Australian Government

CPCSUS4002 Use building science principles to construct energy efficient buildings

Release: 1

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Modification History

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

Supersedes and equivalent to CPCSUS4002A Use building science principles to construct energy efficient buildings. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to incorporate building science principles into the construction of energy efficient buildings. It includes the ability to research, use constructive thinking and problem-solving processes to identify appropriate sustainable solutions.

This unit of competency applies to those who apply building science principles to construction of energy efficient residential and commercial buildings.

This unit of competency is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable energy efficient building problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.

1	Determine the building envelope expectations.	1.1 Identify type of use and energy efficiency expectations of the building.
		1.2 Identify risks associated with occupants' indoor activities and health and safety considerations.
		1.3 Determine environmental and climatic conditions that impact the resilience of building materials.
		1.4 Identify construction methods that factor in durability of materials.
		1.5 Consult relevant legislation, standards, regulations and codes to identify minimum energy efficient standards to be met.
		1.6 Consult relevant domestic and international codes, standards and examples of best practice that meet or exceed current energy efficient standards.
2	Assess energy efficiency construction.	2.1 Research building science principles supporting energy efficiency.
		2.2 Review embodied energy of the specified products or materials to evaluate the energy efficiency.
		2.3 Research heating, ventilation and air conditioning (HVAC) systems to identify levels of energy efficiency, ventilation and indoor air quality.
		2.4 Review mechanical ventilation systems and equipment to aid air flows for appropriateness and operational costs.
		2.5 Research and identify durability and appropriateness of moisture and vapour barriers to gain high levels of energy efficiency.
3	Decide on method of construction.	3.1 Identify site location and building position to maximise energy efficiency relating to environmental factors, climatic conditions and use of building.
		3.2 Identify and assess energy efficiency of thermal energy, heating and cooling, air and moisture flows throughout the building.

3.3 Develop strategies to minimising unwanted air leakages.

3.4 Evaluate and select mechanical ventilation systems and equipment for appropriateness to the site and operational costs.

3.5 Evaluate and select materials for interior and exterior barriers for energy efficiency, durability and appropriateness for building site climate.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
  - use digital tools and devices to communicate and collaborate effectively with others
  - use technology and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS4002A Use building science principles to construct energy efficient buildings.

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