

Unit of Competency CPPHES4007

Assess thermal performance of existing residential buildings

Application

This unit specifies the skills and knowledge required to source and analyse information on the thermal performance of existing residences. It includes providing advice on ways to improve thermal performance accounting for ownership and type of building, costs and practicalities of implementing improvement recommendations.

This unit is for individuals who work independently as home sustainability assessors using specialised knowledge to complete thermal performance assessments. It involves completing routine and non-routine tasks and dealing with predictable and sometimes unpredictable problems.

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

Prerequisite Unit

None.

Competency Field

Home Sustainability.

Elements and Performance Criteria

1. Plan and organise thermal performance assessment.	1.1	Consult with client to clarify purpose of thermal performance assessment and respond to questions and concerns.
	1.2	Confirm assessment requirements in line with client needs, legislation, regulations, standards, codes and government incentive programs for improving thermal performance of existing residential buildings.
	1.3	Plan thermal performance assessment in consultation with client and according to work health and safety (WHS) requirements.
	1.4	Prepare thermal performance assessment documentation and confirm that required tools and equipment are available and in working order.
2. Compile and analyse information on thermal performance of residence.	2.1	Gather information from client to clarify building use and construction details.
	2.2	Select and fit required personal protective equipment (PPE).
	2.3	Carry out measurements and observations during on-site inspection to confirm factors impacting thermal performance.
	2.4	Record information using appropriate data collection tool.
	2.5	Analyse information to identify strengths and weaknesses in thermal performance of residence.
3. Analyse options for improving thermal performance of residence.	3.1	Source technical information on building thermal performance and evaluate suitability for existing residence.
	3.2	Identify government rebates and other assistance programs for thermal performance of existing residential buildings.
	3.3	Evaluate options for improving thermal performance and reducing emissions of the residence.

	3.4	Identify cost effective measures for improving thermal performance of the residence according to organisational requirements.
4. Report findings of thermal performance assessment.	4.1 4.2 4.3	Collate results, recommendations and supporting evidence of thermal performance assessment. Write up options and prioritise recommendations for thermal performance improvements. Discuss report and indicative costs and improvements in thermal performance with client.

Foundation Skills

Candidates require:

- oral communication skills to interact with clients from diverse social, economic and cultural backgrounds
- numeracy skills to interpret different units of measurement associated with existing residential buildings and their construction features.

Unit Mapping Information

Supersedes and equivalent to CPPHSA4004A Assess thermal performance of existing residences using non-rating tools and techniques.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPHES4007

Assess thermal performance of existing residential buildings

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by conducting thermal performance assessments and identifying thermal performance improvements for a minimum of two different existing residential buildings.

Knowledge Evidence

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

- Australian climate zones, characteristics and data used in thermal performance assessments:
 - diurnal temperature range
 - humidity
 - irradiance
 - minimum and maximum temperature
 - solar geometry
 - wind speed and direction
- building thermal performance principles:
 - glazing, shading and insulation for controlling temperature
 - orientation impacts
 - thermal mass for storing
 - ventilation
- definition of thermal comfort and its role in thermal performance assessments
- hazards and risks and types of personal protective equipment (PPE) to be used when conducting on-site thermal performance assessments
- impact of building design and materials on thermal performance:
 - condensation
 - constraints on choice of building materials
 - embodied energy and lifecycle properties of building materials
 - thermal performance properties of common building materials
- key requirements of codes, standards, regulations and government incentive programs associated with improving the thermal performance of existing residences
- options for improving thermal performance of existing residences
- passive energy design principles
- physical factors that influence thermal comfort
- relationship between building design, energy consumption and greenhouse gas emissions
- relationship between building thermal performance and thermal comfort
- requirements, documentation and uses of thermal performance ratings
- safe work requirements for on-site thermal performance assessments
- types, advantages and disadvantages of non-rating tools and techniques used to assess thermal performance of residential buildings

- units of measurement for energy and power associated with thermal performance assessments.

Assessment Conditions

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

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to:

- existing residential buildings to allow achievement of the performance evidence
- codes, standards, legislation and government programs relevant to thermal performance of buildings
- required tools and equipment including PPE
- technical reference library and/or (online) access to current technical publications on:
 - building design and materials
 - house energy rating schemes (HERS)
 - building thermal performance for existing buildings
 - Australian climate zones
 - manufacturers' product information on building products and materials.

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