



Australian Government

Assessment Requirements for CPPHES5001 Conduct thermal performance assessment of complex residential buildings

Release: 2

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Modification History

Release 2 This version first released with CPP Property Services Training Package Release 14.0.

Updated reference to reflect correction in Modification History from CPC Property Services 5.0 to CPP Property Services 9.0.

Release 1 This version first released with CPC Property Services Training Package Release 5.0.

Supersedes and equivalent to CPPHSA5001A Assess thermal performance of complex residential buildings. Updated to meet the Standards for Training Packages.

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by using an accredited Nationwide House Energy Rating Scheme (NatHERS) software tool to conduct thermal performance assessments of three complex residential buildings. The buildings assessed must include different designs:

- appropriate to a tropical, a temperate and a cold climate zone
- to fit sites with different exposures, topography and a wide diurnal temperate range
- that use climate-appropriate construction methods and materials

involve complex levels, built shading devices and void arrangements and incorporate the following:

- one single storey dwelling with:
 - a minimum of three bedrooms
 - one ground floor split level
 - two different ground floor construction
 - three different roof constructions including raked ceilings, sloping walls and at least three clerestory windows, dormer construction, split style walls
- one triple storey dwelling (a minimum of four bedrooms) with:
 - an underground basement/garage with a different footprint
 - a ground floor and a first floor
 - a habitable attic space with at least two dormer windows
 - a lift from the basement to both the ground floor and first floor
- one open-plan studio apartment.

The assessments must be conducted according to the requirements of the software, technical notes and jurisdictional regulations.

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
- design features that influence the thermal comfort of buildings
- energy units of measurement and terminology associated with thermal performance assessments:
 - energy efficiency
 - heating and cooling loads
 - solar heat gain coefficient (SHGC) and U-value
 - R-values
- options to improve thermal performance of buildings:
 - construction materials
 - sealing the building envelope
 - floor coverings
 - insulation levels
 - orientation
 - overshadowing
 - passive heating and cooling
 - shade
 - structural changes
 - thermal mass
 - ventilation
 - window size, location, type and coverings
- principles of passive design:
 - glazing
 - insulation
 - orientation
 - passive cooling
 - passive solar heating
 - shading
 - thermal bridging and breaks
- regulatory requirements for thermal performance assessments of residential buildings categorised as Class 1, 2, 4 and 10a of the National Construction Code (NCC)
- thermal performance properties of a variety of building materials:
 - solar absorptance
 - heat transfer coefficients and U-values

- material thickness
- reflectivity
- resistance heat flow up and down
- solar heat gain coefficient and emissivity
- thermal bridging and breaks
- thermal resistance and R-values
- thermal performance ratings:
 - current rating requirements
 - documentation of ratings
 - legal requirements
 - uses
- types and operation of NatHERS accredited software tools:
 - assumptions and limitations as to what can be assessed inherent in NatHERS software protocols and accredited software
 - building and external elements included in NatHERS thermal performance assessments
 - requirements for modelling complex buildings and non-standard materials.

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:

- current accredited NatHERS software tool and associated equipment and manuals
- the NCC and jurisdictional guidelines associated with conducting NatHERS assessments
- residential building design documentation and technical information to allow achievement of the performance evidence
- NatHERS technical notes and software accreditation protocol.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>