



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

TECHNICAL NOTE: NCC 2019 SECTION J UPDATE

Overview & Purpose

The Australian Building Codes Board (ABCB) has updated the energy efficiency provisions in the National Construction Code (NCC) to improve thermal performance, increase energy efficiency, reduce greenhouse gas emissions and reduce the peak demand of buildings. This has been developed in line with the Council of Australian Governments (COAG) National Energy Productivity Plan to reduce greenhouse gas emissions by 40% by 2030.

The official NCC 2019 came into effect on 1st May 2019, however an additional 12-month transition period was granted for Section J, such that any project with a submission date prior to 1st May 2020 can still achieve Section J compliance in accordance with the NCC 2016.

This discretionary twelve-month transitional period has now ended, with the requirements of the NCC 2019 now in full legal effect.

This Technical Note explores the key changes of the new updates and how this may affect your construction projects.

Key Changes

- **External wall constructions** are now considered as an overall assembly and compliance now requires that composite wall-glazing constructions meet an overall total system U-value (typically U2.0) across all facades. A new NCC Façade Calculator has been adopted to replace the legacy Deemed to Satisfy (DTS) Glazing Calculator which enables a whole façade approach and the assessment of wall-glazing constructions. The total system U-value for wall-glazing construction must not be more than $U_{total} 2.0 \text{ W/m}^2\text{K}$ for most non-residential building classes and climate zones.
- **Thermal bridging** must now be accounted for in the calculation of R-values and U-values for roofs, floors and wall-glazing constructions.
- There have been minor changes in the **minimum R-value** requirements for ceilings and roofs as follows:
 - Climate Zones 1, 2, 3, 4 and 5: R3.7 downward direction
 - Climate Zone 6: R3.2 downward direction
 - Climate Zone 7: R3.7 upward direction
 - Climate Zone 8: R4.8 upward direction

- The maximum **solar absorptance of the upper surface of roofs** must not exceed 0.45 in climate zones 1, 2, 3, 4, 5, 6 and 7 which may impact architectural finishes and colour selections.
- **Roof lights** must now not exceed 5% of the floor area of the room or space served and have a total system U-value not exceeding U3.9. There are also updated requirements for the **total system SHGC**.
- Performance based verification methods now stipulate **additional thermal comfort** requirements, in addition to energy consumption, in order to achieve compliance. Furthermore, JV1 NABERS Energy for Offices or JV2 Green Star may be viable alternatives to JV3 Reference Building in demonstrating compliance with Part J, where projects are registered under these schemes.
- NCC 2019 incorporates a **new verification method (JV4)** to demonstrate building sealing compliance. Compliance is achieved when the building envelope is sealed at an air permeability rate (in-accordance with AS/NZS ISO 9972) of 8.5 or 10m³/hr.m², depending on building classification. JV4 is not, however, compulsory and the DTS provisions of J3 may be applied.
- Minimum performance requirements for **mechanical systems** have increased including:
 - Improved outside air treatment / economy cycle
 - Increased fan efficiency
 - Additional pump system EU regulations
 - Increased insulation requirements
 - Increased heating and hot water thermal efficiency
 - Increased chiller and unitary air conditioning plant system efficiency
 - Improved heat rejection fan power requirements
- Energy efficiency DTS provisions for artificial lighting have been introduced which significantly restrict the power (illumination power density) by between 20 and 90% on the 2016 DTS requirements, across all space types. The updates also include changes to control system requirements and revised adjustment factors as a result of lighting control systems.
- NCC 2019 incorporates a new section on vertical transportation which sets minimum energy performance requirements in idle/standby modes and drives minimum lighting and ventilation performance requirements when lift cars are unused for a specified time period. These requirements are compliant with international standard ISO 25745-2 (2015).

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 NCC 2019 Section J.

The next edition of the NCC is scheduled to be released in 2022. The Australian Building Codes Board (ABCB) are currently accepting proposals for change, with a deadline of August 2020. You can make proposals using the following link: [Propose a Change](#)