

Press Release

Findings from the DEKRA Road Safety Report 2024

Rigid bollards on cycle paths pose a high risk of accidents

- ▶ DEKRA cargo bike crash highlights the advantages of flexible poles
- ▶ Infrastructure-related factors often relevant in cycling accidents
- ▶ Cycle and footpaths should be free of obstacles

Traffic light or light poles, traffic signs or bollards – they all often have an important function on roads and in their surrounding space. “At the same time, however, they can present obstacles that cause accidents or worsen the consequences of accidents”, warns DEKRA accident researcher Markus Egelhaaf. For the DEKRA Road Safety Report 2024, “Traffic Environments for People”, a cargo bike underwent two crash tests, one against a flexible post and the other against a rigid one. The effects could hardly have been more different.

In recent years, traffic spaces have increasingly been converted to facilitate active forms of mobility. In addition to purely visual markings, such as cycle or footpaths, bollards are also being used more frequently. This ensures that the assignment is recognizable in all weather conditions and effectively prevents the misuse of the infrastructure for parking or as an alternative route, thus protecting the actual user group. Posts are also used to create a visual barrier at intersections and junctions or to prevent cars from entering cycle or footpaths, for example. However, such bollards can have serious consequences if hit, especially with a bicycle.

To visualize the risks posed to cyclists by rigid bollards, DEKRA conducted a crash test with a cargo bike. An identical test was also carried out in the same configuration against a flexible plastic post. A three-wheeled e-cargo bike was used, with a collision speed of 25 km/h. In the test against the rigid post, there was a strong deceleration that threw the dummy from the saddle towards the handlebars. The bollard buckled and then acted as a ramp. The rear of the bike was lifted up, throwing the dummy off and causing the bike to tip over. “In a real-life situation, the person riding the bike would have suffered serious injuries,” says DEKRA accident researcher Egelhaaf.

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In the test with the flexible post, the bike simply rolled over it, the post then stood up again. There was no significant deceleration, and the dummy remained on the saddle. The driving situation remained controllable. “Another advantage of flexible bollards is that, in the event of a collision with a motor vehicle, both the damage to the infrastructure and to the impacting vehicle are kept to a minimum”, says the DEKRA expert. Users of other vehicles such as bicycles, e-scooters, etc., are also better protected.

Serious consequences of accidents due to road equipment

In its 2017 Road Safety Report, DEKRA already used a crash test to impressively demonstrate how dangerous impacts against rigid posts of curve guide signs can be for falling motorcycle passengers. Replacing the steel construction with a plastic stand significantly reduced the risk of injury. “But even at the comparatively low speeds of pedestrians and cyclists, rigid objects can act as a dangerous obstacle. This is something we see time and again in accidents”, says the DEKRA expert.

In his opinion, the authorities responsible for roads and paths often do not place enough emphasis on keeping the paths themselves clear. For example, money is saved on the longer boom that would otherwise be required by using a traffic light pole in the middle of the footpath and cycle path, or temporary construction site signage is often placed on the footpath to avoid traffic light regulations or detours. “The resulting danger is all too often simply accepted – for example, for people in wheelchairs or with walkers, for the visually impaired, for people with prams or for children on bicycles: they have to move onto the road because of the narrow point, for example, and often in areas without a lowered curb”, the accident researcher criticizes.

The number of accidents could increase

Older studies from the Netherlands make it clear that collisions with posts and elements used to narrow the roadway play a significant role in bicycle accidents. The results of studies by the Ministry of Infrastructure and the Environment in collaboration with the Consumer and Safety Foundation show that about half of all bicycle accidents are partly caused by one or more infrastructure-related factors. According to a study published in 2008, posts and similar elements accounted for 12 percent of these accidents even then.

“Due to the increasing speed of bicycles and greater width of cargo bikes, we have to expect that such accidents will happen more often”, predicts Markus Egelhaaf. The demands of various organizations for the protection of cyclists’ interests to completely

dispense with bollards are therefore understandable at first. However, there are also situations in which their use, when considered holistically, does bring safety benefits. “In such cases, however, it is important to ensure that the bollards can be easily seen in all light and weather conditions by using appropriate coloring and a suitable minimum height”, says the DEKRA accident researcher. In addition, the use of flexible bollards should be considered and, where possible, implemented.

Further background information on this topic, as well as many other aspects of “Traffic Environments for People”, can be found in the DEKRA Road Safety Report 2024. It is available at www.dekra-roadsafety.com.

Picture Caption:

At the DEKRA Crash Test Center (Neumünster, Germany), a three-wheeled cargo bike is driven into a rigid pole at 25 km/h. In a real-life driving situation, the consequences for the passenger would have been serious injuries. In a comparative test with a flexible post, the driving condition remained easily controllable.

About DEKRA

DEKRA was originally founded in 1925 to ensure road safety through vehicle inspection. With a much wider scope today, DEKRA is the world's largest independent non-listed expert organization in the testing, inspection, and certification sector. As a global provider of comprehensive services and solutions, we help our customers improve their safety, security, and sustainability outcomes. In 2023, DEKRA generated revenue of EUR 4.1 billion. The company currently employs around 49,000 people who offer qualified and independent expert services in approximately 60 countries on five continents. With a platinum rating from EcoVadis, DEKRA is now in the top one percent of sustainable businesses ranked.