

## **CHAPTER 39-27 MOTORCYCLE EQUIPMENT**

### **39-27-01. Purpose.**

It is the purpose of this chapter to establish performance and equipment requirements for the manufacture, sale, and safe operation of a motorcycle upon public highways and to furnish administrators with a guide for registration eligibility and continued conformity as related to motorcycles.

### **39-27-02. Manufacturer's or distributor's certification.**

1. The manufacturer or distributor shall provide a certification of the fact that a motorcycle or class of motorcycles is designed and manufactured for use upon public highways and complies with the performance and equipment requirements of this chapter and the rules and regulations promulgated hereunder.
2. The certificate must be incorporated on the manufacturer's statement of origin upon transfer of vehicle ownership.

### **39-27-03. Frame-chassis requirements.**

1. The motorcycle frame-chassis, including the suspension components and engine mountings, must be of substantial construction, capable of supporting the combined weight of all vehicle components and riders for which the vehicle is designed, and withstand normal road shocks and operational stresses without constituting a hazard to the riders or other users of the highway.
2. The wheelbase may not be less than forty inches [101.6 centimeters].

### **39-27-04. Brakes.**

1. Every motorcycle must have either a split service brake system or two independently actuated service brake systems in accordance with rules adopted by the director pursuant to chapter 28-32. Brakes must act on the front and rear wheels.
2. Every motorcycle must meet the requirements for brake system effectiveness, fade, and partial systems as specified in rules adopted by the director pursuant to chapter 28-32.
3. All linkage, cables, pivots, and bearings must be free of excess (high) friction, with the front wheel brake cable so located and secured as not to become pinched between fork and frame members when wheel is turned completely to the right or left.
4. Brake actuating devices must be in an accessible location, unencumbered by vehicle components, and so positioned that adequate leverage and safe operation is ensured. Service brake system controls and operation requirements must be in accordance with rules adopted by the director pursuant to chapter 28-32. A suitable mechanism must be provided for the purpose of automatically returning the actuating devices to normal position upon release.
5. Motorcycle brakes must be capable of being adjusted automatically or manually with means provided to prevent unintentional adjustment.
6. Each three-wheel motorcycle must be equipped with a parking brake of a friction type with a solely mechanical means to retain engagement.

#### **39-27-04.1. Brakes on motor-driven cycles.**

The department may require an inspection of the brake on any motor-driven cycle and may disapprove any brake which is not so designed or constructed as to ensure reasonable and reliable performance in actual use.

### **39-27-05. Tires, wheels, and rims.**

1. Motorcycle tires must be of pneumatic design with a minimum width of two and twenty-five hundredths inches [57.15 millimeters] designed for highway use.

2. Tires on two-wheel motorcycles and the single tire on the front or rear of a three-wheel motorcycle must have a load capacity rating at least equal to their respective gross axle weight ratings. Each tire on the front or rear axle of a three-wheel motorcycle must have a load capacity rating at least equal to one-half the front or rear axle gross axle weight rating.
3. Wheel rim diameters may not be less than ten inches [25.4 centimeters] or otherwise comply with title 49, Code of Federal Regulations, part 571, Federal Motor Vehicle Safety Standards, and must otherwise comply with applicable state standards, as promulgated by the director. Two-wheel motorcycles using low pressure tires are exempt from this subsection if the inflated height of the tire is twenty inches [508 millimeters] or greater.

#### **39-27-06. Steering and suspension systems.**

1. Motorcycle steering and suspension systems must be designed and engineered to provide the operator with the means of safely controlling vehicle direction under all maneuvers required for normal and safe operation.
2. The rear wheel of a two-wheel motorcycle must track behind the front wheel within one inch [2.54 centimeters] with both wheels in a vertical plane when the vehicle is operating on a straight course. On a three-wheel motorcycle, the midpoint of the front or rear wheel track distance must be within one inch [2.54 centimeters] of the single front or single rear wheel track when the vehicle is proceeding on a straight course. The vehicle must be equipped with an adjustment feature that will provide proper wheel tracking.
3. The steering head must be provided with a bearing or similar device that will allow the steering shaft to turn freely in rotational motion only.
4. All motorcycles, except three-wheel motorcycles, must meet the following specifications in relationship to front wheel geometry:
  - MAXIMUM: Rake: 45 degrees - Trail: 14 inches  
[35.56 centimeters] positive
  - MINIMUM: Rake: 20 degrees - Trail: 2 inches  
[5.08 centimeters] positiveManufacturer's specifications must include the specific rake and trail for each motorcycle or class of motorcycles and the terms "rake" and "trail" must be defined by the director by rules adopted pursuant to chapter 28-32.
5. Handlebars must be of sturdy construction, adequate in size to provide proper leverage for steering, and capable of withstanding a minimum force of one hundred pounds [45.36 kilograms] applied to each handgrip in any direction. Handlebar grips may not be located above the shoulder height of the seated operator. The handlebars must provide a minimum of eighteen inches [45.72 centimeters] between grip after final assembly.
6. Handlebars must be equipped with handgrips consisting of a material and surface pattern to ensure firm, nonslip gripping for the driver.
7. Every motorcycle must be equipped with a suspension system and such suspension system must be applicable to at least the front wheel. The suspension system must be effective in reducing road shock and designed for the purpose of maximizing vehicle stability.

#### **39-27-07. Fuel system.**

1. All fuel system components, including the tank, pump, tubing, hoses, clamps, and other components, must be securely fastened to the motorcycle so as not to interfere with vehicle operation and be leakproof when the vehicle is in its normal operating attitude.
2. Fuel lines must be positioned in a manner to prevent their contact with the engine head, manifold, exhaust system, or other high temperature surfaces, or moving components. The fuel system must be adequately vented and provided with a fuel shutoff valve located between the fuel supply and the engine.

### **39-27-08. Exhaust system - Prevention of noise.**

Motorcycles must be equipped with an exhaust system incorporating a muffler or other mechanical device for the purpose of effectively reducing engine noise. Cutouts and bypasses in the exhaust system are prohibited. The system must be leakproof and all components must be securely attached to the vehicle and located so as not to interfere with the operation of the motorcycle. Shielding must be provided to prevent inadvertent contact with the exhaust system by the operator or passenger during normal operation. In addition, all motorcycles operating on streets and highways must meet the noise decibel limitations as established by the environmental protection agency. No person may sell, offer for sale, or install any noise suppressing system or device which will produce noise in excess of the maximum allowable decibel limitations of this section.

### **39-27-09. Mirror.**

Every motorcycle must be equipped with at least one mirror of unit magnification, securely affixed to the handlebar and capable of adjustment within a range that will reflect an image that includes at least the horizon and the road surface to the rear of the motorcycle. Such mirror must consist of a minimum reflective surface of ten square inches [64.52 square centimeters]. All mirrors shall not contain sharp edges or projections capable of producing injury.

### **39-27-10. Fenders.**

Each wheel of a motorcycle must be equipped with fenders or otherwise covered by the body configuration. Fenders must be securely mounted and of sufficient size and strength to minimize water or other road surface substances from coming in contact with the vehicle riders, or throwing the road substances unreasonably to the rear of the vehicle. Fender design must be effective in reducing side spray.

### **39-27-11. Seat or saddle.**

A seat or saddle securely attached to the vehicle must be provided for the use of the operator. The seat or saddle may not be less than twenty-five inches [63.5 centimeters] above a level road surface when measured to the lowest point on top of the seat or saddle cushion with the operator seated in a driving position. The seat or saddle adjustment locking device must prevent relative movement of the seat from its selected and secured position under all normal vehicle operating conditions.

### **39-27-12. Chain guard.**

Any drive chain on a motorcycle must be equipped with a chain guard or covering device to prevent chain or chain sprocket contact with any rider.

### **39-27-13. Vehicle stand.**

All motorcycles designed with two wheels must be equipped with a retracting vehicle stand to permit the vehicle to remain in an upright stored position without outside assistance. The stand may be of a side or center type and must be of substantial construction to hold the vehicle so equipped.

### **39-27-14. Glazing.**

When equipped, all motorcycle windscreens and windshields must meet the following standards:

1. The glazing material must comply with the standards promulgated by rule of the director.
2. The metal support must be of a material which bends rather than fragments under impact.
3. Covering material, other than glazing, must be beaded at the edges to prevent fraying.

**39-27-15. Horn.**

Every motorcycle must be equipped with an operative horn in good working order as described by subsection 1 of section 39-21-36. The horn must operate from a control device located on the left handlebar.

**39-27-16. Speedometer and odometer.**

Every motorcycle must be equipped with a properly operating speedometer and odometer calibrated in miles [kilometers] per hour and miles [kilometers] respectively and must be fully illuminated when the headlamp is activated.

**39-27-17. Lighting equipment.**

1. A motorcycle must be equipped with lamps, reflective devices, and associated equipment as required by and in compliance with standards adopted by rule of the director.
2. A gearbox indicator light, if provided, must be located within the operator's field of vision.
3. A headlamp beam indicator light must be located within the operator's field of vision and illuminated automatically when the high beam of the headlamp is actuated.
4. A motorcycle must be equipped with at least one taillamp in accordance with section 39-21-04.
5. A motorcycle must be equipped with a stop lamp in accordance with subsection 1 of section 39-21-19.

**39-27-17.1. Headlamps on motorcycles.**

1. The headlamp or headlamps upon every motor-driven cycle may be of the single-beam or multiple-beam type.
2. Every headlamp or headlamps on a motor-driven cycle must be of sufficient intensity to reveal a person or a vehicle at a distance of not less than one hundred feet [30.48 meters] when the motor-driven cycle is operated at any speed less than twenty-five miles [40.23 kilometers] per hour and at a distance of not less than two hundred feet [60.96 meters] when the motor-driven cycle is operated at a speed of twenty-five or more miles [40.23 or more kilometers] per hour, and at a distance of not less than three hundred feet [91.44 meters] when the motor-driven cycle is operated at a speed of thirty-five miles [56.33 kilometers] per hour.
3. In the event the motor-driven cycle is equipped with a multiple-beam headlamp or headlamps the upper beam must meet the minimum requirements set forth above and may not exceed the limitations set forth in subsection 1 of section 39-21-20 and the lowermost beam must meet the requirements applicable to a lowermost distribution of light as set forth in subsection 2 of section 39-21-20.
4. In the event the motor-driven cycle is equipped with a single-beam lamp or lamps the lamp or lamps must be so aimed that when the vehicle is loaded none of the high-intensity portion of light, at a distance of twenty-five feet [7.62 meters] ahead, projects higher than the level of the center of the lamp from which it comes.

**39-27-18. Passenger seat.**

Motorcycles designed to carry more than one person must be equipped with a securely mounted seat for each passenger located to the side or rear of the driver such that the passenger seat does not interfere with the driver's control or operation of the vehicle. In the case of a two-wheel vehicle, the passenger seat must be located on the longitudinal centerline of the motorcycle.

**39-27-19. Handhold.**

Repealed by S.L. 1985, ch. 451, § 1.

**39-27-20. Footrests.**

Footrests must be provided for each designated seating position. Each footrest for a passenger must be so designed and constructed to support a static weight of two hundred fifty pounds [113.40 kilograms] applied at the center of the foot pedal. Footrests must be so located to provide reasonable accessibility for the passenger's feet. Footrests must fold rearward or upward when not in use if the footrest protrudes beyond the width of the handlebars.

**39-27-21. Highway bars.**

If a motorcycle is so equipped, highway bars must have a maximum width of twenty-six inches [66.04 centimeters], must be located less than fifteen inches [38.1 centimeters] from the foot controls, and may not interfere with the operation of the foot controls.

**39-27-22. Equipment approval.**

All motorcycle lighting devices, electrical systems, brake components, glazing materials, and exhaust systems, incorporating a muffler or other mechanical exhaust device, required or optional, must be approved by the department before they will be available for use within the state.