



Australian Government

Assessment Requirements for UEEAS0008 Fabricate and assemble bus bars

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 problem-solving techniques when determining the nature of a fault
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - using risk control measures
 - checking tools, equipment and testing devices for correct operation and safety
- applying sustainable energy principles and practices
- checking quality and installation of assembled bus bars
- communicating effectively with relevant stakeholders
- completing workplace documentation
- dealing with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- following work instructions
- interpreting electrical layout and wiring diagrams
- inspecting and testing installed bus bars
- making up and assembling electrical bus bars, including:
 - following assembly instructions
 - forming and making up correctly
 - terminating bus bars correctly
 - adhering to quality procedures
 - checking circuits are isolated
 - making interconnections
 - considering designs
 - connecting bus bars correctly
- performing regular quality checks.

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:

- chemical and metallurgical properties of bus bars, including:
 - copper (Cu)
 - aluminium (Al)
 - copper clad aluminium
 - hard drawn copper
 - annealing
 - types of high conductivity copper
- current-carrying capacity, including:
 - standard cross-sections of bar
 - current ratings
 - temperature rise
- design considerations, including:
 - electrical and thermal resistance
 - mechanical strength in tension, compression and shear
 - resistance to fatigue failure
 - electrical resistance of surface films
 - ease of fabrication
 - resistance to corrosion
 - first cost and high eventual recovery value
 - choice of bus bar materials
 - creep properties
 - fatigue properties
 - self-extinguishing arcs in Cu and Al
 - insulated bus bar
 - provision for bus bar expansion
- effects of short circuit, including:
 - temperature rise
 - electromagnetic stresses
 - cleats and structural supports
- electrical bus bar types, including:
 - main bus bars
 - intermediate bus bars
 - cell bus bars
 - droppers
 - flexible joints

- hanger bars
- short circuit frames
- jointing types and techniques, including:
 - clamped joints
 - bolted
 - riveted
 - welded
 - soldered or brazed
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- shaping and bending equipment and techniques, including:
 - hand and power tools
 - hydraulic shears
 - hydraulic punches
 - hydraulic notcher
 - machines allowing multiple operations
- stand-off insulators, including:
 - form
 - function
 - physical and electrical properties/characteristics
 - selection.

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 workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in 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, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications,

regulations, 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>