - electrical testing
  - insertion into slots
  - manufacture for universal field coils
  - record data
  - taping (where applicable)
- electrical inspecting and testing regulations, industry standards and workplace procedures
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to placing and connecting electrical coils
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6