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Winter Driving

A driver's guide from Alphabet to getting the most from your petrol, diesel or electric car in winter



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Introduction

We're getting used to the onset of extreme winter weather, but what's the best way to prepare for cold weatherdriving in snow, ice and rain? And if you drive an EV, how is range affected by cold weather?

Before you go anywhere, follow these tips to help you to stay safe.

→ Plan your journey. Tell friends or family where you're going, which route you're taking and when you expect to arrive.

→ Keep a torch, blanket, ice-scraper, small shovel, suitable shoes or boots, de-icing fluid and a supply of winter grade screen wash fluid in the car. Some basic food and drink is also a good idea, and perhaps a flask of hot drink for longer journeys.

→ Always take a fully-charged mobile phone with you, and ensure you have a working in-car charger.

→ Never use warm or hot water to clear your windows of ice. The sudden change in temperature could crack the glass.

→ Never set off if you haven't completely de-iced your car windows, lights and exterior mirrors. Driving with just a small 'porthole' of clear glass in a frosty windscreen isn't only dangerous – it's illegal. It's also a good idea to remove snow from the bonnet, bootlid and roof.

→ Never leave your car unattended with the engine running to de-ice it – you may lose the car to an opportunist thief.

→ Make sure your car is fuelled or charged sufficiently for your journey, bearing in mind you may get stuck in winter weather.

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Basic checks

Having your car checked over by an authorised garage or workshop is the best way to reassure yourself that you are prepared for the worst winter weather. But there are some basic tasks you can do yourself. These include:

1. Battery

A healthy battery is essential in winter when demands on lights and cold starting are heavy. Ensure the connections are tight and if the battery has an inspection window check the displayed colours:

- Green: your battery is working properly.
- Black: your battery needs charging.
- Clear/yellow: your battery needs replacing.

2. Tyres

Check your tyre pressures, including the spare, and measure your tyre tread depths. The legal minimum for cars is 1.6mm, but deeper tread gives far better grip in snow. Markers in the tyre tread indicate wear; if they are flush with the tread you'll need to replace the tyre. Winter tyres provide a remarkable improvement in control in cold weather – click the menu tab above for more on driving in snow.

3. Screen wash

It's crucial that you use the correct screen wash additive, especially in colder weather. Don't dilute premixed screen wash solution as this will reduce its effectiveness and remember that the washer system can still freeze even if you have heated washer jets.

Simple checks to help winter-ready your car



Use a gauge to measure tread depth



Check tyre pressures regularly



Use winter-grade screenwash fluid



Top-up engine coolant/antifreeze



Ensure lights and glass are clear of ice



Treat your car to a pre-winter check-up

4. Windscreen wipers

Check your front and rear wiper blades for wear or splitting and don't use them to clear snow or ice as they may be frozen to the glass. If they are stuck to the glass, free them using de-icer.

5. ABS & ESP

When driving in slippery conditions ESP and ABS systems may activate to help you control the car effectively. The ESP/ABS light will flash on your dash to let you know. When ABS is in operation it produces a pulsing sensation through the brake pedal, together with a distinctive 'crunching' sound. Even with ESP/ABS, stopping distances may not be reduced when braking on ice or snow, so maintaining an increased distance from the vehicle in front is still paramount.

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Driving in snow

If you are caught in snow, a sensible approach to the road conditions and your driving will pay dividends and help you get home safely.

Tips for driving in snow

- Be gentle on the throttle, avoiding any harsh acceleration which is likely to cause wheelspin.
- Pull away in second gear if driving a car with manual transmission, or ensure you have pressed the winter driving button (if fitted) – often marked with a snowflake symbol – if your car has automatic transmission.
- Use a low gear and try to avoid hard braking. Leave as much room as you can between you and the car in front.

- To slow down, use engine braking through the gears in a manual car or switch to manual gear selection in an automatic.
- Use your brakes lightly and cover the brake pedal to show your brake lights to others behind. Remember that ABS does not necessarily reduce your braking distance in snow and ice.
- If you're approaching a snow-covered hill, drop well back or wait until it's clear of traffic so you won't have to stop part way up. Keep a constant speed and try to avoid changing gear on the hill.
- Use your headlights in heavy snow. Daytime running lights won't be enough, and there'll be no lighting at the back of your car.

- Think about your current driving environment. Just because the conditions might have improved on main roads, country roads or bridges might still be hazardous due to less traffic or because they've not been gritted.

Black ice

Black ice is a thin layer of ice on the road surface that's usually transparent and caused by rain falling on frozen surfaces. Because it's difficult to see, it can be one of the biggest dangers of winter driving. It tends to form on parts of the road that don't get much sun – tree-lined routes and tunnels – as well as on bridges, overpasses and the road beneath overpasses. Slow right down for corners if you suspect it and keep your driving as smooth as possible.

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Driving in rain

Driving safely in wet weather is a concern that'll have crossed the minds of every driver. It takes just six inches of fast-flowing water to knock you off your feet, while a foot of water is enough to float a car. In short, water presents huge hazards to motorists.

Tips for driving in wet weather

- Reduce your speed in the wet, which will give you more time to react and cut the chance of your car sliding into trouble.
- Be aware of deep water. Drive on the highest section of road and use the kerb to gauge water depth.
- Avoid wet leaves. Your car can skid just as easily as on ice.
- Don't splash pedestrians. It's illegal and dangerous behaviour that could have an impact on other drivers.
- Give cyclists and motorbikes more room as standing water or a sudden gust of wind could cause bikers to veer across the road.
- Switch on front and rear fog lights in heavy spray but use the rears only during daylight to avoid dazzling following drivers.
- Check your car insurance includes flood damage. Comprehensive policies should cover against floods but you may not be protected if you park next to a river and flooding was predicted, or if you drive into a flooded street where water levels are more than a few cm.

Familiarise yourself with stopping distances

The Highway Code states stopping distances more than double in the wet. The rule of thumb in the dry is to leave two seconds between you and the car in front, so in wet conditions this goes up to four seconds. Approximate stopping distances for a car with at least 8mm of tyre tread are shown below. With 3mm of tread, add around 10 metres at each speed:

| Speed (mph) | Stopping distance (m) (dry/wet) | Stopping distance in car lengths |
|-------------|---------------------------------|----------------------------------|
| 30 | 23/46 | 6/12 |
| 60 | 73/146 | 18/36 |
| 70 | 96/192 | 24/48 |

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EV range in winter

All cars, whether they run on petrol, diesel or electricity, become less energy-efficient in cold weather – by around 20% for the typical ICE vehicle. For EVs, the unfortunate truth is that cold temperatures can also substantially hamper both a battery's performance and its ability to accept a charge.

That means if you own, for example, a BMW i3 that's otherwise rated to run for 150 miles on a charge, you'd likely only be able to drive for around 88 miles before having to plug it in. It will also take longer to bring the battery pack up to a full charge. Cold temperatures also tend to limit an electric car's regenerative braking function, which recovers energy that would otherwise be lost during deceleration or stopping and sends it back to the battery.

Tips for maximising your EV's range in cold weather

- Keep the vehicle plugged in as often as possible to ensure it maintains a full charge. If your vehicle has a pre-conditioning feature, engage it (usually via a smartphone app) to heat both the interior and the battery pack while the vehicle is plugged in.
- Limit the use of the heater while driving. Set the temperature as low as you can comfortably stand, and instead rely on your car's heated seats and heated steering wheel (if so equipped), which consume less electricity. Overall, electric vehicles lose only an average of about 12% of range in the cold while running with their heaters switched off compared with 41% with the climate control in use.

- If your car has a selectable 'Eco' mode that adjusts performance parameters to preserve battery range, be sure to engage it – and try to limit your speed while driving in the cold to preserve charge.
- If your car allows you to tune in more or less regenerative braking, set it to full force to send as much power back to the battery as possible when coming to a stop.
- Make a note of nearby public charging stations in case you're running unexpectedly low on charge. Look for DC Fast Charging units that can bring an electric car's battery back up to 80% of its capacity in 30-45 minutes depending on the vehicle and the ambient temperature.

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More information

The following websites offer a wide range of tips, advice and information on safer winter driving and driving within the law.

Royal Society for the Prevention of Accidents: click [HERE](#)

Think! Road safety campaign (UK Department for Transport): click [HERE](#)

BRAKE: click [HERE](#)

Driving and Vehicle Standards Agency: click [HERE](#)

Department for Transport: click [HERE](#)

Automobile Association: click [HERE](#)

Royal Automobile Club: click [HERE](#)

Greenfleet: click [HERE](#)

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