

E-bikes and e-scooters

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In this guide, the words 'must' or 'must not' are used where there is a legal requirement to do (or not do) something. The word 'should' is used where there is established legal guidance or best practice that is likely to help you avoid breaking the law.

This guidance is for England, Scotland and Wales

E-bikes and e-scooters have become increasingly popular in recent years as a means of transport. They are also known as PLEVs (personal light electric vehicles) and that term is used in this guide to refer to both e-bikes and e-scooters.

When assessing the safety of a PLEV, a number of matters are taken into consideration and anyone in the supply chain can be held liable for the supply of unsafe products.

The legal term for an e-bike is an electrically assisted pedal cycle (EAPC). Electric-powered bikes that do not conform to the [EAPC rules](#) are classed as motorcycles or mopeds, which are not covered here.

The legal framework

E-bikes

E-bikes are vehicles that are essentially cycles with two or more wheels and the following definitions:

- cycle must be fitted with pedals that are capable of propelling it
- continuous rated power of the electric motor must not exceed 250 W
- electrical assistance must cut off when the cycle reaches 15.5 mph or 25 km/h

Under the Electrically Assisted Pedal Cycles Regulations 1983, an e-bike that complies with the above is not considered to be a motor vehicle within the meaning of the Road Traffic Act 1988. As a result, it is not required to be registered and is not subject to vehicle excise duty (road tax), nor does it have to be insured as a motor vehicle. E-bikes must not be ridden by anyone under the age of 14.

E-scooters

E-scooters fall within the definition of 'power transporters'. As such, privately owned e-scooters are not currently legal for use on roads or other public highways. E-scooters that are part of a public rental scheme may be used on the road.

Product safety

The law requires that any product sold to consumers must be safe. Products must not present any unnecessary risk to anyone when used in a normal or reasonably foreseeable way. When assessing the safety of a product, the following must be taken into account:

- packaging, labelling and instructions
- effect of the product on other products with which it might be used
- special needs of particular types of people, such as elderly people or those with disabilities

PLEVs are classed as machinery under the Supply of Machinery (Safety) Regulations 2008 and therefore have to comply with the basic health and safety requirements as set out in these Regulations. One way to show compliance is to manufacture the PLEV in accordance with a designated standard*. This will offer a presumption of conformity with the Regulations.

[*'Designated standards' are those approved by the Secretary of State and published by the British Standards Institution (BSI).]

Manufacturers, their representatives, and importers have to ensure that, when their cycles, scooters, systems, components or separate technical components are placed on the market or are entering into service, they are manufactured and approved in accordance with the requirements set out in the Regulations.

Manufacturers are required to equip PLEVs with battery management systems / master control devices that prevent tampering or modification, so as not to prejudice safety by enabling the capability to increase torque, power or maximum speed limits.

Anyone in the supply chain, including retailers, can be held liable for the supply of unsafe products. In general, it is a criminal offence to supply unsafe products and you could also be liable to pay compensation for any injury or property-damage caused.

You should be prepared to carry out checks on the product and/or on your suppliers to ensure that they meet the appropriate product safety requirements. Doing nothing is not enough.

BSI has produced [PAS 7050: Bringing safe products to the market. Code of practice](#), which can be downloaded for free from the BSI website. For more information on PAS 7050, see Business Companion's Business in Focus guide '[Providing safe products for the UK \(PAS 7050\)](#)'.

You have obligations under the General Product Safety Regulations 2005 if an incident arises that requires corrective action, such as a recall. Guidance to assist with putting together a product safety incident plan (PSIP) can be found in [PAS 7100: Product recall and other corrective actions. Code of practice](#), which can also be downloaded for free from the BSI website.

The current designated standards are as follows:

- e-bikes:
 - BS EN 15194: *Cycles. Electrically power assisted cycles. EPAC Bicycles*
- e -scooters:
 - BS EN 17128: *Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use. Personal light electric vehicles (PLEV)*

These standards are designated to provide a presumption of conformity with the Supply of Machinery (Safety) Regulations 2008.

As well as strength tests, BS EN 15194 requires safety measures that relate to the general safety of e-bikes, including:

- sharp edges
- security and strength of safety-related fasteners
- protrusions
- brakes
- steering
- frames
- front fork
- wheels and wheel / tyre assembly
- rims, tyres and tubes
- front mudguard
- pedals and pedal / crank drive system
- drive-chain and drive belt
- chain-wheel and belt-drive protective device
- saddles and seat-posts
- spoke protector
- luggage carriers
- road-test of a fully-assembled e-bike
- lighting systems and reflectors
- warning device
- thermal hazards

The standards for braking systems are contained in paragraph 4.6.8 of BS EN ISO 4210-2: *Cycles. Safety requirements for bicycles. Part 2: Requirements for city and trekking, young adult, mountain and racing*

bicycles.

BS EN 17128 has requirements for the following safety attributes for e-scooters:

- classes of vehicles
- general safety requirements and protective measures
- electrical components
- driving power management
- speed limitation
- electromagnetic compatibility
- charging of batteries
- energy storage within the vehicle
- structural integrity
- edges and protrusions
- moving parts
- adequate stability
- presence awareness
- hot surfaces
- markings and instructions for use

Electrical compliance

The battery and charger for the product must be compatible to meet safety requirements. The battery must meet the appropriate standards for batteries and the charger must be both compatible with the battery and meet the standard BS EN 60335-2-29: *Household and similar electrical appliances. Safety. Particular requirements for battery chargers.*

If battery chargers are to be supplied separately, they must have sufficient information on them to comply with the Electrical Equipment (Safety) Regulations 2016, including:

- the GB manufacturer's and importer's name or trade name and their address
- an indication of the input and output ratings
- the type of insulation used
- a batch code
- any other instructions and warnings as appropriate

Other requirements:

- PLEVs and their battery packs must be designed in order to avoid risk of fire and mechanical deterioration resulting from abnormal use
- during testing, the PLEV and the batteries must not emit flames, molten metal or poisonous ignitable gas in hazardous amounts, and any enclosure must show no damage that could impair compliance with the standard
- safety and compatibility of the battery / charger combination must be ensured, according to the manufacturer's specifications
- the battery terminals must be protected against creating an accidental short circuit
- appropriate care must be taken to ensure that the batteries are protected against overcharging
- an appropriate overheating and short-circuit protection device must be fitted

For more information, see the [statutory guidelines on lithium-ion battery safety for e-bikes](#) published by the Department for Business and Trade (DBT).

Labelling requirements, instructions and warnings

PLEVs are required to be labelled with:

- contact details and GB address of the manufacturer or authorised representative
- BS EN 15194 for the e-bike or BS EN 17128 for the e-scooter
- appropriate marking required by legislation (CE and/or UKCA - see below)
- year of construction - that is, the year in which the manufacturing was completed
- cut-off speed, expressed as XX km/h
- maximum continuous rated power, expressed as XX kW
- maximum permissible total weight
- designation of series or type
- individual serial number, if any

There are also recommendations for safety-critical components to be marked with traceable identification. You should seek the advice of your local Trading Standards service if you need more information.

All markings must be clear and permanent in accordance with specifications set out in the standards.

As well as labelling requirements, PLEVs must be supplied with a set of instructions for use in Great Britain (GB: England, Scotland and Wales). The standards state that it is obligatory to deliver these in paper form, along with more detailed information to enable access for vulnerable people. Instructions for use should be available additionally in electronic form on demand. The standard also stipulates that the instructions for use cover all aspects of the safe use of the PLEV.

These will include the type of personal protective equipment that may be appropriate, appropriate age markings, the maximum carriage weight and any instructions for assembly and/or use of any folding mechanism, charging the batteries, and safe riding, as well as warnings related to wear-and-tear and impact damage. The instructions also need to include any warnings against the dangers of misuse.

Technical documentation

Manufacturers must draw up technical documentation that clearly identifies how the PLEV complies with the Electrical Equipment (Safety) Regulations 2016. If anyone in the supply chain modifies a PLEV, they become a manufacturer of a modified vehicle; they take on the manufacturer's responsibility and need to ensure that the PLEV meets the approval and conformity necessary for any new intended use.

The technical construction file must contain:

- general description of the machinery
- drawings and calculations
- documentation on risk assessment demonstrating the procedure followed
- list of essential requirements that apply to the machinery and the standards used to assess compliance
- protective measures to eliminate identified hazards and to reduce risks
- any test results
- copy of instructions
- copies of declaration of conformity
- for factory-produced products, the internal measures that will be implemented to ensure that the machinery remains in conformity with the provisions of the Regulations

The Regulations also place an obligation on importers that place PLEVs on the market to:

- ensure that the technical documentation is compiled and made available in accordance with the requirements
- provide information as necessary to operate it safely, such as instructions for use, repair and maintenance
- follow appropriate conformity assessment procedures, as prescribed by the Regulations
- ensure that there is a declaration of conformity undertaken by the manufacturer

The declaration of conformity must accompany the PLEV throughout the supply chain and must contain the following:

- business name and full address (in GB) of the manufacturer and, where appropriate, the manufacturer's authorised representative
- name and address of the person authorised to compile the technical file, who must be established in GB
- description and identification of the machinery, including generic denomination, function, model, type, serial number and commercial name
- declaration that the machinery fulfils all the relevant provisions of the Regulations and where appropriate, other enactments and/or relevant provisions with which the machinery complies.
- where appropriate, the name, address and identification number of the approved body that carried out the type-examination and the number of the type-examination certificate
- name, address and identification number of the approved body that notified the full quality assurance system
- reference to the published designated standards used
- reference to other technical standards and specifications used
- place and date of the declaration
- identity and signature of the person empowered to draw up the declaration on behalf of the responsible person

CE / UKCA mark

The [CE](#) and/or [UKCA](#) mark is placed on a product by the manufacturer as confirmation that it complies with all the relevant safety standards. All machinery requires CE and/or UKCA marking in accordance with the Supply of Machinery (Safety) Regulations 2008 and (where relevant to electrical components such as chargers) the Electrical Equipment (Safety) Regulations 2016.

The position for retailers

Retailers may not have the same degree of technical knowledge and expertise as a manufacturer or importer. However, they may be able to carry out certain checks on the safety of PLEVs.

Retailers must ensure that the vehicle has undertaken any relevant conformity certification and has a 'declaration of conformity' certificate. They also need to ensure that each vehicle is marked visibly, legibly and indelibly with the following particulars:

- business name and full address of the manufacturer and, where applicable, the manufacturer's authorised representative in GB
- designation of the machinery, series and type
- serial number
- CE and/or UKCA mark
- year of construction
- any information that is essential for safe use, as per the manufacturer's responsibilities listed above

Retailers must ensure that each vehicle is supplied with adequate written instructions.

Instructions for maintenance are particularly important to pass on in written format, as they will be relied on for safe use for the entire expected life of the product. If there are parts of the instructions that have a particular relevance to safety, you may wish to highlight them.

You should also examine each vehicle before you supply it and carry out basic checks - for example:

- all fixings, nuts and bolts are correctly and securely fastened
- frame is not damaged
- condition and inflation of tyres
- brakes are working effectively
- no sharp edges and entrapment hazards
- ensure that the steering is aligned
- ensure that you can supply full instructions for use

You may wish to offer advice on the appropriate safety equipment that needs to be used with the PLEV - for example, a cycle helmet and suitable clothing.

If PLEVs are supplied with rechargeable batteries and chargers, the chargers must be compliant with the Electrical Equipment (Safety) Regulations 2016, as well as being compatible with the batteries. There are designated safety standards for both batteries and chargers.

Fire safety

The Office for Product Safety and Standards (OPSS) has produced [advice for businesses on the prevention of fires](#) caused by dangerous PLEVs, particularly related to repairing, modifying and converting them.

OPSS has also published independent [research on the safety of e-bike and e-scooter lithium-ion batteries, chargers and e-bike conversion kits](#).

Trading Standards

For more information on the work of Trading Standards services - and the possible consequences of not abiding by the law - please see '[Trading Standards: powers, enforcement and penalties](#)'.

In this update

The guides on e-bikes and e-scooters have been combined.

Last reviewed / updated: February 2025

Key legislation

- [Electrically Assisted Pedal Cycles Regulations 1983](#)
- [General Product Safety Regulations 2005](#)
- [Supply of Machinery \(Safety\) Regulations 2008](#)
- [Electrical Equipment \(Safety\) Regulations 2016](#)

Please note

This information is intended for guidance; only the courts can give an authoritative interpretation of the law.

The guide's 'Key legislation' links may only show the original version of the legislation, although some amending legislation is linked to separately where it is directly related to the content of a guide. Information on changes to legislation can be found by following the above links and clicking on the 'More Resources' tab.

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