



Advisory Notice Building 01/26

EV parking in residential buildings

This Advisory Notice provides guidance on fire safety measures for electric vehicle parking areas in residential buildings.

Background

The growing use of electric vehicles (EVs) in South Australia is changing fire safety considerations for residential buildings, particularly where EVs are parked or charged in garages, carports and shared carparks.

Recent regulatory changes address EV charging station requirements in Class 7a carparks, including those that form part of a Class 2 to 9 building. However, appropriate fire safety measures should also be considered for EV parking and charging associated with Class 1 buildings.

Discussion

EV battery fire risk

EVs are powered by alternative energy fuel cells, primarily lithium chemistry batteries. A failure event – arising from overcharge, equipment failure or mechanical impact – can result in thermal runaway, an exothermic chemical reaction that is difficult to extinguish, produces toxic gas, a fast-spreading fire, a fire lasting four or more hours, and a risk of reignition.

Further information on the significant risks and challenges for firefighters in the management of an EV battery fire is available from South Australia's fire authorities – the Metropolitan Fire Service (MFS) and Country Fire Service (CFS).

[MFS Position Statement - Electric Vehicles and EV Charging Stations in Buildings](#)

[CFS Position Statement - Electric Vehicles and EV Charging Stations in Buildings](#)

Requirements for Class 7a carparks

NCC 2025 includes updated carpark fire safety provisions to better respond to the fire risks associated with modern vehicles and will apply in South Australia from 1 May 2027. These changes increase the use of active fire suppression and passive fire resistance measures, particularly in carparks located beneath other building classifications

The changes include:

- a requirement for sprinkler protection for open-deck carparks when they form part of a multi-classified building and exceed 40 vehicles,
- reduced fire resistance level (FRL) concessions for certain open-deck carparks, and
- mandatory sprinkler protection for all Class 7a carparks containing car stackers, regardless of carpark type.

From 1 July 2026, EV charging stations are generally excluded from the definition of development in South Australia, except (amongst other things) where they are located in an underground or covered area and are not associated with a Class 1 building under the Building Code.

[Ministerial Building Standard MBS 013 *Installation of electric vehicle charging stations*](#) sets minimum requirements for EV charging stations installed in Class 7a carparks, including a Class 7a carpark that forms part of a larger Class 2 to 9 building. These requirements address the items to be considered in relation to EV charging stations recommended by the fire authorities in their position statements.

Recommendations for EV parking and charging areas associated with Class 1 buildings

Although thermal runaway can occur without warning, visible flames are often preceded by signs such as heat, swelling or discolouration of the battery casing, unusual noise or odour, vapour, or smoke.

Fire authorities recommend installing a working smoke alarm or heat alarm in any space where devices using rechargeable (lithium-ion) batteries are charged or stored. This includes garages, carports and undercroft spaces associated with a Class 1 building where an EV is parked and charged. The alarm increases the likelihood that occupants will be alerted to an emerging battery fault, giving them time to evacuate and call Triple Zero (000) before the incident escalates.

Interconnected smoke or heat alarms are generally recommended in garages, which are commonly used to store flammable materials, charge lithium-ion devices such as e-bikes, e-scooters and power tools, and house battery storage systems.

Garages can accumulate dust, exhaust and other particles that may trigger nuisance alarms in standard smoke alarms. If this is a concern, a heat alarm may be more appropriate, provided it is interconnected with the home's other alarms.

Additional information

Information on the installation and maintenance of smoke alarms in South Australia is available at [SA.GOV.AU - Smoke alarms](#) and [Smoke Alarms | Metropolitan Fire Service](#).

- [Lithium-ion batteries - CFS](#)
- [MFS Home fire safety fact sheet – Lithium-ion batteries \(March 2025\)](#)
- [MFS Home fire safety fact sheet – Photovoltaic \(PV\) Array and Battery Energy Storage Systems \(April 2023\)](#)

For more information:

Metropolitan Fire Service (MFS)
Built Environment Section
Community Safety & Resilience
Department

T (08) 8204 3611
E mfs.communitysafety@eso.sa.gov.au
W www.mfs.sa.gov.au/community-safety/building-and-commercial-fire-safety

Country Fire Service (CFS)
Development Assessment Service

T (08) 8115 3372
E cfs.dascommercialteam@eso.sa.gov.au
W www.cfs.sa.gov.au/plan-prepare/planning-building/

Building Policy and Programs
Planning and Building
Department for Housing and Urban
Development

T 1800 752 664
E plansa@sa.gov.au
W plan.sa.gov.au/resources/building

Advisory Notices are issued to assist in the interpretation of the *Planning, Development and Infrastructure Act 2016*. They provide general information only and should not be relied upon as legal advice or an accurate statement of the relevant legislation provisions. If you are uncertain as to your legal obligations, you should obtain independent legal advice.