Hydroplaning

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SafetyFirst

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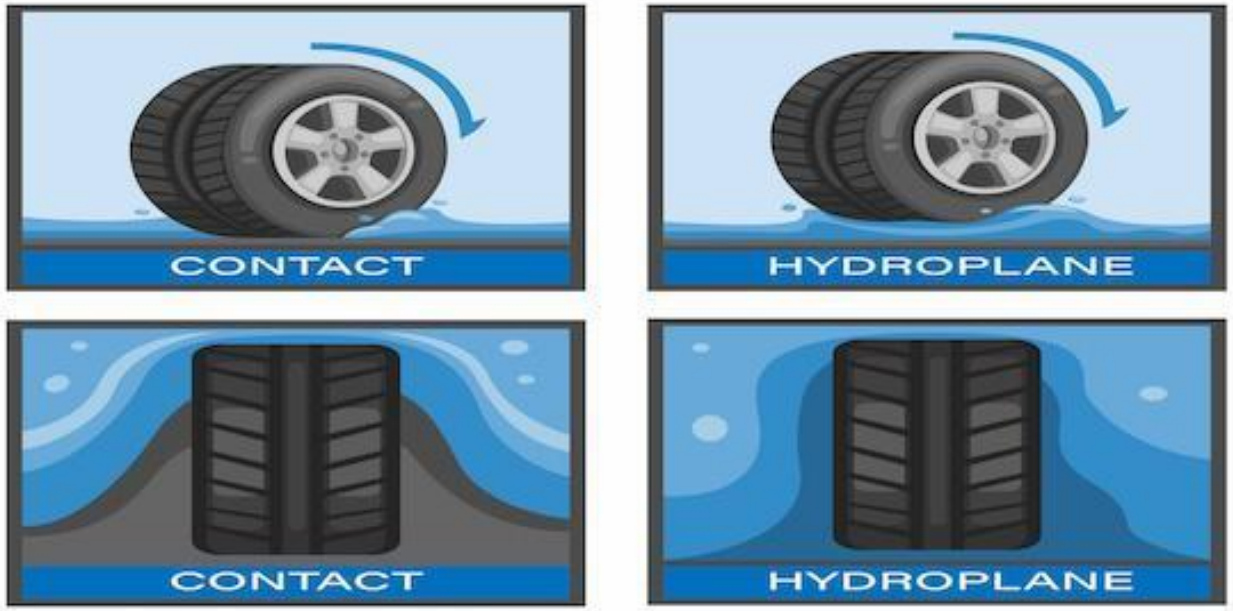


Overview

- Hydroplaning is when a layer of water builds up between the vehicles tires and the road surface causing the loss of traction and possible control.
- It is caused by a combination of road conditions, vehicle speed, tread depth and vehicle weight.
- If all four tires become waterborne at once, the vehicle will lose steering, braking, and power control until the tires regain contact with the pavement.
- All-wheel drive vehicles are more likely to hydroplane than two-wheel drive vehicles, because their computerized differentials may shift power from the front to the rear tires, creating a hydroplaning situation.
- Most automobile safety experts agree that hydroplaning is most likely to occur at speeds greater than thirty-five miles per hour.

Statistics

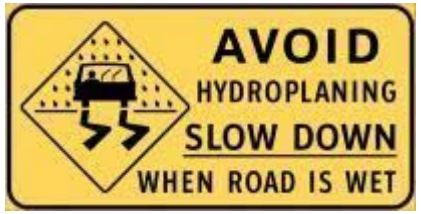
- An average of nearly 1 million accidents occur each year due to wet pavements.
- Per the Federal Highway Administration (FHWA) 75% of weather-related crashes which occur on wet pavements:
  - 47% involve active rainfall
  - 15% involve snow or sleet
  - 13% involve ice/freezing rain
  - 11% a mix of snow/slush covered pavement
- This results in about 4,700 deaths and 384,000 injuries.

How to Spot Hydroplaning

- If a vehicle's drive wheels are hydroplaning, engine RPMs may suddenly increase as the wheels spin on top of the water.
- While driving straight, a vehicle may vibrate or "wiggle" in the steering mechanism or feel like the steering is "loose" or "soft."
- Not seeing tire tracks (in the mirror) immediately behind the vehicle may be due to the tires not "cutting through" the water effectively.
- Any sideways motion (skidding, fishtailing, etc.) while navigating curves is a strong indicator of hydroplaning.

Hydroplaning Accident Causes

- The following are some of the most common causes of a hydroplaning accident:
  - Water pools on the roads surface, creating deep puddles and becomes a potentially dangerous water hazard
  - Driver is travelling way too fast for road conditions
  - The design and curvature of the road is inadequate (i.e., poor drainage)
  - Tire pressure is incorrect or not optimal
  - Inadequate water drainage



- While there are many situations that may cause a hydroplaning accident, the list above mark the most frequently seen contributors.

How to Prevent Hydroplaning

- The following are some of the most common ways to prevent hydroplaning:
  - Keep your tires properly inflated
  - Consistently check your tire tread
  - Don't use cruise control in the rain
  - Reduce your speed in wet conditions
  - Avoid puddles and standing water
  - Stay calm if the vehicle begins to hydroplane
  - Give extra space between vehicles
  - Avoid distractions – concentrate on the feel and the sounds of the vehicle
  - Do not tailgate – consider following in the tracks of a preceding vehicle

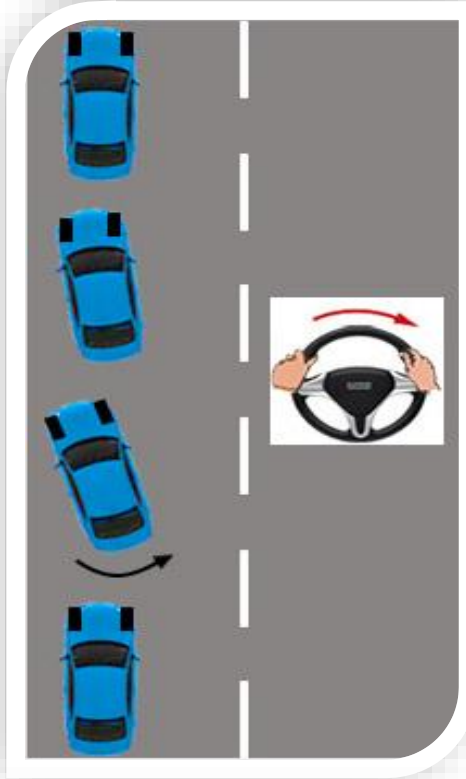
Impact of Improperly Inflated Tires on Hydroplaning

- Under inflated tires do not effectively push away water

- Over inflated tires do not provide maximum traction or “grip”

How to Recover from Hydroplaning

- If a vehicle is sliding, skidding and/or fishtailing, take your foot off the accelerator – do not hit the brakes. The sudden application of brakes can lock the wheels, contributing to the slide, and loss of control. As the tires slow down, traction should return.
- Do not make sudden moves with the steering wheel (if already in control) – do not try to swerve to see if you are hydroplaning – it might not end well.
- If in a slide, allow the vehicle to slow down to get traction and make gradual moves instead of sharp, sudden movements.
- You have a much higher chance of recovering from hydroplaning if you stay calm and make the right moves.



EXAMPLE: if the rear end of the vehicle slides to the RIGHT, steer quickly and smoothly to the RIGHT. This is known as "turning into the slide."

Summary

- Hydroplaning can occur on any wet road surface; however, the first 10 minutes of a light rain can be the most dangerous.
- It is said that it only takes water as deep as a nickel to be at risk. That means only one-twelfth of an inch of water is needed to cause hydroplaning.
- Car and truck tires are designed to push away rain, snow, and mud, but sometimes a tire may come upon more water than it can displace.
- A tire with adequate tread depth will always resist hydroplaning better than one that's worn out.
- Best way to deal with hydroplaning is to avoid it:
  - Slow down on slippery roads & leave extra space between vehicles.
  - Slow down before driving across large puddles.
- Whether you're on a straight or curved road, you have a much higher chance of regaining traction if you stay calm and make the right moves.