



Australian Government

Assessment Requirements for CPCUS4003 Maximise energy efficiency through applied trade skills

Release: 2

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Modification History

- Release 2 Updated reference to general construction induction training program.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and equivalent to CPCSUS4003A Maximise energy efficiency through applied trade skills. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by undertaking and completing three different activities to maximise energy efficiency of the process or finished product. The three activities may be related to or on the same construction project.

In doing this, the candidate must:

- use principles or techniques that are designed to maximise the energy efficiency characteristics of the building or project
- apply their trade skills to energy efficient practices during the project.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- general construction terminology
- building science principles:
 - building envelope
 - effective ventilation
 - heat, air and moisture flows:
 - conduction
 - convection
 - radiation
 - interaction between occupants, building components and systems, and the environment both indoors and out
 - moisture management and condensation
- energy efficient techniques:

- advanced framing or optimal value engineering for energy efficient framing
- appropriate selection and installation of insulation without compressing it
- conserving energy by effectively sealing the building envelope to minimise air leakage (exfiltration and infiltration) in the building envelope, shell or enclosure
- effectively installing windows and flashing without breaking the building envelope
- effectively selecting and installing thermal insulation
- minimising embodied energy
- sealing, insulating and minimising duct leakage
- sealing leaky joints
- selecting recycled materials to minimise production energy
- sourcing materials or products locally to minimise transport energy
- energy efficiency expectations:
 - acoustic and thermal insulation between zones and rooms
 - achieving relevant energy efficient requirements in the National Construction Code (NCC), and other relevant codes and regulations
 - achieving or maintaining a home energy rating, commercial building rating, or equivalent energy rating
 - effectively selecting and using thermal mass
 - energy conservation
 - minimising infiltration
 - minimising the heat loss and maximising the heat gain based on the requirements of the building reflective of the climatic zones
 - minimising thermal bridging
 - passive solar design approach
 - reducing or minimising energy costs and consumption to heat and cool the building
 - thermal resistance
 - ventilation, heat and energy recovery
 - zero energy homes
- workplace safety:
 - hierarchy of control
 - hazardous manual tasks
- processes, procedures and techniques for:
 - calculating material for the task
- organisation's project quality requirements
- environmental requirements and sustainability principles
- properties, characteristics and limitations of approved materials, products and components:
 - structural insulated panels
 - mud bricks
 - solar panels and battery storage
 - glazing

- straw bale building products
- functional and operational features of tools and equipment.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- government building and environmental legislation
- relevant industry codes and standards
- current project plans, specifications and manufacturer's product information
- organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- business equipment, technology, applications and software to research product and material information and calculate energy gains.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>