Road safety factsheet: Aquaplaning

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What is Aquaplaning?

Aquaplaning, also known as hydroplaning, occurs when a layer of water builds up between a vehicle's tyres and the road surface, causing the tyres to lose contact with the road. This results in a loss of traction, and the car will effectively float on a wedge of water, making it difficult for the driver to steer, brake, or accelerate properly. Aquaplaning is particularly dangerous in wet weather and can lead to serious accidents if not managed correctly.

More technically, aquaplaning occurs when the water depth on the road exceeds the ability of the tyres to evacuate it. As a result, the tyres lose contact with the road and float on top of the water. This significantly impairs the vehicle's ability to steer and brake. Aquaplaning is most likely to occur when driving at higher speeds in heavy rain or on flooded roads.

To prevent aquaplaning, it is important to ensure that your tyres are in good condition and to adjust your driving speed to suit the weather and road conditions

How Does Aquaplaning Happen?

Aquaplaning is caused by driving too fast into surface water. When the tyre tread cannot channel enough water away, the tyres lose contact with the road, and the car will float on a wedge of water. The risk of aquaplaning increases with the depth of water on the road and the speed of the vehicle.
Several factors contribute to aquaplaning:

- **Speed**: Driving too quickly in wet conditions increases the chances of aquaplaning, as higher speeds reduce the ability of the tyres to displace water.
- **Tyre Condition**: Worn tyres with insufficient tread depth are less effective at channeling water away, making aquaplaning more likely.
- **Tyre Pressure**: Incorrect tyre pressure—whether too high or too low—can impair a tyres ability to maintain proper contact with the road, increasing the risk of aquaplaning.

How to Prevent Aquaplaning

To reduce the likelihood of aquaplaning, follow these essential tips:

1. **Reduce Speed in Wet Conditions**: The most effective way to prevent aquaplaning is to drive at a lower speed when the roads are wet. Speeding in rainy or flooded conditions increases the chances of losing control of the vehicle.

2. **Ensure Tyres are in Good Condition**: Check your tyre tread depth regularly to ensure that it meets the legal minimum of 1.6mm in the UK. However, for optimal performance in wet conditions, it is

recommended that tyres have at least 3mm of tread. Adequate tread allows the tyres to channel water away more effectively, improving grip on wet roads.

3. **Avoid Standing Water**: If you encounter puddles or flooded areas on the road, slow down and, if possible, steer around them. Large areas of standing water pose a significant risk of aquaplaning.
4. **Drive Smoothly**: Avoid sudden braking, sharp steering, or rapid acceleration. Smooth driving allows the tyres to maintain better contact with the road and reduces the risk of skidding or aquaplaning.

What to do if you start Aquaplaning

If you find yourself aquaplaning, it's important to stay calm and take the following steps:

1. **Don't Panic**: If the car begins to float or lose grip, remain calm. Panicking and making sudden movements can worsen the situation.
2. **Ease Off the Accelerator**: Gradually take your foot off the accelerator. Sudden deceleration can worsen the loss of traction, so allow the vehicle to slow down naturally.
3. **Avoid Braking Suddenly**: Never brake sharply while aquaplaning, as this can cause the tyres to lock up, increasing the skid. Instead, allow the car to decelerate gradually.
4. **Steer Gently**: If the vehicle begins to skid or slide, gently steer in the direction you want to go if your car is fitted with anti-skid technology. Avoid sharp steering movements, as they can make a skid worse. Some older vehicles may not have stabilising technology; in this case, gently ease off the accelerator and steer into the skid.

Once your speed drops sufficiently, the tyres will begin to regain contact with the road, and you'll be able to regain control of the vehicle.

Tyre Maintenance and Aquaplaning Prevention

Regular tyre maintenance is crucial in reducing the risk of aquaplaning. Here's how to keep your tyres in good condition:

- **Tyre Tread Depth**: The tread on your tyres is responsible for channelling water away from the road surface. As the tread wears down, the tyre's ability to displace water diminishes, increasing the likelihood of aquaplaning. Check the tread depth regularly and replace tyres when the tread becomes too shallow. In the UK, the legal minimum tread depth is 1.6mm, but experts recommend replacing tyres when the tread depth drops below 3mm for better performance in wet conditions.
- **Correct Tyre Pressure**: Always check your tyre pressure to ensure it is at the manufacturer's recommended level. Tyres that are over- or under-inflated can affect the tyre's contact with the road, increasing the risk of aquaplaning.

It's important to replace your tyres if they show any of the following signs:

- **Worn Tread**: If the tread depth is below the recommended 3mm for wet weather driving or the legal limit of 1.6mm.
- **Tyre Damage**: Visible cuts, bulges, or punctures in the tyre.

- **Age of Tyres**: Tyres older than five to six years, even if they appear to be in good condition, should be replaced.

Regularly inspecting your tyres and replacing them when necessary, will help ensure that your vehicle maintains optimal grip, especially in wet conditions.

Aquaplaning is a serious hazard, particularly when driving in wet conditions. However, by adjusting your driving habits and maintaining your tyres, you can significantly reduce the risk of aquaplaning. Always drive at a safe speed, ensure your tyres are in good condition, and take extra care when driving in wet weather. If you do experience aquaplaning, stay calm and follow the correct procedures to regain control of your vehicle.