

# All Things Electric

## Laws for Operation



# E-Scooters

**407.5 (a) CVC - A “motorized scooter” is any two-wheeled device that has handlebars, has a floorboard that is designed to be stood upon when riding, and is powered by an electric motor, with/without a seat.**

## **21235 CVC -**

The operator of a motorized scooter shall not do any of the following:

- (a) Operate a motorized scooter unless it is equipped with a brake that will enable the operator to make a braked wheel skid on dry, level, clean pavement.
- (b) Operate a motorized scooter on a highway with a speed limit in excess of 25 miles per hour; **and cannot exceed 15 miles per hour.**
- (c) Operate a motorized scooter without wearing a properly fitted and fastened bicycle helmet that meets the standards described in Section 21212, if the operator is under 18 years of age.
- (d) Operate a motorized scooter without a valid driver's license or instruction permit.
- (e) Operate a motorized scooter with any passengers in addition to the operator.
- (f) Operate a motorized scooter carrying any package, bundle, or article that prevents the operator from keeping at least one hand upon the handlebars.
- (g) Operate a motorized scooter upon a sidewalk, except as may be necessary to enter or leave adjacent property.



# E-Bikes

## P q 'N e g p u g ' T g s w k t g f

**312.5 CVC** – defines an E-bike. An e-bike is a bicycle with **fully functional pedals** and an electric motor that's **less than 750 watts**. G/dkngu'o wuv'j cxg'c 'uvkengt'lf gpvh{lp i 'vj gkt"eruuuhlec vq p."qr "ur ggf ."cpf"o qvqt"y c wci g"cpf "uj cm'dg'r tlpgf 'lp"cv'lgc uv"; "hqpw0

If it has **350 watts or more** it is considered an e-Moto (see page ②)

- Eruuu'3 'G/Dkngu"ctg"uwdlgev'q "j g"hqmqy lpi <
  - Electric motor-assisted only when pedaling,
  - Maximum motor-assisted speed of **20 MPH**,
  - Must wear bicycle helmet, if under age 18,
  - Eligible for all classes of bikeways.
- Eruuu'4 'G/Dkngu"ctg"uwdlgev'q "j g"hqmqy lpi <
  - Electric motor-assisted by throttle or pedaling
  - Maximum motor-assisted speed of **20 MPH**,
  - Must wear bicycle helmet, if under age 18,
  - Eligible for all classes of bikeways.
- Eruuu'5 "gge v k e "d k e {engu"ctg"uwdlgev'q "j g"hqmqy lpi <
  - Electric motor-assisted only when pedaling,
  - Maximum motor-assisted speed of **28 MPH**,
  - Must be at least 16 years old
  - Bicycle helmet REQUIRED, all ages,
  - Eligible for Class 2, 3 and 4 bikeways only



- Bikeways Defined:

Class I Off-roadway bike paths or bike trails

Class II On-roadway, separated (striped) bike lanes

Class III On roadway, signed (but not separated) bike lanes – Sharrows

Class IV Separated Bikeway (New Esplanade)

**21212 (a) CVC –**

helmets required under 18 years old



*Class II Bike Lane*



*This is a sharrow*

*Class III Bike Lane*

# Motorized Bicycles / Mopeds

## 406 (a) CVC -

- A “motorized bicycle” or “moped” is a two-wheeled or three-wheeled device having fully operative pedals for propulsion by human power,
- or having no pedals if powered solely by electrical energy.
- Has a motor that produces less than 4 gross brake horsepower
- Has an automatic transmission
- Can reach a maximum speed of 30 miles per hour on level ground
- Generally older in style. They were built before E-bikes were popular
- Requires M2 license (at min.)

## To operate a motorized bicycle or moped in California, you must:

- Be at least 16 years old
- Have a driver's license with M-2 license at minimum, or a M-1 license
- Wear a DOT motorcycle helmet
- Pay a one-time \$23 registration fee
- Purchase special license plates and identification cards from the Department of Motor Vehicles (DMV)



Moped



Motorized Bicycle

# Motor-Driven Cycles

**405 CVC** – a motor-driven cycle is a motorcycle with a motor that displaces less than 149 cubic centimeters (cc). A motor-driven cycle does not include a motorized bicycle.

Motor-driven cycles are simply motorcycles with smaller engines which do not qualify as motorized bicycles. Most motor-driven cycles have gas-power engines, but an electric cycle with a top speed over 30 MPH and/or an engine that exceeds 750 watts (1 HP) would also be considered a motor-driven cycle.

Motor-driven cycles as described in VC 405 are subject to the following restrictions:

- Must have a valid driver's license with M1 endorsement
- Must be registered
- Must have minimum insurance
- Must display any issued license plate
- Must have current registration tabs and the operator must present registration paperwork
- The operator and any passenger must wear an approved motorcycle helmet (typically displaying a 'DOT' emblem).
- **Freeways and expressways: Not Permitted**

(A motorcycle is a cycle with a motor that displaces more than 150 cc).



# E-Moto

## (off-highway electric motorcycle)

**436.1 CVC** – An “off-highway electric motorcycle”, commonly referred to as a E-Moto. This is an off-highway motorcycle that meets the following:

- (a) Is designed by the manufacturer for operation off highway, (b) powered by electric motor / motor number not required, (c) has handlebars for steering control, d) has a seat provided by manufacturer and (e) has two-wheels / no pedals

**E-Moto Defined:** A two-wheeled electric motorbike that exceeds E-Bike capabilities (has pedals and more than 750 watts), or lacks operable pedals, or is not licensed as a motorcycle. (Ex: Sur-Ron, Talaria, Super73, Onyx RCR). Also required to follow OHV rules, including displaying a DMV-issued ID plate, placard, or green DMV sticker.

### **22651.08 CVC – Tow Authority –**

(a) May remove a vehicle under either of the following circumstances:

- (1) A person is operating a vehicle with less than 4 wheels that does not meet the definition of an E-bike and is both the following:
  - (A): Powered by an electric motor capable of exclusively propelling the vehicle in excess of 20 MPH
  - (B): Being operated by an operator who is not licensed to operate the vehicle.
- (2) A person is operating a class 3 electric bicycle in violation of 21213 (a) CVC.

(c) An agency shall release the vehicle to the owner after a **min. of 48 hours**, when made during normal business hours and if applicable fees are paid.



*4,000w Electric Cycle  
(Top speed 60-75 MPH)*



*7,200w Electric Cycle  
(Top speed 65-80 MPH)*

# Electronic Motorized Boards

**313.5 CVC** – defines an electric motorized board

Not considered a vehicle by definition but has to follow the rules of the road like a vehicle.

- Travel on proper side of roadway (VC 21650)
- Be 16 years of age or older (VC 21291)
- Wear a bicycle helmet (VC 21292)
- Use forward lighting equipment and side and rear reflectors during darkness (VC 21293)
- Only operate on highway with speed limit of less than 35 (VC 21294 (a), and cannot exceed 15 MPH (VC 21294(b)
- Only operate at a speed prudent for conditions [similar to VC 22350] (cite VC 21294(c)
- Not be under the influence of drugs or alcohol (VC 21296(a)



# M1 and M2 Licenses

**M1 license** allows you to operate any two-wheeled motorcycle, motorized scooter, or motor-driven cycle, as well as all vehicles listed under Class M2:

- **Motorcycle:** A motorized vehicle with a seat or saddle designed to travel on **not more than three wheels** in contact with the ground (3-wheeled vehicles are by definition a motorcycle and require a helmet, but not an M1 license in California. (Each state has their own laws regarding this)).
- **Motorized scooter:** A two-wheeled device with an electric motor, handlebars, and floorboards
- **Motor-driven cycle:** A motorcycle or bicycle with an output of 149 ccs or less
- **Motorized bicycle:** Also known as a moped, this is a two-wheeled vehicle with a gas motor no more than 2 gross brake horsepower or an electric motor

To get an M1 license, you must:

- Be at least 18 years old
- Complete a California Motorcyclist Safety Program (CMSP) approved rider training course
- Pass a written exam
- Pass a skills test, which includes a circle ride, slow ride, gear shift, tracking paths, and serpentine ride

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**M2 license** is a motorcycle license that specifically allows you to operate motorized bicycles and mopeds, which are defined as vehicles that cannot exceed a speed of 30 mph and must have fully operational pedals; essentially, it is a license for smaller, slower motorized bikes, unlike the broader "M1" license which allows for riding larger motorcycles.

Key points about an M2 license:

- **Vehicle types:** motorized bicycles and mopeds.
- **Speed limit:** These vehicles must not be able to go faster than 30 mph.
- **Pedal requirement:** The vehicle must have fully functional pedals.
- **Comparison to M1:** An M1 license allows you to ride a wider range of motorcycles, including larger bikes that can go faster than 30 mph.

# Helmets Defined

## Bicycle Helmet:

**21212 CVC -**

(a) A person under 18 years of age shall not operate a bicycle, a nonmotorized scooter, or a skateboard, nor wear in-line or roller skates, nor ride upon a bicycle, a nonmotorized scooter, or a skateboard as a passenger, upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail unless that person is wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC), or standards subsequently established by those entities. This requirement also applies to a person who rides upon a bicycle while in a restraining seat that is attached to the bicycle or in a trailer towed by the bicycle.

## Motorcycle Helmet:

**27803 CVC -**

(a) A driver and any passenger shall wear a safety helmet meeting requirements established pursuant to Section 27802 when riding on a motorcycle, motor-driven cycle, or motorized bicycle.

(b) It is unlawful to operate a motorcycle, motor-driven cycle, or motorized bicycle if the driver or any passenger is not wearing a safety helmet as required by subdivision (a).