



Australian Government

CPCSUS5003 Manage energy efficient building methods and strategies

Release: 2

CPCSUS5003 Manage energy efficient building methods and strategies

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 CPCSUS5003A Manage energy efficient building methods and strategies. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to ensure that energy efficient building methods and strategies on new or existing building projects, designed to satisfy energy efficient ratings and requirements, are supported by employees and contractors. It includes conducting appropriate performance testing of the construction to determine adherence to energy efficiency methodologies and techniques.

The unit of competency includes ensuring that work undertaken to construct an energy efficient building, or to retrofit an existing building for improved energy efficiency, is performed as designed and reflects energy efficient specifications.

This unit of competency applies to builders and site managers overseeing the construction of buildings designed to meet energy efficient ratings or improve the energy efficiency characteristics of a residential or commercial building.

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 *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

No licensing, legislative 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.

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| <p>1 Plan and prepare to construct an energy efficient building.</p> | <p>1.1 Review plans, drawings and specifications to identify energy efficient requirements of finished building or works.</p> <p>1.2 Determine the building class and type.</p> <p>1.3 Consult relevant stakeholders to identify the purpose and use of the building and the energy efficiency expectations of its owners or occupiers.</p> <p>1.4 Source, select and cost construction materials and products to conform to energy efficiency expectations of the building or works.</p> <p>1.5 Schedule works to be undertaken to support the energy efficient building strategy.</p> <p>1.6 Resource the project with appropriately skilled tradespeople with energy efficiency competency.</p> <p>1.7 Develop strategies for the disposal, recovery or reuse of waste materials for the project.</p> <p>1.8 Communicate budget, timelines and impact of energy efficiency of the project to the owner, occupier and other stakeholders.</p> |
| <p>2 Monitor project energy efficiency.</p> | <p>2.1 Evaluate and quantify the impact on energy efficiency against the expectations to assist in decision-making processes of construction methods, materials selection and alteration of works.</p> <p>2.2 Assess the capacity to maximise energy efficiency by improving building envelope sealing prior to other work commencing.</p> <p>2.3 Brief trades and other workers on the building project regarding expected energy efficiencies, quality of work, methods and techniques to be used.</p> <p>2.4 Monitor the project and maintain communication with subsequent trades to ensure benefits of energy efficient</p> |

requirements and techniques are not lost or diminished.

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| 3 | Evaluate and communicate energy efficiency outcomes. | 3.1 | Assess works undertaken for adherence to energy efficiency processes. |
| | | 3.2 | Conduct and record handheld thermal imaging assessment of building or works to determine presence of unwanted heat and air leakages and address findings where necessary. |
| | | 3.3 | Conduct duct testing to identify the location of leakages and implement remedial work to address findings. |
| | | 3.4 | Seek external expert verification of star ratings for building energy efficiency. |

Foundation Skills

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

- numeracy skills to:
 - use statistical data to measure and compare energy efficiency
- oral communication skills to:
 - use appropriate technical language to convey a design and construction brief to a work group, client and stakeholders
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS5003A Manage energy efficient building methods and strategies.

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>

Assessment Requirements for CPCSUS5003 Manage energy efficient building methods and strategies

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by managing energy efficient building methods and strategies for two building and construction projects:

- one residential - Class 1 or 10 to a maximum of two storeys
- one commercial - Class 2 to 9, Type B or C.

In doing this, the candidate must:

- prepare costing of energy efficient materials, products and labour
- prepare a project schedule with techniques and strategies, products and time lines to communicate to stakeholders and on-site tradespeople
- determine processes for minimising, reusing or reclaiming waste.

Knowledge Evidence

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

- building science principles and their application for improved energy efficiency
- environmental and sustainability legislation, requirements, policies, standards and guidelines
- Environment Protection and Biodiversity Conservation Act
- government building and environmental requirements, codes and standards
- the National Construction Code (NCC)
- organisational policies and procedures, quality systems and best practice approaches
- properties, characteristics and limitations of approved building materials and component:
 - structural insulated panels
 - glazing
 - thermal mass

- impacts on materials and products used in different climate zones and environmental conditions
- processes, procedure and techniques of:
 - building methods and installation of products
 - evaluating energy efficiencies in buildings
 - sealing the building envelope
- sustainability principles and concepts
- approaches to waste management consistent with principles of energy efficiency:
 - processes for minimising, reusing, recycling and recovering waste materials
- workplace safety:
 - hierarchy of control
- project plans, specifications and working drawings
- general construction terminology
- benchmarks to meet standards and rating systems for energy efficiency, such as:
 - Green Star requirements
 - WELL buildings
 - Passive House
- techniques which support energy efficiency:
 - protecting the air barrier by minimising and sealing gaps using advanced framing techniques to increase construction productivity, reduce thermal bridging and increase operational energy efficiency
 - installing insulation on the outside of the frame and in the roof, walls and floor
 - reducing the effect of thermal bridging
 - selecting appropriately sized heating, ventilation and air conditioning (HVAC) system, which considers the tightness of the structure and incorporates heat or energy recovery systems as appropriate for ventilation
 - using air or vapour barriers to ensure the entire building envelope is sealed, separating the inside environment from the outside
 - using thicker insulation to improve the building's thermal performance.

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:

- current and appropriate building, environmental and sustainability legislation, requirements, policies, standards, guidelines and accreditation/certification requirements

- Australian Standards and building industry codes of practice
- project plans, specifications and manufacturer's product and installation specifications
- business equipment, technology, applications and software systems for recording and filing documentation, researching, extracting, analysing and presenting information, interpreting performance data and developing documents and reports.

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