

## Risks of tunnel fires

In general, road tunnels are safer than open roads, but should an incident occur the severity of injuries is significantly higher. Compared to incidents on the open road, the probability of sustaining fatal injuries in an accident is about twice as high in road tunnels. Main reason being the high proportion of collisions in tunnels with bidirectional traffic.<sup>1</sup>

Lorries catch fire approximately twice as often as passenger vehicles.

With increasing traffic, the number of vehicle fires increases. On average, lorries catch fire 1.5 to 2.5 times more often than passenger vehicles.<sup>2</sup>

According to newspaper reports published in the German speaking area between the years 2012 and 2013, headline-making car fires in tunnels appear at least once a month. Therefore, car fires in tunnels are quite rare, compared to other fires.

### Smoke, the greatest hazard of all

Whilst on an open road, smoke can escape upwards unhindered due to its thermal lift, inside tunnels it is redirected horizontally. Depending on the ventilation, people inside the tunnel have a maximum of 5 to 10 minutes to escape into shelters or emergency tunnels.<sup>3</sup> The number of people affected depends on the specific conditions, such as traffic density or type of vehicles involved. In the Montblanc road tunnel fire (F/I) in 1999, 39 People lost their lives.<sup>4</sup> If there are any coaches involved in such an incident, casualties can easily be much higher.

1 cf. Robatsch/Nussbaumer, 2005, pp. 4–11.

2 cf. Schneider/Horvath, 2006, p. 29.

3 cf. Schneider/Horvath, 2006, pp. 46–56.

4 cf. Kim et al., 2010, p. 24.



*The International Fire Academy conducts their own fire tests for a better understanding of the risks in tunnel fires.*