



What Is an E-Bike? A Guide to California E-Bike Classifications.

August 24, 2023 / by Kevin Claxton

Note: This information was compiled in August of 2023. California laws and regulations are subject to change. Please consult the California Vehicle Code (CVC) sections [\[https://leginfo.legislature.ca.gov/faces/codesTOCS.tocCode=VEH&tocTitle=+Vehicle+Code+-+VEH\]](https://leginfo.legislature.ca.gov/faces/codesTOCS.tocCode=VEH&tocTitle=+Vehicle+Code+-+VEH) governing e-bikes for the most up-to-date information.

Some of the recent furor over the increased presence of e-bikes on California streets has centered on mobility devices sold as e-bikes that may push the boundaries of what counts as an electric bicycle in the state of California. So here's a look at e-bike classification, an

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emerging class of two-wheeled vehicles called ZEMs, and the gray area in between.

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E-bikes and the law

As legally defined vehicles, e-bikes are subject to several laws in California (and even some federal regulations as well). Under California law, an e-bike is essentially treated the same as a standard bicycle—with a few exceptions. E-bikes are to be operated like conventional bicycles in California and are not considered motor vehicles under the California Vehicle Code.

As such, e-bikes in California are exempted from various laws and requirements that apply to motorcycles and automobiles. For example, e-bike operators need not have or use:

- Operator's licenses
- State or local registration
- Motor vehicle insurance
- License plates

So what is an e-bike?

California's e-bike classifications

The California vehicle code

[https://leginfo.legislature.ca.gov/faces/codes_dispsectionNum=312.5.&lawCode=VEH] defines e-bikes as: “[A] bicycle equipped with fully

operable pedals and an electric motor of less than 750 watts.” It further breaks e-bikes into three categories, following a classification system created by PeopleForBikes that has been adopted in 40 states.

- **Class 1:** Provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches a speed of 20 mph
- **Class 2:** Operates via pedal-assist or throttle and ceases to provide assistance when the bicycle reaches a speed of 20 mph
- **Class 3:** Provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches a speed of 28 mph

Because there is some variation in e-bike classification from state to state, an e-bike manufacturer may not specify an e-bike's class on their website. You can determine the class by comparing the bike's specifications to the information above or asking at the bike shop where you buy your e-bike.

Who can operate an e-bike in California?

There are no age restrictions on Class 1 and 2 e-bikes. Riders must be at least 16 to operate a Class 3 e-bike

[https://leginfo.ca.gov/faces/codes_dispLawCode=VEH§ionNum=21213.&article=4.&highlightedSectionNum=21213], and all Class 3 riders must wear helmets. All

riders under 18 must wear a helmet on any type of bike, motorized or not.

Who can carry passengers on an e-bike?

All e-bikes set up to accommodate passengers are permitted to carry a passenger. Riders and passengers under 18 must wear a helmet. Passengers of all ages on Class 3 e-bikes must wear helmets.

Which e-bikes are pedal assist only?

Class 1 and Class 3 e-bikes provide a boost from the motor only when the rider pedals. If the rider stops pedaling, the motor cuts out and the bike loses momentum.

What's the top speed of a throttle e-bike?

Class 2 e-bikes, which have a throttle that allows the motor to power the bike without the rider pedaling, have a maximum motor speed of 20 mph.

Can e-bikes go faster than their assist limits?

E-bikes provide a boost up to their speed limits (20 and 28 mph). A rider may go faster than that by pedaling harder, but the motor

won't give any additional propulsion over those speeds.

What's a zero-emission motorcycle (ZEM)?

Electric motorcycles, classified as zero-emission motorcycles (ZEMs) by the California Air Resources Board (CARB), can include anything from a moped or motorized scooter to a full-sized motorcycle. A ZEM may have a powerful enough engine to travel at freeway speeds, but not all do.

Unlike e-bikes, ZEMs must be registered with the DMV and are not allowed to ride in bike lanes. ZEMs do not have pedals and operate solely on motor power.

CARB is working on creating incentives for ZEMs as part of California's transition to clean transportation.

Where can I ride?

The law

[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB1909]. prevents cities from restricting access to e-bike riders in places like bicycle paths or trails, bikeways, and bicycle lanes.

People may ride e-bikes on roadways but are subject to the California Vehicle Code (CVC)—which covers basic rules of the road, like going

with the flow of traffic and obeying lights and signs.

Local authorities could still block access to e-bikes on certain equestrian trails or hiking and recreational trails. The Department of Parks and Recreation may prohibit the operation of an electric bicycle or any class of electric bicycle on any bicycle path or trail within the department's jurisdiction.

Two-wheeled EVs in the gray area

Some electric, two-wheeled vehicles fall into a gray area between e-bikes and ZEMs. These bikes can be manufactured and sold in California but may not be street-legal under California e-bike regulations.

For example, at least one manufacturer markets their products as e-bikes but sells bikes with an “off-road” setting with a top speed listed as “28+ mph,” implying that the motor is capable of providing a boost above California's top e-bike speed of 28 mph. Another brand doesn't list the top speed or e-bike class on its website.

It's unclear whether bikes like these qualify as e-bikes under California law [https://leginfo.legislature.ca.gov/faces/codes_displaySectionNum=312.5.&lawCode=VEH], which states, in part: “On and after January 1, 2017, manufacturers and distributors of electric bicycles shall apply a label that is permanently affixed, in a prominent location, to each

electric bicycle. The label shall contain the classification number, top assisted speed, and motor wattage of the electric bicycle, and shall be printed in Arial font in at least 9-point type.”

It may not look like a bike

E-bikes evolved from traditional bikes, so many e-bikes resemble standard bikes modified to include a motor and battery. However, some new e-bike models are moving away from traditional bicycle design. They may have fat tires and frames that resemble small motorbikes more than standard bicycles. As long as they have operable pedals and fall within California’s e-bike classification system, these e-bikes are bicycles and may use bike lanes.

What is not an e-bike?

According to the California DMV [<https://www.dmv.ca.gov/portal/handbook/motorcycle-handbook/two-wheel-vehicle-operation/>], two categories of classification exist between e-bikes and motorcycles.

A motor-driven cycle is “a motorcycle with less than a 150 cc motor size.” These bikes are not allowed to operate on controlled-access freeways or highways.

A motorized bicycle or moped is “a two or three-wheeled device, capable of no more than 30 miles per hour (mph) on level ground.” The vehicle code further defines this type of

bike as “having fully operative pedals for propulsion by human power, or having no pedals if powered solely by electrical energy.” The DMV notes that these vehicles may use bike lanes, if authorized by local ordinance.

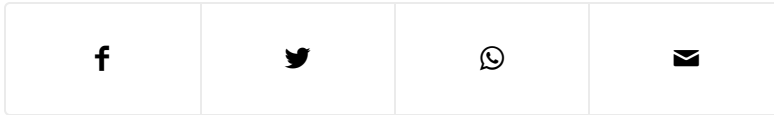
Both motor-driven cycles and mopeds must be registered with the DMV

[<https://www.dmv.ca.gov/portal/vehicle-registration/new-registration/motorcycles-mopeds-and-scooters/#:~:text=Also%20known%20as%20a%20m> (e-bikes are not required to register), and riders need a motorcycle license to operate them.

Some of the bikes that fall into the gray area may be more properly classified as mopeds or motorcycles (if their motors go faster than 30 mph) than e-bikes.

CalBike is committed to working on legislation to clarify the role and place of bikes in our communities. We also continue to advocate for more funding to build bikeways that are comfortable for all riders, on e-bikes or standard bikes. And, in the future, maybe we'll need to build bicycle fast lanes!

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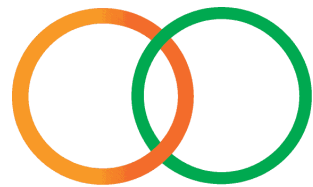
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