



Australian Government

**Assessment Requirements for CPCUS4002
Use building science principles to construct
energy efficient buildings**

Release: 1

Assessment Requirements for CPCUS4002 Use building science principles to construct energy efficient buildings

Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCUS4002A Use building science principles to construct energy efficient buildings. 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 using building science principles in the development of recommendations for the use of energy efficient materials, products and construction methods for one residential construction project and one commercial construction project.

In doing this, the candidate must:

- incorporate building science principles for energy efficient materials and products used in the building envelope
- research and report on a range of energy efficient design and construction methods with a specific focus on:
 - energy efficient heating, cooling and ventilation
 - energy efficient construction methods and systems
 - effects of condensation, dampness, weatherproofing and waterproofing when preventative measures are incorrectly installed or ignored during construction.

Knowledge Evidence

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

- the National Construction Code (NCC)
- processes for the evaluation of energy efficiencies in buildings:
 - local and international research into building science methods
 - systems theory and analysis
 - manufacturer websites and technical data for energy efficient construction materials and systems
- theories and principles of efficient energy use of building and construction processes
- the impact on occupant's health and the adverse effect on material integrity and structural components by failing to meet design principles

- types, application and limitations of different construction materials when selecting construction materials and products for energy efficient buildings
- the role of embodied energy when selecting construction materials and products for energy efficient buildings
- general and environmental construction terminology
- effective energy efficient treatment of the building envelope:
 - gaps around ceiling downlights
 - gaps around insulating material
 - gaps under and around doors
 - openings for floor or ceiling ducts used to transmit heating or cooling
 - wall, floor or ceiling cracks
 - window seals
 - thermal mass
- extreme weather conditions impacting on a building:
 - cyclonic activity
 - extreme heat
 - risk of fire
 - heavy rain and flooding
 - storm weather
- work place safety requirements:
 - working with insulation
- digital tools and devices to communicate and collaborate effectively with others
- a range of digitally-based technology and applications for researching information.

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:

- relevant government building and construction legislation
- current building and construction codes and Australian Standards
- the NCC
- construction drawings and specifications, organisational policies, procedures and other quality documentation to undertake the performance criteria and assessment requirements
- digital technology to research information and devices, applications and software to develop and save documents electronically.

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>