# Highly durable rubber safety profiles for rail-based traffic systems such as tram lines which make cycling safer in inner cities by closing gaps to prevent bike accidents

## Summary

| Profile type | Company's country | POD reference |
|---|---|---|
| **Technology offer** | **Germany** | **TODE20230815001** |
| **Profile status** | **Type of partnership** | **Targeted countries** |
| **PUBLISHED** | **Commercial agreement with technical assistance** | **• World** |
| **Contact Person** | **Term of validity** | **Last update** |
| **Rita ELSTE - TOMSONE** | **15 Aug 2023**<br>**14 Aug 2024** | **15 Aug 2023** |

## General Information

Short summary

A medium-sized German company specialized in rubber-based extrusion products has developed a new safety system for rail-based traffic systems. The cost-efficient and highly durable bike-safe rail tracks are applied in rail covers and rail crossings in inner cities with high rail and bike traffic, thus preventing bike accidents and making cycling safer. Seeking companies and public authorities with interest in traffic engineering and planning for commercial agreements with technical assistance

Full description

Cycle and e-bike traffic increase in city centres worldwide. This requires new concepts and technologies of traffic infrastructures, especially in the field of public city traffic. Since in bigger cities railway and tram lines are often crossing streets and bike lanes many dangerous situations or even accidents occur. In this context, particular risks emanate from grooved tram rails, because bicycle tires can slip into and get stuck in those grooves. Severe injuries are often the result of such bike accidents.
The newly developed rubber-made rail tracks from the german company are an ideal solution for closing the gaps in such traffic areas and thus make cycling in cities safer. The novel solution consists of a special rubber profile filling out space within the structure of the rail tracks. This allows cyclists to safely ride over them while the flanged wheels of trains or trams solidify the rubber profile in the tracks allowing the railed vehicles to easily roll on. Thanks to its

elastic properties the profile returns to its original shape the instant the applying pressure of the passing trains/trams is lifted, refilling the space in the tracks.

Design:
- Small components are arranged within conventional rail track channels
- The fastenings for the elastomer profile are outside of the operational field
- The included draining channel allows for complete rinsing of the system. Thus dust, stones or other particles and foreign bodies do not accumulate in the groove.

Assembly position:
- Suitable for assembly into track bends with the smallest of radii
- Suitable for assembly into track switches (branch tracks) and into extension devices

Certifications / licences:
- Elastomer compliant with DIN EN ISO 5470-2 (abrasion resistance)
- Crate construction is compliant with DIN EN 1433, load class D400
- Track guidance certification
- Stray current insulation as per DIN EN 50122

The product significantly contributes to accident prevention involving cyclists or pedestrians and thus ensures the health and safety of citizens. As a consequence, the overall acceptance of rail-dependent local public transport services improves considerably.

Seeking companies of any size with interest in business fields related to traffic consulting, planning, engineering and implementation. Furthermore, public transportation companies, traffic infrastructure authorities, decision-makers of transport service operators and relevant approval authorities are sought, mainly for commercial agreements with technical assistance. Generation of new projects is also welcome.

Advantages and innovations

Main advantages:
- Protection of bicyclist by avoiding wheel seizing in the rail groove
- Reduction of slip danger on wet rails (rainy weather)
- High protection of pedestrians by avoidance of twisting an ankle in the rail groove

Significant improvements in safety and function:
- The track system forms a completely closed surface to allow cyclists and pedestrians to cross safely.
- It provides additional capacity used to ensure the removal of foreign bodies (e.g.) which otherwise become lodged in the tracks.

Highly cost-efficient thanks to standard components:
- Conventional rolled profiles can be used as tracks with the new system.
- Usage of standard mounting possible (corrugated panel & rail clamp)

Low efforts for maintenance and servicing:
- The system allows for quick and easy rail replacement without the need for complex construction work.
- It is possible to machine clean the system by unscrewing the cover plates.
- The rails can be repaired using a simple reprofiling/welding process.

Technical specification or expertise sought

Stage of development

**Already on the market**

IPR Status

**IPR granted**

Sustainable Development goals

**• Goal 3: Good Health and Well-being**

## Partner Sought

Expected role of the partner

Companies of any size:
- Decision-makers/transport service operators
- Public and approval authorities

Seeking partners for commercial agreements with technical assistance:
- Companies of any size with interest in business fields related to traffic consulting, planning, engineering and implementation of traffic projects: to test, adapt and apply the new solution in inner cities
- Decision-makers at local transport service operators: to  jointly adapt the solution to end-user requirements

- Public traffic infrastructure authorities and relevant approval authorities: to verify the proof of concept for the relevant city/area or local traffic requirements.

Activities to be performed:
- Cooperation in order to jointly plan and implement tramway tracks that are safe for bicycles and pedestrians
- Generation of new projects in the related fields is also welcome.

Type of partnership

**Commercial agreement with technical assistance**

Type and size of the partner

- **SME <=10**
- **SME 50 - 249**
- **SME 11-49**
- **Big company**
- **R&D Institution**
- **University**
- **Other**

## Dissemination

Technology keywords

- **03004008 - Plastics and Rubber related to Chemical Technology**
- **02002014 - Extrusion**
- **02007016 - Rubber**

Market keywords

- **09007004 - Engineering and consulting services related to construction**
- **08003007 - Other industrial equipment and machinery**
- **09001007 - Other transportation**
- **09003001 - Engineering services**

Targeted countries

- **World**

Sector groups involved

- **Mobility - Transport - Automotive**

## Media

Images

Solution for tram lines in cities.jpg