

Prevention of Accidents due to Overheated or Burning Tyres



Transport vehicle tyre fires mainly occur when travelling on highways, but can also break out when parked after travelling.

1. Causes of tyre fires

There are various causes for the overheating and ignition of a tyre, including:

- badly adjusted or badly maintained brakes,
- poorly maintained, or failure of axle component(s),
- use of non-original equipment manufacturer (OEM) or approved replacement parts or components,
- overloading of the vehicle,
- inadequate inflation of the tyres,
- loss of inflation of the tyre whilst travelling,
- overloading of one twin tyre when the other deflates,
- excessive use of the brakes,
- tyres in bad condition.

In some cases, a fire can occur after stopping because there is no longer any cooling effect from air flow during travelling.

2. What to do in case of an overheating or burning tyre?

A major hazard of an overheated tyre is the risk of bursting without warning. If there is still air pressure in the tyre this can lead to a dangerous blast effect and possible projection of pieces of the tyre, which can result in serious injury and/or damage to the vehicle. An additional hazard is the release of toxic fumes from burning materials.

A tyre, which was thought to be extinguished, can easily reignite, particularly if the source of heat is still present, for example an overheated brake drum or hub.

The first action should always be to call the fire service which will take appropriate actions including water spray to cool the tyre, wheel and surrounding areas until completely safe.

The risk of a tyre bursting should be considered before using a fire extinguisher. The use of dry powder extinguishers can be ineffective as it does not provide an adequate source of cooling.

Note: Particular caution is necessary in the case of twin tyres as a burning tyre can heat a nearby tyre sufficiently to also catch fire and burst.

If signs of overheating are detected, for example smoke or glowing hub, or if flames break out, the driver should:

- if the vehicle is moving, stop in a safe area as soon as possible, ideally away from other vehicles, any pedestrians, residential areas, flammable materials,
- call, or get someone else to call, the fire service,
- keep people away,
- consider the use of the vehicle fire extinguishers,
- stay clear of the area of the hazard from a bursting tyre,
- only detach the motive unit if it is safe to do so,
- only work on the tyre or wheel assembly once it has completely cooled.

Note: Do not replace the tyre or wheel and continue transport unless the extent of the damage has been assessed and the root cause of the fire has been identified.

3. Prevention

- Use tyres of a type and size suitable for the vehicle.
- Inflate tyres to the right pressure for the load being carried, ideally when cold.
- Consider use of tyre pressure monitoring systems.
- Regularly check the tyre pressure when cold and condition of tyres.
- Regularly check that all of the wheel nuts are correctly fitted, and to the correct torque, especially after doing any work on the wheel.
- Maintain brakes and axle components as a minimum in accordance with manufacturers' recommendations and consider periodic replacement.
- Use only OEM / approved replacement parts and components.
- Train drivers to maximise safe use of secondary braking systems to avoid overheating of the primary braking systems.

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