

State and Federal Regulations relating to Trailers and Towed Equipment

- 393.71 Safety Chains – If safety chains are used as a safety device, they shall be crossed, and attached to the tow-bar at the point of crossing or as close to that point as practical. (Federal Motor Carrier Safety Regulations Handbook)**
- 545.410 Safety chains: Passenger cars or light trucks that draw a trailer must use safety chains attached in an approved manner. Safety chains are not required to tow trailers used for agricultural purposes.
- 547.302 Lighting: Vehicles with a GVW below 4500 lbs. must display at night time or when visibility is below 1,000 feet
- 547.332 Tail Lamps:
At least 2 per towed vehicle, mounted on the rear, at a height of 15 – 72”, at the same level, as widely spaced as possible, consisting of: a red light, plainly visible at 1,000 feet, and a tail lamp or separate lamp that emits a white light to illuminate the rear license plate, clearly visible at 50 feet
- 547.323 Stop Lamps:
At least 2 stop lamps, mounted on the rear of the vehicle, red or amber light, or a color in between, visible in sunlight at a distance of at least 300 feet, displayed when service brake is applied, may be included as part of another lamp.
- 547.324 Turn Signal Lamps:
Mounted at the same level, spaced as widely apart as possible, can be part of another lamp, white or amber in color, or a color in between if mounted on the front of the vehicle, red or amber in color, or a color in between if mounted on the rear of the vehicle,
Visible in normal sunlight,
500 feet from the front & rear of the vehicle if vehicle is 80 inches wide;
300 feet from the front & rear of the vehicle if vehicle is less than 80 inches wide;
- 547.325 Reflectors: At least 2 red reflectors on the rear of the vehicle, may be included as part of a taillamp, mounted at a height from 15 to 60 inches, visible at night at all distances, visible from 100 to 600 feet when directly in front of lawful lower beams of headlamps.
- 547.326 Minimum Lighting Equipment Required
A vehicle not specifically required to be equipped with lamps or lighting devices shall be equipped with one lamp that emits a white light visible at 1,000 feet from the front, one lamp that emits a red light visible at least 1,000 feet from the rear, and two red reflectors visible when illuminated at all distances from 100 to 600 feet from the rear.
- 547.352 Additional lighting for large equipment:
Trailers that are at least 80 inches wide shall be equipped with two front clearance lamps – one on each side, two rear clearance lamps – one on each side, four side marker lamps, one on each side on or near the front end and rear end, four reflectors, one on each side on or near the front end and rear end, and hazard lamps meeting the specifications of 547.331.
Trailers that are at least 30 feet long shall be equipped with two side marker lamps, one centrally mounted on each side, two reflectors, one centrally mounted on each side, hazard lamps that meet the requirements of section 547.331.
- 547.333 Color Requirements: Front or center clearance lamps, identification lamps, side marker lamps or reflectors must be or reflect amber, rear clearance lamps, identification lamps, side marker lamps, or reflectors must be or reflect red.
- 547.334 Mounting requirement:
Reflectors – at a height from 24 to 60 inches, or as high as practical if less than 24 inches, Clearance lamps – mounted to indicate the extreme height and width, clearance and side marker lamps may be mounted in combination.
- 547.335 Visibility requirements:
Clearance lamps, side marker lamps, and identification lamps must be visible under normal atmospheric conditions at all distances between 50 and 500 feet; reflectors must be visible at nighttime distances from 100 to 600 feet of lawful lower beam headlights.
- 547.371 General Lighting Requirements for Farm Tractors, Farm Equipment, and Implements of Husbandry
At least two headlamps, at least one rear red lamp visible at least 1,000 feet and mounted as far to the left as possible, at least two red reflectors visible from 100 to 600 feet from the rear, hazard lamps as described in 547.331, visible in normal sunlight at a distance of at least 1,000 feet.

- 547.372 Combination vehicles – objects or loads that extend more than 4 feet from the rear of the tractor or obscure a light must have::
Two red reflectors visible at all distances from 100 to 600 feet, mounted on the extreme width of the vehicle. Objects towed that extend more than 4 feet to the left of the centerline of the tractor must have a front amber reflector that is visible at all distances from 100 to 600 feet in front of lawful lower beams, and mounted to the extreme left projection of the towed object. Reflective tape or paint may be used if the alternative complies with other visibility requirements.
- 547.382 Projecting loads extending more than four feet past the bed or body of the vehicle must be lighted at the extreme end of the load at nighttime, and when visibility is less than 1000 feet. Two rear red lamps, two red reflectors indicating maximum width, and two red side lamps indicating overhang are required. At all other times, loads extended more than four feet shall display red flags at least 12” square at the extremities of the load.
- 547.401 Braking requirements – trailers are not required to have brakes if their GVW is less than 4500 lbs., or if the GVW is between 4500 and 15,000 pounds, but is drawn at a speed of 30 mph or less.
- 547.402 Required brakes – trailers with a GVW between 4500 and 15, 000 lbs. drawn at a speed over 30 mph may have brakes that operate both wheels of the rear axle. Trailers with a GVW in excess of 15,000 lbs. must have brakes that operate each wheel. Trailers with a GVW of 15,000 lbs. or less may use surge or inertia brakes to satisfy the braking requirements.
- 547.405(b) Breakaway brake – a vehicle used to tow another vehicle shall be equipped with a second control device that is used to operate the brakes in the towed vehicle in case of an emergency, and is independent of other controls.
- 547.606 Safety guards or mud flaps – a trailer that has at least four tires on the rearmost axle shall be equipped with safety guards or flaps that are located and suspended behind the rear axle within eight inches of the surface of the roadway.
- 547.703 Slow moving vehicle equipment – a slow moving vehicle must have a SMV emblem that has a reflective surface clearly visible in daylight or when illuminated by headlights at a distance of 500 feet, and must be mounted base down on the rear of the vehicle at a height of 3 – 5 feet above the road surface.
- 548.52 Vehicles not subject to inspection – trailers with a GVW of 4,500 lbs., or less, or farm machinery, farm trailers, or vehicles required to display a SMV emblem.**

This information was excerpted from:

Part 393 – Parts & Accessories Necessary for Safe Operation (Federal Motor Carrier Safety Regulations HB)

TTC 545 – Operation & Movement of Vehicles (<http://www.capitol.state.tx.us/statutes/tr/tr054500.html>)

TTC 547 – Vehicle Equipment (<http://www.capitol.state.tx.us/statutes/tr/tr054700.html>)

TTC 548 – Compulsory Inspection of Vehicles (<http://www.capitol.state.tx.us/statutes/tr/tr054800.html>)

If you have ANY question about the applicability of any section of the Texas Transportation code, contact your local Department of Public Safety office. Their website is “<http://www.txdps.state.tx.us>.”

Federal Motor Carrier Safety Regulations can be purchased from J.J. Keller & Associates at “www.jjkeller.com” or Labelmaster, Inc. at “www.labelmaster.com.” Trailer lighting manufacturers and retailers may also have charts detailing lighting requirements and specifications for placement.

As a general rule, trailers operated on public roadways may not exceed 102” (8’6”) at the widest point, and 58’ in length.

ASAE Standards for Three-point Hitches

Refer to ASAE Standard S278.6 Jan 01 for 3-point hitch specifications. ASAE standards can be ordered on the ASAE website “www.asae.org”, or ordered from ASAE for \$28.00 (non-members) plus shipping & handling. ASAE products are discounted for members, and available in PDF format on the web.

These will be checked with the rest of the plans and procedures materials at major agricultural mechanics project shows. You may also wish to refer to the link on the IMS website that will take you to Dr. Shell’s homepage of Mechanized Agriculture references and information about ASAE Standards. He also keeps the most recent Area III & VII Agricultural Mechanics CDE on this website.