



Australian Government

**Assessment Requirements for CPPHES4004
Conduct thermal performance assessment
of residential buildings**

Release: 2

Assessment Requirements for CPPHES4004 Conduct thermal performance assessment of residential buildings

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 CPPHSA4012A Conduct NatHERS assessment of planned 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 six residential buildings.

The assessments must be conducted in accordance with the requirements of the software, technical notes and jurisdictional regulatory requirements.

The buildings assessed must include:

- different designs appropriate to a tropical, a temperate and a cold climate zone
- a variety of building materials and designs appropriate to the climate zone.

These buildings must incorporate the following:

- one single story dwelling (a minimum of three bedrooms)
- one double storey dwelling (a minimum of three bedrooms)
- an apartment unit (two bedrooms) in a Class 2 building modelled as:
 - a ground floor unit over a basement/carpark
 - a middle level unit with neighbouring units above and below
 - and a top floor unit with a roof over
- one alteration works that includes an addition to one of the above dwellings.

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 the thermal performance of buildings:
 - construction materials
 - draughtproofing
 - floor coverings
 - insulation levels
 - landscaping and plantings
 - orientation
 - overshadowing
 - passive heating and cooling
 - shade
 - structural changes
 - thermal mass
 - ventilation
 - window size, location, type and coverings
- passive design and thermal performance principles:
 - glazing
 - insulation
 - orientation
 - passive cooling
 - passive solar heating
 - shading
 - skylights
 - thermal mass
 - building sealing
 - thermal bridging and breaks
- regulatory and jurisdictional 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 common 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
- types and operation of NatHERS accredited software tools:
 - assumptions and limitations as to what can be assessed which are inherent in NatHERS software protocols and accredited software
 - building and external elements included in NatHERS 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:

- 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>