

Germany's eKFV regulation

ETSC - Improving the road safety of e-scooters

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Germany's PLEV[®] regulation (eKFV) in a nutshell

eKFV = Elektrokleinstfahrzeuge-Verordnung

- regulation (EU) No. 168/2013 (for category L vehicles) excludes most PLEV
- 15 June 2019: National Regulation went into force
- scope
 - technical requirements for PLEV
 - authorization to ride
 - permitted traffic spaces
 - driving dynamic requirements



1) PLEV = Personal Light Electric Vehicles



Definition of PLEV

PLEV according to Germany's eKFV Regulation

- vehicles with battery electric powertrain
- very small and lightweight vehicles (max. WxHxL: 70x140x200 cm max. empty weight : 55 kg)
- vehicles without a seat or self-balancing
- maximum design speed 6 20 kph
- handlebar mandatory



new national vehicle category

Technical requirements for PLEV (1)

- a national general type approval or individual type approval
- valid insurance sticker (5,3 x 6,5 cm)
- lighting and light signalling devices
- two independent brakes, minimum deceleration rate of 3,5 m/s²
- bell
- vehicle identification number
- manufacturer's plate
- power limitation to 500 W (1,400 W for self-balancing vehicles)









Technical requirements for PLEV (2)

electromagnetic compatibility according to UN/ECE Regulation No 10

anti-tampering measures according to DIN EN 15194:2018-11

batteries safety requirements according to Chapter 4.2.3 of DIN EN 15194:2018-11





Authorization to ride

- minimum age: 14 years
- no driver's license required
- one person driving and no other passenger
- no trailer allowed
- alcohol limit as for other motorized vehicle drivers
- wearing a helmet is not mandatory, but recommended



Permitted traffic spaces

- within built-up areas
 - PLEV must be driven on the cycle path, if available
 - otherwise on the carriageways or in traffic-calmed areas
 - exception from those traffic spaces according to sign "PLEV frei"
- outside built-up areas
 - same as within built-up areas
 - additional on the hard shoulder of the road



frei





Driving dynamic requirements for PLEV (1)

- driving dynamic tests for minimum road safety standards
- test speed: maximum design speed and 8 ± 2 kph
- driving over kerb profile at an angle of 90 and 45 degrees
- vehicle must be controllable at all times
- deviation from path maximum 20 degree







Driving dynamic requirements for PLEV (2)

4 different setups for driving dynamic tests





Germany's PLEV regulation (eKFV)

Downloads

PLEV regulation (eKFV) (in German)

PLEV – Questions and Answers (in English)







Scientific monitoring and evaluation

Scope

- in-depth analysis of crash causes and injury patterns
- potential for conflict with other road users, in particular children, mobility-impaired persons and senior citizens
- questions on traffic flow
- user behavior and user characteristics
- personal protective equipment
- report available for download (in German only)





Scientific monitoring and evaluation

Results

- accident risks:
 - driving over curbs, driving on slippery wet or uneven roads
 - display of changes in direction of travel (driving the vehicle with one hand)
- most frequently documented major accident was loss of control accident
- conflict situations between PLEV users and drivers of passenger cars, cyclists or pedestrians



Novell of Germany's PLEV regulation (eKFV)

Outlook -> just a draft

- adaption to the regulations for bicycle traffic
 - traffic space
 - rules of conduct / signs
- technical requirements
 - turn indicator
 - safety requirements for batteries in accordance with DIN EN 17128



FAQ Novell



Novell draft



Thank you!

I look forward to the joint discussion.

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