



D E W I C K
& A S S O C I A T E S

TECHNICAL NOTE: H1 ENERGY EFFICIENCY UPDATE

Overview & Purpose

All building work in New Zealand must comply with the Building Code to ensure safety, durability and efficiency for all users / occupants. As part of this, Section H1 of the Building Code sets out the energy efficiency requirements and Acceptable Solution (AS) / Verification Method (VM) assessment approach, depending on the size and use of the building.

Key Changes

In recent months some changes have been made to the requirements of H1 Energy Efficiency, which are now coming into mandatory effect. We have reviewed the changes as below:

Climate Zones

New Zealand has now been split into six climate zones, with associated R-value requirements aligned across windows, walls, roofs, floors, doors and skylights.

Building Classification

The updated requirements have provided five categories in which to assess the energy efficiency of a building as follows:

- AS1: Acceptable Solution H1/AS1 Energy efficiency for all housing, and buildings up to 300 m²;
- AS2: Acceptable Solution H1/AS2 Energy efficiency for buildings > 300 m²;
- VM1: Verification Method H1/VM1 Energy efficiency for all housing, and buildings up to 300 m²;
- VM2: Verification Method H1/VM2 Energy efficiency for buildings > 300 m²;
- VM3: Verification Method H1/VM3 Energy efficiency of HVAC systems in commercial buildings.

The choice of Acceptable Solution or Verification Method classification is dependent on the attributes of your building, i.e. extent of glazing and location, R-values and wall / door area as detailed within the table below:

Schedule Method (AS1)	Calculation Method (AS1)	Modelling Method (VM1)
Where total glazing is $\leq 30\%$ of total wall area	Where total glazing is $\leq 40\%$ of total wall area (previously 50%)	Where total glazing is $\geq 40\%$ on all walls
Where $\leq 30\%$ glazing is on east, south and west walls	Where R-values are different to the standard, calculate/compare to a reference building	Where R-values are different to the standard
Where $< 1.5\text{m}^2$ skylight area or skylights is $< 1.5\%$ of total roof area		Model compared to a reference model (using the standard R-values)
Where $< 6.0\text{m}^2$ door area, or doors $< 6\%$ of total wall area		
Use R-value tables		

The 'Scheduled Method' method utilises schedules of tabulated minimum R-values for roofs, walls, floors, windows, doors and skylights.

The 'Calculation Method' uses a comparison methodology permitting different insulation combinations for roofs, walls, floors, windows, doors and skylights.

The 'Verification Method' enables the building to be modelled using approved software and compared to a reference building with the standard R-values.

R-Values

The external fabric of buildings has been reassessed, increasing performance requirements to reduce heat loss or solar gain and therefore improve the efficiency of HVAC systems, some notable changes include:

- Walls: wall R-Values now also apply to the doors located within them
- Floors: new minimum values for both slabs on ground and other floors types
- Window performance now considers the frame area, glass area and glass edge length. This means that larger windows are more affected by glass R-value and smaller windows are more affected by frame R-value.

Next Steps

Ensure you understand the changes and their impact on your construction projects. You may need to alter some internal processes or outsource some elements to ensure compliance with the new requirements of the Building Code.