ALEE INFORMATION SHEET No. 01/2026

BICYCLE LIGHTING DEVICES

Lighting devices on bicycles

How to obtain german type approval according to §22a StVZO

KBA
Benannter TD
KBA-P 00125

ALEE

Stand 4/2026

Lighting devices on bicycles

Bicycles and bicycle trailers used on public roads in Germany must be equipped with approved lighting equipment. **ALEE – Alliance des laboratoires d'essai européenne GmbH** – is a technical service designated by the Federal Motor Transport Authority (KBA) that specialises in testing these components and supports manufacturers in obtaining type approval in accordance with Section 22a of the Road Traffic Licensing Regulations (StVZO).

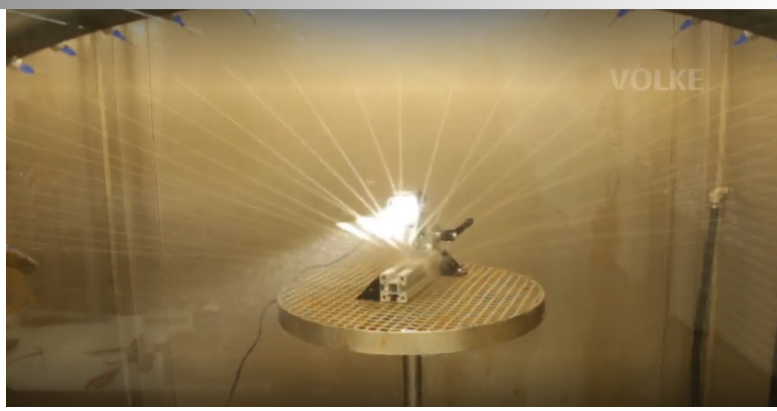
Technical requirements at a glance

The technical requirements do **not arise directly from the StVZO**, but from the so-called **Technical Requirements (TA)** for vehicle parts. Depending on the lighting equipment, the following TA apply:

- **TA 14b** rear position lamps
- **TA 18** retro reflectors
- **TA 18a** for reflective strips on bicycle tyres
- **TA 23** headlamps
- **TA 24** for bicycle generators

The current requirements can be found in the regulatory portal: *Technical Regulation Information System Notification (Germany)*

Type-approved parts must be marked with the approval mark in accordance with the Fahrzeug-Teileverordnung (FzTV) – e.g. ∿∿K 1234.



Other requirements for bicycle lighting in Germany

- Headlamps may also be equipped with a daytime running light and/or high beam function. The requirements are based on therelevant Technical Requirements (TAs), including UN/ECE Regulations No. 87 or 148 and the light intensities according to ISO6742-1:2015, Section 4.6.
- Rear position lamps may also have a brake light function with red light in accordance with UN/ECE Regulation No. 50.
- Flashing headlamps or rear position lamps are not permitted.
- Forward and rear direction indicators (categories 11 and 12) must be approved in accordance with UN/ECE Regulation No. 50 or No. 148 and installed in accordance with UN/ECE Regulation No. 74. The controls must comply with the requirements of UN/ECE Regulation No. 60.

New since the end of 2024: Extended requirements

With the latest revision of the Technical Requirements (TA), additional environmental simulation tests have become mandatory for the type approval of bicycle headlights and rear lights.
Lamps that have already been approved and are on the market must be supplemented with proof of passing environmental simulation tests in the coming years in order for their type approvals to remain valid.

Lamp type	IP protection rating test (IEC 60529)	Corrosion test (ISO 9227)
Lamps for rechargeable/ battery operation	**IPX4:** Splash water from all directions when switched on. ✅ Passed if the lamp continues to function.	**96 hours salt spray test (5 % NaCl)** ✅ Passed if no functionally relevant corrosion occurs.
Lamps for dynamo operation	**IPX3:** Spray water at a defined pressure and angle when switched on. ✅ Passed if the lamp continues to function.	

Note: The IPX tests simulate **use in rain and humidity.** The light must be **switched on** during the test and must then **function properly**.
The **salt spray test** is **mandatory** if there is a **risk of corrosion** with the materials used, as functional impairment cannot be ruled out.

Further extended requirements and clarifications

In addition to the environmental simulation tests described above, the revision of the Technical Requirements (TA) also results in other important changes:

- The previously permitted short-term signalling is completely eliminated. If a tail lamp has a corresponding function, a full-fledged brake lamp function must now be demonstrated for it. Activation by sensors is now more strictly regulated.

Light values: Reference to ISO 6742-1:2015; minimal adjustments to the permissible values.
Daytime running lamp and high beam functions: Requirements are based on the current UN/ECE regulations (87, 148) and the values from the TAs.
Batteries/rechargeable batteries: Requirements for capacity, protection and design have been adjusted.

- All products that have already been approved must be checked for compliance with the new technical requirements.
- If the existing test report does not cover the new requirements, a complete re-test is necessary.

Note: Manufacturers should check their lamps and systems and, if necessary, adapt them to ensure compliance with the current TAs and standards.

Type testing in partner laboratories

ALEE works closely with specialised partner laboratories for the type testing of lighting devices for bicycles:

- Photometrik GmbH: Performance of photometric tests (e.g. luminous intensities, lamp functions)
- VOLKE Entwicklungsring SE and imat-uve GmbH: Performance of environmental simulation tests (e.g. protection against water ingress, corrosion)

This division of labour ensures that all tests are carried out in accordance with standards, reliably and completely.

Why the initial manufacturer assessment is crucial

Before a manufacturer can even participate in an approval procedure, it must successfully complete a so-called **manufacturer's initial assessment** by the KBA. The aim of this assessment is to ensure that the manufacturer has a functioning quality management system and complies with the legal requirements on a permanent basis.
For this purpose, the KBA has published an **information sheet on initial assessment**, which describes the requirements and the forms to be submitted in detail. Please also refer to our ALEE information sheet.

Step by step to approval with ALEE

With our many years of experience in testing lighting equipment and our close cooperation with a certification body for management systems (technical service of catego C) aprypointed by the KBA, we accompany you from the initial consultation to full German type approval authority Kraftfahrt-Bundesamt (KBA) – including tests, audit support and assistance with documentation.

Would you like to have your bicycle devices approved or do you need assistance in getting started with the process?
The experts at ALEE will reliably accompany you – from the initial test to successful type approval. Contact us!

What ALEE does for you:

- **Testing of your lighting equipment** in accordance with the relevant technical requirements:
  - TA 14b (rear positions lamps)
  - TA 18 (retro reflectors)
  - TA 23 (headlamps)
  - UN/ECE Regulation 50 brake lamp function
  - UN/ECE Regulation No. 87 for day time running lamp function
  - UN/ECE Regulation 148 for direction indicators of categories 11 and 12
- **Environmental simulation tests**
  - IP protection class test
  - Corrosion test in salt spray test
- **Preparation of the test report** as a basis for type approval by the Kraftfahrt-Bundesamt (KBA)
- **Support during the initial manufacturer assessment**, including preparation for the audit and review of QM documentation
- **Cooperation with a certification body designated by the KBA for management systems (category C technical service)** to ensure a seamless process for meeting legal requirements

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