

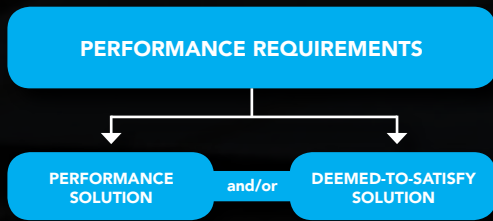


NCC 2019 KEY CHANGES

The **National Construction Code (NCC)** provides the minimum necessary requirements applicable to new buildings throughout Australia.

Performance requirements under the NCC must be satisfied through either:

- Performance Solutions;
- Deemed-To-Satisfy (DTS) Solutions; or
- A combination of the two.



DTS is usually achieved by Acceptable Construction Practice in NCC or Acceptable Construction Manual referenced in NCC.

Designers may follow Australian Standards as Performance Solutions over DTS solutions; however this compliance process may require additional verification and expert's judgement.

This flyer indicates the important changes to DTS requirements surrounding roof tile installation and differences when compared with relevant industry-approved Australian Standards.

IMPORTANT CHANGES

- As an Acceptable Construction Manual (ACM) in Volume 1 and 2 of the NCC, **AS 2050 (2018) - Installation of Roof Tiles** governs the installation of roof tiles for both residential and commercial projects and covers scenarios outside the scope of the NCC.
- Meanwhile, **AS 2049 (2002) – Roof Tiles** has been removed as an ACM, as the standard is non-prescriptive and can instead be used to test roof tiles. This does not affect the construction or design method of roof tiles.

SCOPE AND GENERAL

NCC ACCEPTABLE CONSTRUCTION PRACTICE

AUSTRALIAN STANDARD/ INDUSTRY RECOMMENDATION



Fire safety

Where roof tiles are used as external cladding for Class 2-9 buildings, the system now requires material & system testing.

Inherent properties of roof tiles make them non-combustible, while the Bushfire Verification Method Handbook has also deemed concrete and terracotta roof tiles to be of low risk of destruction during a fire. Use manufacturer documentation to supersede testing requirements.



Non-combustible materials

Sarking materials with thickness <1mm and flammability index not greater than 5 are now deemed non-combustible and may be used wherever non-combustible material is required in the NCC Volume 2.

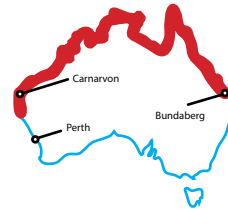
Reinforces the non-combustible nature of tiled roofs with sarking. AS 1530.2 may also be used to check the sarking material's flammability index.



Wind classification

ACPs only applies to wind speeds up to N3 classification.

For designs outside this range for Class 1 and 10 buildings, follow AS 2050 (Installation of Roof Tiles), AS 4055 (Wind Loads for Housing) and AS 4773 (Design of Masonry for Small Housing).



Shaded regions are outside the scope of the NCC.

Generally, these Australian Standards provide less stringent requirements as they recognise roof tiles' heavyweight properties and their effectiveness in **resisting wind uplift**.

*Volume 1 covers class 2-9 buildings which are generally high-rise or commercial buildings while Volume 2 covers class 1 and 10 residential buildings. For more information, visit: [Australian Building Codes Board's Building Classifications](http://australianbuildingcodesboard.gov.au/building-classifications)

VOLUME 1

VOLUME 2

NCC ACCEPTABLE CONSTRUCTION PRACTICE



Solar Absorptance

This is a significant increase in stringency compared to NCC 2016.

Except for some areas in South Australia, the upper surface of the roof of a Class 2-9 building must have a solar absorptance less than 0.45.

AUSTRALIAN STANDARD/ INDUSTRY RECOMMENDATION

This restriction does not apply to the roof of a **house, garage or shed** (Class 1 or 10 buildings).

Use of either light or dark tiles can be easily justified through a Performance Solution pathway as both have advantages in energy efficiency. Consult with your manufacturer.



Roof Pitch

The NCC's scope is limited to roof with pitch between 15° and 35°.

AS 2050 may be followed for designs with a roof pitch > 35°.

The most common roof pitches are in the scope of the NCC.



Fastening Methods

There are different fastening requirements for tiles on the edge of a roof, tiles along the field of a roof and ancillary tile elements, which are dependent on the design wind speed.

The majority of these requirements remain unchanged from NCC 2016, while any changes simply align with industry best practices.

Follow new diagrams in Section 3.5.2 of NCC Volume 2, which provides further guidance.



Sarking

All tiled roofs with a pitch < 18° must be provided with sarking.

Sarking is also used with other roofing materials to satisfy condensation management requirements.

Follow AS 2050, which has more flexible sarking requirements, for roof pitches between 15° and 18°.

The most common roof pitches are > 18° and use sarking.



Ventilation and Condensation

Openings in roof spaces require a total unobstructed area of 1/300 of ceiling area when pitch > 22° (most tiled roofs are used in this scenario).

Where the roof pitch is ≤ 22°, the number of ventilators and eave vents specified must be doubled.

Thermal mass and moisture storage capacity of tiles absorb moisture under the surfaces, which make it less likely that dripping due to condensation will form.

These conditions apply for exhaust systems installed in kitchens, bathrooms or laundries which discharge into roof spaces.

Ask the supplier of your exhaust systems for specifications regarding whether ventilated roof spaces are required.