

Carpark fire safety improvements

What are the proposed changes?

We are proposing changes to NCC Volume One to modernise and improve the fire safety of carparks.

These changes include:

- Requiring sprinkler protection in all carparks with more than 40 cars, irrespective of whether they meet the NCC definition of being an ‘open-deck’ carpark or not (E1D5, E1D9 and S17C2).
- Requiring sprinkler protection to car stackers located within carparks (E1D9).
- Removing the Fire Resistance Level (FRL) concessions for:
 - open-deck carparks in Type A and B construction (S5C19 and S5C22)
 - sprinkler protected carparks in buildings of Type A construction which are located below another building classification (S5C19).

Why are these changes proposed?

These changes aim to address the fire-related risks associated with modern carparks, such as increased vehicle size, increased fuel load (increased use of plastic) and new energy sources and vehicle parking/storage methods.

The current NCC Deemed-to-Satisfy (DTS) Provisions are based on research undertaken in the 1980s. That research underpins the NCC concession for open-deck carparks accommodating more than 40 cars to not require a sprinkler system.

That research was also the basis for several NCC concessions for sprinkler protected open-deck carparks by reducing the fire ratings and provide an allowance for bare steel elements. These concessions have enabled the economical design and construction of numerous steel carpark structures throughout Australia, but a lot has changed since then.

Since the implementation of these concessions in the NCC, the design of vehicles has evolved. The fuel load within modern vehicles has increased considerably mainly due to increased use of plastics. New technologies like electric car batteries, hydrogen powered cars and car stackers have also been introduced.

In addition, basement car parks are more frequently been used to store goods and are often co-located with end of trip change facilities, further changing the risk profile of car parks.

How were the changes developed?

Building Ministers asked us to help facilitate the adoption of electric vehicles (EVs) by ensuring the NCC makes their uptake safe and easy. We expanded this work to include investigation of modern car parks in general, given their construction and fire risk has changed substantially over the past few decades.

We engaged a fire safety engineering company to undertake a detailed literature review of the current fire hazards in modern car parks. A further peer review was carried out by another fire safety engineering company. This research acknowledges that a significant fire occurring in a car park is a rare event, but has the potential to cause considerable damage.

From this review and the available evidence, we developed several options to improve the NCC fire safety DTS Provisions for car parks. These options were then refined with key stakeholders.

Who has been involved?

We consulted with members of our peak technical committee, the [Building Codes Committee](#) and the following key stakeholders:

- [The Society of Fire Safety \(SFS\)](#)
- [The Australian Steel Institute \(ASI\)](#)
- [Master Builders Association \(MBA\)](#)
- [Standards Australia technical committee FP-004 relating to sprinkler protection](#)
- [The Property Council of Australia \(PCA\)](#)
- [The National Council for Fire & Emergency Services \(AFAC\)](#)
- [Consult Australia.](#)

What are the impacts?

These changes modernise the NCC and will result in improved fire safety of carparks and the occupants located in, and adjacent to these buildings.

Carparks located below other classifications in multi-storey buildings of Type A construction will not be able to use the reduced FRL concessions. However, analysis and consultation showed that these concessions are typically not used in these situations.

There are some cost increases expected when a sprinkler system is required for car stackers and multi-storey open-deck carparks.

More information and relevant links

- [Fire safety in carparks - Literature review](#)
- [Multi-storey carparks: Learning from overseas incidences](#)

To read the full details of the changes, please review the [NCC 2025 Volume One PCD](#).

Want to provide feedback?

Responses to the Public Comment Draft are invited until **11:59 PM AEST Monday 1 July 2024**.

In line with the ABCB's process for undertaking public consultation, comment will only be accepted through the ABCB's online [Consultation Hub](#).

To access the Public Comment Draft and response form:

1. Download the NCC volume(s) you wish to view and provide comment. You can also download the *supporting information* PDF for detailed information on the more significant/complex changes.
2. Download the response form.

Once you've reviewed the draft, complete the response form, and include your feedback on the suggested changes to the NCC.

To submit your comments:

1. Enter our Public Comment Draft consultation hub.
2. Start by agreeing to the privacy statement.
3. Let us know if you'd like your submission published publicly.
4. Enter your contact details.
5. Upload your completed form in .doc format (please make sure each file is under 25MB) and submit.