**Section 448.APPENDIX A Safety Test Procedures and Specifications**

**Section 448.EXHIBIT A Testing Procedures**

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| 14.1 | | ONLY VEHICLES WITHOUT CARGO MAY BE TESTED |
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|  | 14.1.1 | Vehicles having a compartmentalized body containing tools or other working equipment (such as vehicles operated by telephone, gas electric companies, etc.) which do not exceed the maximum capabilities of the testing equipment may be tested. |
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|  | 14.1.2 | Vehicles equipped with specially fabricated attachments or fixtures designed for transporting special cargo (livestock, radio-active materials, etc.), which would require an exorbitant amount of time to dismantle, may be tested (without cargo). |
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|  | 14.1.3 | Vehicles equipped with permanently mounted equipment (camper body, compressor, winch, or lifting device) and licensed with weight plates that do not exceed the maximum capabilities of the testing equipment may be tested. |
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|  | 14.1.4 | If the station owner believes the total weight or size of a vehicle might damage the station or the testing equipment, he may refuse to test the vehicle. If the station owner accepts a vehicle for testing, he must assume total liability for damages to the station or the testing equipment cause by vehicle build, weight, or mass. |

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| 14.2 | The component systems listed in this Appendix may be tested in any order suitable to the Certified Safety Tester provided that each component applicable to the test vehicle is tested. The test vehicle must equal or exceed the minimum specification listed for each applicable component before a Certificate of Safety is issued to the test vehicle. |

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| 14.3 | | INCOMPLETE VEHICLES (CHASSIS, CHASSIS-CAB, ETC., ONLY). |
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|  | An incomplete vehicle must be tested for compliance to all applicable equipment standards. If the incomplete vehicle meets all requirements a Certificate of Safety shall be issued immediately. If the incomplete vehicle does not meet all requirements (most incomplete vehicles lack adequate splash guards, rear turn signals and clearance light-reflector systems), then no Certificate shall be issued. The vehicle shall be treated as a "Rejected Vehicle", and the Certified Safety Tester shall give the second copy of the Vehicle Inspection Report to the driver to be carried by him while the vehicle is being moved for completion or repair. The test fee is due at the time of the original test. No additional fee may be charged if the vehicle is returned to the original testing station for a retest within sixty days of the original test. | |

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| 14.4 | | | TIRES AND WHEELS | | | | |
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|  | | 14.4.1 | | | | TIRE AND WHEEL DEFINTIONS | |
|  | | | | | | | |
|  | | | | BEAD – | | | That part of the tire usually made of steel wires, rubber, and ply cords that is shaped to fit the rim. |
|  | | | | |  | | |
|  | | | | BOTTOM OF THE TREAD GROOVE – | | | The portion of a tread groove nearest the carcass. |
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|  | | | | CARCASS – | | | The tire structure, except the tread and the portion of sidewall rubber outside the cords. |
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|  | | | | CIRCUMFER-ENCE OF THE TIRE – | | | A closed line around the tire perimeter that lies approximately in a plane perpendicular to the axis about which the tire rotates when in use. |
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|  | | | | CORD – | | | A filament or strand of non-rubbery material woven with others or laid parallel with others to form a layer or ply in a tire carcass. |
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|  | | | | DEPTH OF TREAD – | | |  |
|  | | | | (See "Tread Groove Depth"). |
|  | | | | |  | | |
|  | | | | GROOVE – | | | (See "Tread Groove"). |
|  | | | | |  | | |
|  | | | | PLY – | | | A layer of rubber-coated parallel or woven cords, including those laid under a tread in the form of a circumferential belt. |
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|  | | | | RECUT – | | | (See "Regroove"). |
|  | | | | |  | | |
|  | | | | REGROOVE – | | | The deliberate deepening of existing tread grooves or tread wear indicators by cutting, burning, or other means or the deliberate forming (by cutting, buring, or other means) of a groove or grooves other than the groove(s) molded by the tire manufacturer or retreader. |
|  | | | | |  | | |
|  | | | | RIM – | | | The metal that supports a tire and that is located between the tire and either the wheel disc or the wheel spokes when on a road wheel. The rim may be integral with, permanently or temporarily attached to, or separate from the wheel. |
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|  | | | | SEPARATION – | | | A parting or pulling away from the adjacent portion(s) of the tire material or carcass. |
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|  | | | | SIDEWALL – | | | The portion of a tire between tread and bead. |
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|  | | | | TIE BAR – | | | Rubber that is molded across a tread groove and braces or stabilizes tread elements. |
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|  | | | | TIRE – CIRCUMFER-ENCE | | | (See "Circumference of the Tire"). |
|  | | | | |  | | |
|  | | | | TREAD – | | | The thickness of tire rubber that is located outside the carcass and that normally comes into contact with the roadway as the inflated tire wears during use. |
|  | | | | |  | | |
|  | | | | TREAD  ELEMENT – | | | A distinct portion of the tread (such as a rib, lug, or knob) that comes into contact with the surface of a smooth, paved road while the properly inflated tire carries its normal service load. |
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|  | | | | TREAD  GROOVE – | | | A 3/32 inch (2.4 mm) or wider space between adjacent tread elements. |
|  | | | | |  | | |
|  | | | | TREAD  GROOVE –  DEPTH | | | The shortest distance from a plane in tangential contact with two adjacent tread elements to the bottom of the tread groove that is located between the adjacent tread elements. |
|  | | | | |  | | |
|  | | | | TREAD WEAR –  INDICATOR | | | A molded hump that stands 2/32 of an inch (1.6 mm) above the bottom of a tread groove. |
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|  | 14.4.2 | | | | | | Recommendation:  The inflation pressure of each tire should be checked against the vehicle manufacturer's recommendations (see decal or owner's manual). Pressure lower or higher than recommended is not cause for rejection. All tire pressures should be correct before beginning the test. |

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| PROCEDURES – TIRES AND WHEELS | | | | REJECT VEHICLE IF: | | |
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| A. | Inspect for tire tread wear. | |  | |  |  |
|  |  |  |  | |  |  |
|  | 1. | Tires with tread wear indicators. |  | | 1. | Tread wear indicators contact the road in any 2 adjacent grooves at 3 equally spaced intervals around the circumference of the tire (Fig. 14-2). |
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|  | 2. | Tires without tread wear indicators: Use tread depth gauge. Do not measure on a tire-bar, groove hump, fillet, or tread wear indicator. |  | | 2. | Tread groove depth is less than 2/32 inch in any 2 adjacent grooves at 3 essentially equally spaced intervals around the circumference of the tire. (Fig. 14.3). |
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|  | 3. | Tires without tread wear indicators and with noncircumferential grooves, or "spaces," between the tread elements (as in snow, mud, lug, knob, or traction treads): If tire has tread wear indicators, use procedure No. 1. |  | | 3. | Tread groove depth is less than 2/32 inch when measured in a major groove at a point half way between the center of the tire and the outside of the tread at 2 essentially equally spaced intervals around the circumference of the tire. (Fig. 14-4 and 14-5). |
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|  | 4. | Tires with treads that are bald, partially bald, cupped, dished, or unevenly worn.  AGENCY NOTE: "Bald" means without a groove (See definition of groove). |  | | 4. | The lateral width of any bald area (measured across the tire between bordering grooves) is ¼ or more of the tread width (measured across the tire between the outer edges of the outermost tread elements). Dimension "B" in Fig. 14-5 is ¼ or more of dimension "T". |
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| B. | Inspect for visible cord damage and exposure of ply cords in sidewalls and treads, including belting material cords. | | B. | | A broken or cut cord can be seen. Rubber is worn, cracked, cut, or otherwise deteriorated or damaged so that a cord can be seen – either when the tier is not touched or when the edges of the crack, cut or damage are parted or lifted by hand. (Fig. 14-6) | |
|  |  | |  | |  | |
| C. | Inspect for evidence of tread or sidewall separation. | | C. | | Tire has bump, bulge, knot or other evidence of partial carcass failure, air seepage, or loss of adhesion between carcass and tread or sidewall. | |
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| D. | Inspect for regrooved or recut treads.  AGENCY NOTE: Federal standards (49 CFR 369) require tires marked REGROOVABLE to have sufficient tread rubber that, "After regrooving, cord material below the grooves shall have a protective covering of tread material at least 3/32 – inch thick." | | D. | | Tread has been regrooved or recut on a tire that does not have the word REGROOVABLE molded on or into both sides of the tire. (See definition of "recut" and "regroove"). | |
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| E. | Inspect tires for legible markings showing size designation and carcass construction.  AGENCY NOTE: "R" in size designation shows radial construction. More plies at tread than sidewall shows belted construction. Same number of plies at tread and sidewall, without a belted or radial indication, shows plain bias construction. | | E. | | A tire on a road wheel does not exhibit a legible size marking and a legible construction marking. | |
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| F. | Inspect tires for size designation and for matched construction.  AGENCY NOTE: "Construction" refers to bias, bias-belted, or radial arrangements of ply cords in the tire carcass. | | F. | | Tires on the same axle are either not the same size designation, or not an equivalent size designation recommended by the vehicle or tire manufacturer. A tire of bias or bias-belted construction is installed on any road wheel of a vehicle equipped with a tire of radial construction on any road wheel. | |
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| G. | Inspect each dual tire assembly. | | G. | | A tire exceeds the diameter (not width) of its mate by ½ inch (¼ inch radius) or more; or one tire touches its mate. | |
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| H. | Inspect valve stems. | | H. | | A valve stem leaks; or is cracked; or is either damaged or positioned so as to hamper pressure checking or inflation; or shows evidence of wear because of misalignment. | |
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| I. | Inspect tire and road wheel assemblies. | | I. | | A tire or wheel is rubbing against any portion of the suspension, chassis, or body. | |
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| J. | Inspect all wheel and rim bolts, nuts, studs, lugs, locking rings, etc. Each cover, cap, or decorative ring that obscures any of these items must be removed prior to the inspection. | | J. | | Any wheel or rim securing device such as a nut, bolt, stud, lug, ring, or other type securing device is loose, missing, or cracked. | |
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| K. | Inspect for visible wheel damage. | | K. | | Wheel locating hole(s) are elongated, oversize, or "wallowed out". Any part of a wheel or rim is cracked, repaired by welding or rewelding, or damaged so as to cause unsafe operation of the vehicle. | |

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| 14.6 | | STEERING, ALIGNMENT AND SUSPENSION | | | | | | | | | |
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| The steering system of the vehicle must be inspected to determine if excessive wear and/or maladjustment of the linkage and/or steering gear exists. Vehicle must be tested on a dry surface. On vehicles equipped with Power Steering, the engine must be running and the Power Steering fluid level and belt tension on the Power Steering unit must be adequate before testing. | | | | | | | | | | | |
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| PROCEDURE – STEERING AND ALIGNMENT | | | | | | REJECT VEHICLE IF: | | | | | |
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| A. | POWER STEERING | | | | | A. | |  |  | | |
|  |  | |  | | |  | |  |  | | |
|  | 1. | | Inspect power steering belts for proper condition and tension. | | |  | | 1. | Belts are badly frayed or cracked on inner edge. | | |
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|  | 2. | | Visually inspect gear, hoses, tubes, connector, cylinders, valves, pump, and pump mounting. | | |  | | 2. | Any hose, tube, or connector has been rubbed by moving parts; leakage at any point in the system; gear, pump mounting, or connector is loose or broken. | | |
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|  | 3. | | Inspect fluid level in reservoir. (Wipe dirt from cover before removing). | | |  | | 3. | Fluid below recommended level. | | |
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| B. | BINDING OR JAMMING  Turn steering wheel through a full right and left turn and feel for binding or jamming conditions. | | | | | B. | | Binding or jamming occurs other than at stops. | | | |
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| C. | LASH OR FREE PLAY. (Fig. 14-7). | | | | | C. | | A point on the steering wheel moves more than the value show in Table 14-1 before perceptible return movement of the wheel under observation. | | | |
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|  |  | |  | TABLE 14-1, STEERING WHEEL FREE PLAY VALUES | | | | | | | |
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|  |  | |  | Steering wheel maximum diameter (inches) | | | | | |  | Lash (inches) measured at maximum circumference |
|  |  | |  |  | | | | | |  |  |
|  |  | |  | 18 or less | | | | | |  | 2 |
|  |  | |  | 18 | | | | | |  | 2 ¼ |
|  |  | |  | 20 | | | | | |  | 2 ½ |
|  |  | |  | 22 | | | | | |  | 2 ¾ |
|  |  | |  | | |  | |  |  | | |
| D. | COLUMN JACKET AND SUPPORT BRACKET  Visually inspect to determine that column support bracket is properly tightened and all bolts are present. | | | | | D. | | Column support bracket is not properly tightened or bolts are missing. | | | |
|  |  | |  | | |  | |  |  | | |
| E. | STEERING SHAFT MOVEMENT.  Grasp steering wheel with both hands and attempt to move vertically | | | | | E. | | Steering shaft moves up and down. | | | |
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| F. | STEERING WHEEL  Inspect steering wheel condition. | | | | | F. | | Any spokes are missing or if reinforcement is exposed. | | | |
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| G. | HORN CONTROL  Inspect for presence of horn control. | | | | | G. | | Horn control is missing. Horn not audible (Note – Horn button, ring, or other control may be located anywhere in cab that is readily accessible to driver). | | | |

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| 14.7 | The steering system and related linkage and parts must be inspected to determine possible wear or damage at all points. |

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| 14.8 | | Wheel bearings out of adjustment can cause wander, erratic front brake action, and noise due to interference of parts. | | | | | |
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| PROCEDURE – WHEEL BEARINGS | | | | REJECT VEHICLE IF: | | | |
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|  | With the front end of the vehicle lifted so as to load any ball joints, grasp the front tire top and bottom. Rock it in and out, and record movement. To verify that any looseness detected is in the wheel bearing, notice the relative movement between the brake drum or disc and the backing plate or splash shield. (Fig. 14-8).  AGENCY NOTE: Wheel bearing play can be eliminated by applying service brakes. | | | Relative movement between drum and backing plate, measured at the tie, is ¼ inch or more. | | | |

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| 14.9 | | "Out of limits" linkage free play might cause wheel shimmy, erratic brake action and steering control problems. Make sure any looseness detected is not wheel bearing free play by applying service brakes during the inspection of this item. (Driver or person other than Certified Safety Tester may apply service brakes). | | | | | | | |
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| PROCEDURE – STEERING LINKAGE | | | | | | | REJECT VEHICLE IF: | | |
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|  | A. | | For trucks with single "I" beam or tube type front axle, hoist truck under axle. For trucks with twin "I" beam type front axles or with "A frame" control arms, each axle or arm must be hoisted independently, as shown in Figs. 14-9 and 14-10 so as to load the ball joints. Grasp front and rear of tire and attempt to shake assembly right and left to determine linkage looseness. Record movement at extreme front and rear of tire (Fig. 14-11). | | | | A. | Measurement is found to be in excess of:  Rim Diameter  16" or Less ¼"  17" and 18" ⅜"  over 18" ½" | |
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| AGENCY NOTE: | | | | | | Excessive looseness in the steering suspension on all General Motors light duty trucks should not be confused with the normal idler arm movement. Use of the proper diagnosis and checking procedures is essential to prevent needless replacement of the idler arm. This type of idler arm (Fig. 14-12) uses a rubber bushing designed to hold the arm in alignment with the stud end, and will exhibit a noticeable movement or lash when an excessive amount of pressure is applied to the end, even when the part is brand new. If excessive looseness is detected when performing the inspection in paragraph 14.10A and that looseness is traced to the idler arm, then the following checking procedure is required. | | | |
|  | | | | | | |  | | |
| a. | | | | | Raise the vehicle in such a manner as to allow the front wheels to rotate freely and the steering mechanism freedom to turn. Position the wheels in a straight ahead position. | | | | |
|  | | | | | | |  | | |
| b. | | | | | Using a push-pull type spring scale located as near the relay rod end of the idler arm as possible, exert a 25 lb. force upward and then downward while noticing the total distance the end of the arm moves. This distance should not exceed ⅛" (Fig. 14-13). It is necessary to insure that the correct load is applied to the arm since it will move more when higher loads are applied. It is also necessary that a scale or ruler be rested against the frame and used to determine the amount of movement since observers tend to over-estimate the actual movement when a scale is not used.  AGENCY NOTE: Jerking the right front wheel and tire assembly back and forth thus causing an up and down movement in the idler arm is not an acceptable method of checking since there is no control on the amount of force being applied. | | | | |
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| PROCEDURE – STEERING LINKAGE | | | | | | | REJECT VEHICLE IF: | | |
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| B. | | | | ON "I" beam axle system inspect tightness of pitman arm and all steering linkage. Drag link and tie rod ends must be mechanically locked by cotter pin or other element. | | | B. | | Excessive play is found in drag link, tie rod ends, steering box, etc. |

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| 14.10 | PROPER USE OF WHEEL ALIGNMENT INDICATOR. | | | | | |
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| 1. | | | Those vehicles whose front axle has independent suspension should not be driven over the wheel alignment indicator immediately after the front end has been raised. A false reading may occur if the vehicle front end is lowered and then within a few feet driven across the alignment indicator. The front wheels will not have had sufficient distance to resume their normal tracking. The vehicle should either be raised after crossing the wheel alignment indicator or should be backed up ten feet or more before being driven forward across the indicator. | | | |
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| 2. | | | Sagging springs, broken torsion bars, worn or deteriorated bushings, loose shackles, or "U" bolts mislocated or loose can cause vehicle instability and/or brake pull. | | | |
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| 14.10.2 | | | | SAGGING SPRINGS | | |
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| PROCEDURE – WHEEL ALIGNMENT | | | | | REJECT VEHICLE IF: | |
|  | | | | |  | |
| A. | | SPRINGS  Visually inspect front and rear for broken leaves or bar damage. Inspect spring shackles, bushing, "U" bolts, steering stops, and center bolt in springs. (Front end may have to be jacked up to perform this inspection.) | | | A. | Springs or torsion bars are broken. Shackles or "U" bolts worn or loose. Center bolt in springs sheared or broken. Steering stops allows tire to rub on frame or metal. Any leaves are cracked, or shackle, shackle pins, hangers, or "U" bolts are worn or loose. |

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| 14.11 | Excessive toe-in or toe-out is a general indication that complete check should be made of all front wheel alignment factors (caster, camber, steering axis inclination). (Fig. 14-14). | | | |
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| PROCEDURE – TOE–IN, TOE–OUT | | | REJECT VEHICLE IF: | |
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| A. | | TOE–IN, TOE–OUT (Fig. 14-15).  With wheels held in a straight ahead position, drive vehicle slowly over the approved drive-on side slip indicator. | A. | More than 30 feet per mile on the approved side slip indicator. |

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| 14.12 | SHOCK ABSORBERS | |  | |
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| PROCEDURE – SHOCK ABSORBERS | | | REJECT VEHICLE IF: | |
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| A. | | With vehicle on level surface, bounce one corner of vehicle and determine the number of times vehicle bounces before leveling off. | A. | Vehicle continues bouncing more than two cycles, indicating loss of shock absorber function. |
| B. | | With vehicle on a hoist or jacked up, visually inspect shock absorbers for excessive leakage, looseness of mounting, brackets, and bolts. | B. | Severe Leakage (not slight dampness) occurs. |
| C. | | PHYSICALLY GRAB upper and lower portion of shock inspecting for looseness in rubber bushing, mounting brackets, or bolts. | C. | Mounting bolts or mounts are broken or loose, or rubber bushing is partially or completely missing. |

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| 14.13 | AIR SUSPENSION: Inspection of such systems consists mostly of checking for air leaks, proper height, and ride level. Most commercial buses, some trucks and trailers will have this type of suspension.  CAUTION: Certified Safety Tester is not to use a creeper underneath vehicle because there may not be enough room when air is drained from bellows. | | | |
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| PROCEDURE – AIR SUSPENSION | | | REJECT VEHICLE IF: | |
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| A. | | A vehicle should be properly jacked or positioned over pit; drain entire system of air, start engine and observe air pressure gauge. Determine pressure at which air begins to lift vehicle to normal position.  AGENCY NOTE: Pressure regulator valve should not allow air into the system until at least 55 P.S.I. is in braking system. | A. | Air begins to flow into system before 55 P.S.I. is indicated on pressure gauge. |
| B. | | With air at normal operating pressure, observe height and level of vehicle relative to ground surface. (This will indicate function of pressure and height control valves.) | B. | Vehicle is resting on one or both axles, or the vehicle is not level (tilting to left or right). |
| C. | | With air in system at normal operating pressure, inspect hoses, connections, bellows for leaks and excessive deterioration. (Open air operated doors and apply service brakes fully.) (Fig. 14-16 and 14-17. | C. | Air leakage rate is greater than 3 P.S.I. in 5 minute time period. |
| D. | | Retractable axle(s). With air in system at normal operating pressure activate the axle lift control switch, to the "up" and "down" positions to check function. | D. | Axle fails to respond properly to the axle lift control switch. |

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| 14.14 | GENERAL LAMP – INSPECTION LIMITS – General lamp inspection includes the following types of lamps: head, tail, stop, license, clearance, signal, marker, and identification. |

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| 14.15 | | VEHICLE LIGHTING. | | | | | | | | | |
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| PROCEDURE – LIGHTS AND LAMPS | | | | | | | | REJECT VEHICLE IF: | | | |
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| MOTOR VEHICLES REQUIRE THE FOLLOWING: | | | | | | | | A. | Any bulb in any required lamp or light fails to function properly. | | |
| 1. | | Head lamps: 2 or 4 white or amber | | | | | | B. | An improperly connected circuit does not light the proper filaments for the different switch 2 positions. | | |
| 2. | | Turn Signals: (front) white or amber | | | | | |  | | | |
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| 3. | | Turn signals: (rear) (2) red or amber | | | | | | C. | | A lens is cracked, broken, or missing. | |
| 4. | | Turn signals: (front) 2 double face (front lens white or amber, rear lens red or amber.) | | | | | | D. | | A lens is rotated, upside down, wrongside out, or is otherwise incorrectly installed. | |
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| 5. | | Tail lamps: 2 red, one each on left and right rear. | | | | | | E. | | A lens marked "left" or "right" is not appropriately installed. | |
| 6. | | Stop lamps: 2 red, one each on left and right rear. (Vehicles manufactured before 1968 may have 1 red stop lamp.) | | | | | | F. | | A headlamp or fog lamp has dirt or moisture inside, any obvious discoloration, contamination or reflector deterioration. | |
| 7. | | Registration plate lamp:  1 white. | | | | | | G. | | A lamp or light is not securely fastened to the vehicle. | |
|  | | | | | | | |  | | | |
| 8. | | Parking lights: (front) white or amber. (Vehicles manufactured before 1968 may have 1 parking light on front.) | | | | | | H. | | A lamp or light shows a beam of color contrary to law or regulations. | |
|  | | | | | | | |  | | | |
| AGENCY NOTE: Tail lamps must operate in conjunction with front headlights and parking light(s). | | | | | | | | I. | | | There are any defects in wiring or lighting equipment that would be likely to influence adversely the effectiveness of the lighting performance. |
| AGENCY NOTE: Clearance and identification lights are not required to operate off of same switch as head lamp. | | | | | | | | J. | | | Any auxiliary equipment placed on, in, or in front of the head lamp is not a part of the original approved equipment. |
| AGENCY NOTE: Stop lamps should be checked with tail lamps illuminated to determine whether they are properly wired. | | | | | | | | K. | | | Beam indicator lamps do not indicate the proper beam to the driver and do not function properly. |
|  | | | | | | | | L. | | | Any lamp or lens is turned or inclined so that its light is not properly directed. |
|  | | | | | | | | M. | | | Tail lamps and registration plate lamp are not wired to the switch which operates the headlamps and the auxiliary driving lamps if vehicle is so equipped. |
|  | | | | | | | | N. | | | Area where lamp or light is mounted is so rusted or damaged that instability of lamp or light results and correct aim may not be maintained. |
|  | | | | | | | | 0. | | | Parking lights fail to function properly. |
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| 14.15.1 | | | | | ELECTRICAL WIRING. | | |  | | | |
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| PROCEDURE – ELECTRICAL WIRING | | | | | | | | REJECT VEHICLE IF: | | | |
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| Make visual check | | | | | | | | Wiring is frayed (including wiring from tractors to trailers or other towed vehicles.) | | | |
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| 14.15.2 | | | | | Special Requirements for Medical Transport Vehicles (MTV) | | | | | | |
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|  | If an MTV passes each test as required in Appendix A of this Part, plus the special tests of this subsection, that MTV is to receive a Certificate of Safety (C/S). (The C/S is to be applied to the vehicle. Section 13-101 of the Illinois Vehicle Inspection Law (Ill. Rev. Stat. 1987, ch. 95 ½, par. 13-101) requires each MTV to be safety tested, even when the MTV is a first division vehicle.) First division vehicles are defined as "*Those motor vehicles which a re designed for the carrying or not more than 10 persons.*" (Ill. Rev. Stat. 1987, ch. 95 ½, par, 1-217). | | | | | | | | | | |
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| Definitions: | | | | | | | |  | | | |
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| *Medical Transport Vehicle. "Includes ambulance, medical carriers, and rescue vehicles"* (Ill. Rev. Stat. 1987, ch. 95½, par. 1-142.2) | | | | | | | | | | | |
|  | | | | | | | |  | | | |
| *Ambulance. "Any publicly or privately owned vehicle which is specifically designed, constructed or modified and equipped and is intended to be used and is maintained or operated for this emergency transportation of persons who are sick injured, wounded or otherwise incapacitated or helpless."* (Ill. Reg. Stat. 1987, ch. 95 ½, par. 1-102.01) | | | | | | | | | | | |
|  | | | | | | | |  | | | |
| *Medical Carrier. "Any publicly or privately owned vehicle which is specifically designed, constructed or modified and equipped, and is intended to be used for, and is maintained or operated for the nonemergency transportation of persons for compensation for the purpose of obtaining medical services."* (Ill. Rev. Stat. 1987, ch. 95 ½, par. 1-142.1) | | | | | | | | | | | |
|  | | | | | | | |  | | | |
| *Rescue Vehicle. "Any publicly or privately owned vehicle which is specifically designed, configured, and equipped for the performance of access and extrication of persons from hazardous or life-endangering situations, as well as for the emergency transportation of persons who are sick, injured, wounded or otherwise incapacitated or helpless."* (Ill. Rev. Stat. 1987, ch. 95½, par. 1-224). | | | | | | | | | | | |
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| *Rescue Squad Vehicle. "A vehicle specifically designed, configured, and equipped for the performance of access and extrication from hazardous or life-endangering situations. However, if such vehicles have emergency medical transport capability they must be classified as rescue vehicles as defined in Section 1-224."* (Ill. Rev. Stat. 1987, ch. 95½, par. 1-223) | | | | | | | | | | | |
|  | | | | | | | |  | | | |
| A. | | | | | 1. | | *Each ambulance shall display special ambulance registration plates.* (Ill. Rev. Stat. 1987, ch. 95½, par. 11-1421(a)(5) | | | | |
|  | | | | | | | |  | | | |
|  | | | | | 2. | | *Each ambulance and each rescue vehicle shall have a loud siren producing an audible signal of an intensity of 100 decibels at a distance of 50 feet from the siren and at least one lamp that emits a bright oscillating, rotating, or flashing red beam, directed in part to the front of the vehicle, and these lamps shall have with sufficient intensity to be visible at 500 feet in normal sunlight.* (Ill. Rev. Stat. 1987, ch. 95½, par. 11-1421(a)(2) | | | | |
|  | | | | | | | |  | | | |
|  | | | | | 3. | | Report the testing of a Rescue Vehicle by marking item C in Field #2 of the Vehicle Inspection Report (See Section 448.APPENDIX J). | | | | |
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| PROCEDURE: | | | | | | | | REJECT VEHICLE IF: | | | |
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| Check registration plates on Ambulance.  Check Rescue Vehicle or Ambulance for required siren and lamp. | | | | | | | | Ambulance does not display special "ambulance" plates.  Required siren or lamp is absent or not in working condition. | | | |
|  | | | | | | | |  | | | |
| B. | | | | 1. | | A Medical Carrier is not an emergency vehicle. It shall not have a siren, whistle or bell. However, it may have a back-up alarm. | | | | | |
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|  | | | | 2. | | *A Medical Carrier may have a yellow (amber) oscillating, rotating, or flashing lamp if it carries a copy of written authority issued by a county board, by a municipality, or by some other board or body that, under the Constitution and Laws of Illinois, also has authority to enact traffic laws.* (Ill. Rev. Stat. 1987, ch. 95½, par. 12-215(b)(8) and 1-140) | | | | | |
|  | | | | | | | |  | | | |
|  | | | | 3. | | A Medical Carrier may have auxiliary turn signals on the roof, or lower, if those signals are at the same height on each side. *Front turn signals shall be yellow or white. Rear turn signals shall be either yellow or red.* . (Ill. Rev. Stat. 1987, ch. 95½, par. 12-208(b)) Auxiliary turn signals shall be actuated only by the same control that actuates the regular, or standard, turn signals. | | | | | |
|  | | | | | | | |  | | | |
|  | | | | 4. | | *All turn signals may flash simultaneously on both sides to indicate the presence of a vehicular traffic hazard which requires unusual care in approaching, overtaking, or passing.* (Ill. Rev. Stat. 1987, ch. 95½, par. 12-212(b) and 11-804(d)) Auxiliary (top) and standard (bottom) turn signals may alternately flash top and bottom, but not alternately right and left. Any auxiliary turn signals shall be actuated by the same control that causes the regular, or standard, turn signals to flash simultaneously on both sides as vehicular hazard signal. | | | | | |
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| PROCEDURE: | | | | | | | | REJECT VEHICLE IF: | | | |
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| Check Medical Carrier for siren, whistle, or bell. | | | | | | | | A siren, whistle, or bell is present. (Do not reject because of back-up alarm.) | | | |
|  | | | | | | | |  | | | |
| Check Medial Carrier for oscillating, rotating or flashing lamp(s). | | | | | | | | An oscillating, rotating, or flashing lamp;  Is present without legal written authority in the vehicle, or  Is authorized but is not yellow. | | | |
|  | | | | | | | |  | | | |
| Check turn signals, especially any auxiliary turn signals. | | | | | | | | Any turn signal is at wrong height, or  Any turn signal is wrong color, or  All turn signals do not operate from same control. | | | |
|  | | | | | | | |  | | | |
| Check vehicular hazard warning system. (Sometimes called "4-way flashers.") | | | | | | | | Lamps flash alternately right and left, or  Any upper or lower pairs of turn signals do not flash simultaneously, or  All turn signals are not actuated by the same "hazard" control. | | | |
|  | | | | | | | |  | | | |
| C. | | | A Rescue Squad Vehicle is not a medical Transport Vehicle. (See Definitions in this subsection.) Test and report a Rescue Squad Vehicle as an ordinary truck, bus, or first division vehicle as the case may be. Do not issue a Certificate of Safety to any Rescue Squad Vehicle of the first division that might be submitted to a safety test. | | | | | | | | |

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| 14.16 | LAMPS: CLEARANCE, IDENTIFICATION, AND SIDE MARKER. (Fig.14-18). | | | |
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| The following vehicles or combinations shall be equipped with two (2) YELLOW OR AMBER clearance lamps on the vehicle front, ONE ON EACH UPPER FRONT CORNER, and with THREE RED IDENTIFICATION LAMPS in a HORIZONTAL LINE on the rear of the vehicle. | | | | |
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| 14.16.1 | | Every single vehicle longer than 25 feet. | | |
|  | | | |  |
| 14.16.2 | | Every combination of vehicles longer than 25 feet. | | |
|  | | | |  |
| 14.16.3 | | Every single vehicle wider than 80 inches. | | |
|  | | | |  |
| 14.16.4 | | Every combination of vehicles wider than 80 inches. | | |
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| PROCEDURE – LAMPS: CLEARANCE | | | | REJECT VEHICLE IF: |
| IDENTIFICATION, AND SIDE MARKER | | | |  |
|  | | | |  |
| Make visual check | | | | It exceeds the preceding dimensions and is not properly equipped. |
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| AGENCY NOTE: | | | The following safety devices shall be excluded from the measurement when measuring any vehicle to determine the vehicle width: (a) exterior, side-mounted mirror assemblies; (b) side-mounted, turn signals; (c) front and rear bumpers; (d) flexible fender skirts or mouldings; (e) side-mounted clearance lamps and reflectors; and (f) any other light(s) or device(s) required for safety purposes. | |

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| 14.17 | REFLECTORS – FRONT. (Fig. 14-18). | |
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|  | Those vehicles with the dimensions listed in 14.16.1, 14.16.2, 14.16.3, and 14.16.4 shall be quipped on each front lower corner of the body with on yellow or amber reflector mounted WITHIN 12 inches of the LOWER LEFT and RIGHT corners respectively with the reflective surface facing toward the direction the vehicle travels in forward motion. | |
|  | |  |
| PROCEDURE – REFLECTORS – FRONT | | REJECT VEHICLE IF: |
|  | |  |
| Make visual check | | Not properly equipped, or the reflectors are cracked, broken, or missing. |

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| 14.18 | REFLECTORS – SIDE. (Fig. 14-18). | | |
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| Every vehicle longer than 20 feet and every trailer or semitrailer with a gross weight rating more than 3,000 pounds (registration plate Class TB or heavier) shall be equipped with reflectors on each side of the vehicle, mounted 15 inches to 60 inches from the surface of the road, with the reflector surface facing approximately at a 90 degree angle from the body as follows: | | | |
|  | | |  |
| 14.18.1 | | YELLOW (amber) at EACH 1/3 POINT (approximately), or | |
|  | | |  |
| 14.18.2 | | YELLOW (amber) within 12 inches of front, and RED within 12 inches of rear, and YELLOW (amber) at midpoint (approximately) IF 30 FEET LONG, or longer. | |
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| PROCEDURE – REFLECTORS – SIDE | | | REJECT VEHICLE IF: |
| Make visual check | | | Not properly equipped, or the reflectors are cracked, broken, or missing. |

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| 14.19 | REFLECTORS – REAR. (Fig. 14-18). | | |
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|  | The following vehicles or combination shall be equipped on EACH REAR LOWER CORNER of the Body with one RED reflector mounted WITHIN 12 inches of the lower LEFT and RIGHT CORNERS respectively with the reflective surface facing toward the direction from which the vehicle came when in forward motion. | | |
|  | | |  |
| 14.19.1 | | Every single vehicle longer than 25 feet. | | |
|  | | |  |
| 14.19.2 | | Every combination of vehicles longer than 25 feet. | | |
|  | | |  |
| 14.19.3 | | Every vehicle wider than 80 inches. | | |
|  | | |  |
| 14.19.4 | | Every combination of vehicles wider than 80 inches. | | |
|  | | |  |
| 14.19.5 | | Every trailer which has a gross weight (trailer or semitrailer plus load) of more than 3,000 pounds. | | |
|  | | |  |
| PROCEDURE – REFLECTORS – REAR | | | REJECT VEHICLE IF: |
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| Make visual check | | | Not properly equipped, or the reflectors are cracked, broken, or missing. |

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| 14.20 | The reflectors shown on the side view and the identification lamps shown on the rear view of tractors (Fig. 14-18) are required equipment if the tractor operates alone (bobtail) during darkness. |

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| 14.21 | | HEADLAMP AIM. | | | | |
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| Before checking beam aim, the Certified Safety Tester shall: | | | | | | |
|  | | | | |  | |
| (1) | | | | Remove ice or mud from headlights. | | |
| (2) | | | | See that no tire is noticeably deflated. | | |
| (3) | | | | Check springs for sag or broken leaves. | | |
| (4) | | | | Check functioning of any "level-ride" control. | | |
| (5) | | | | Clean lenses. | | |
| (6) | | | | Check for bulb burn out and proper beam switching. | | |
| (7) | | | | Rock the vehicle sideways. | | |
|  | | | | |  | |
|  | | | AGENCY NOTE: Vehicles in use today generally are equipped with one of two types of headlighting: The quad headlight system consisting of four 5¾ in. dia. sealed beam units or the two headlight system consisting of two 7 in. dia. sealed beam units. | | | |
|  | | | | |  | |
|  | | | In the quad system, two lamps, identified by "1" on the lens, are single filament lamps and provide the majority of the upper beam light. The other two lamps, identified by "2" on the lens, contain two filaments each. One filament operates in conjunction with the type "1" lamp and supplement the upper beam by providing fill-in light. The other filament provides the entire lower beam light. | | | |
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|  | | | The 7 in. dia. type "2" lamp, identified by "2" on the lens, contains two filaments. One filament produces the upper beam and the other produces the lower. | | | |
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|  | | | All type "2" lamps, regardless of size, must be aimed and tested on low beam. | | | |
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|  | USE APPROVED CALIBRATED HEADLAMP TESTER ACCORDING TO MANUFACTURER'S INSTURCTIONS. It shall be in good repair and calibration. | | | | | |
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| PROCEDURE – HEADLAMP TEST | | | | | REJECT VEHICLE IF: | |
|  | | | | |  | |
| A. | | | UPPER BEAM AIM  Applies only to 5¾ inch Type "1" sealed beam headlamp units. | | A. | Headlamp out of aim. |
| B. | | | LOWER BEAM AIM.  The following type headlamp units are to be tested ONLY on the LOWER BEAM:  1. 5 ¾ inch-Type "2"  sealed beam, or  2. 7 inch-Type "2"  sealed beam. | | B. | Headlamp out of aim. |

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| 14.22 | FRAME, CAB, AND BODY. | | |
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| PROCEDURE – FRAME, CAB AND BODY | | REJECT VEHICLE IF: | |
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| A. | Inspect frame and cross member assembly of chassis. | A. | Frame or cross member is broken or missing. |
| B. | Visually check cab and body attachment. | B. | Body bolts or brackets (to chassis) are loose, broken or missing; body spacer block missing or body not level with chassis; cab or body is loose on chassis. |
|  | |
| C. | Check fuel tank(s) to make certain secured to vehicle, and that cap(s) are present and capable of being tightened. | C. | 1. Fuel tank(s) leaking; not secured properly; cap(s) missing, leaking, or not able to be tightened.  2. Fuel tank has been added to the interior of a "van" type truck. |
| D. | Proper functioning of tractor 5th wheel (if vehicle so equipped). | D. | Cracked or operating mechanism is loose, jams, or has badly worn locking jaws. |
| E. | PROTRUDING OBJECTS.  Inspect for torn metal parts, moldings, etc., which may protrude from vehicle. | E. | Torn metal, glass, or other loose or dislocated parts protrude from the surface of the vehicle so as to cause a safety hazard to pedestrians or cyclists. |
|  | |  | |
| F. | BUMPERS.  Inspect bumpers for hazardous condition or unsafe mounting. (If vehicle is so equipped, inspect rear bumper.) | F. | The front bumper is missing, loosely attached, or protruding crating a hazard to pedestrians, cyclists, or other vehicles. (The rear bumper, if vehicle is so equipped, is loosely attached, or protruding creating a hazard to pedestrians, cyclists, or other vehicles.) |
| G. | FENDERS.  Inspect for removal of front or rear fenders. | G. | Any fender is missing. |
| H. | DOORS.  Inspect door latches, locks, hinges, and handles for proper operation, fastening, bad adjustment, broken or missing component. (Try doors and locks.) | H. | Doors or door parts are missing, broken, or sagging so that the door cannot be properly operated. |
|  | |  | AGENCY NOTE: Vehicles originally designed and built with doors, must have doors. |
| I. | HOOD.  Open hood and inspect safety catch for proper operation. Close hood and inspect for proper full closure. Check hinges for proper operation. | I. | Hood does not open or hood latch does not securely hold hood in its proper fully-closed position. Secondary or safety catch does not function properly. Hinge is broken, missing, or not attached to body. |
| J. | FLOOR, FIRE WALL, AND OCCUPANT COMPARTMENT.  Inspect floor, fire wall, and occupant compartment. | J. | Floor, fire wall, or any part of occupant compartment contains holes which would cause a hazard by permitting exhaust gases to enter the occupant compartment. |
| K. | SEAT(S)  Inspect seat(s) for proper operation of adjusting mechanism and to see that they are securely anchored to floor. | K. | Seat(s) not securely anchored to floor or adjusting mechanism slips out of position when braking or steering. |

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| 14.23 | MIRRORS. | | |
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| Every motor vehicle should be equipped with an inside rearview mirror and an outside rearview mirror mounted on the left side of the vehicle, both of which should have at least 3 square inches of reflective surface and be so located as to reflect to the driver a view of the highway for a distance of at least 200 feet to the rear of such motor vehicle. | | | |
|  | | |  |
| Any vehicle submitted to a safety test that is either defective, equipped, or constructed so that a driver does not have a clear view of the highway for a distance of at least 200 feet to the rear of such motor vehicle by means of an inside mirror shall be equipped with two outside mirrors; one on the right side of the vehicle and one on the left side of the vehicle and each mirror should have at least 3 square inches of reflective surface and be so located as to reflect to the driver a view of the highway for at least 200 feet to the rear of such motor vehicle. | | | |
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| PROCEDURE – MIRRORS | | | REJECT VEHICLE IF: |
|  | | |  |
| A. | | EXTERIOR REARVIEW  MIRROR.  From the driver's position visually inspect exterior mirror on driver's side for a clear and reasonable unobstructed view to the rear. Look for correct location, stable mounting, cracks, sharp edges, unnecessary protrusion. | A., B., & C.  1. Mirror not mounted on stable support or is loosely mounted.  2. Mirror obscured by a pillar or unwiped portion of windshield.  3. Mirror cracked, pitted, or clouded. |
| B. | | INTERIOR REARVIEW MIRROR  From the driver's position, visually inspect interior mirror for proper mounting, location, cracks, sharp edges, and ease of adjustment. | 4. Mirror missing.  5. Forward vision is unsafely obstructed by mirror assembly. |
| C. | | If interior rearview mirror does not provide a clear view of the highway for a distance of at least 200 feet to the rear of the vehicle, an exterior rearview mirror with at least 3 square inches of reflective surface shall be located on the right side of the vehicle.  (See Sec. 14.23A of test procedures.) |  |

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| 14.24 | WINDSHIELD WIPERS. | | | |
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| Every bus, truck, and truck tractor, having a windshield, shall be equipped with windshield wiper blade(s) equivalent to manufacturer's original equipment specifications. | | | | |
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| PROCEDURE – WINDSHIELD WIPERS | | | REJECT VEHICLE IF: | |
|  | | |  | |
| A. | | Operate wipers. (If vacuum operated, engine must be idling and control full on.) | A. | Wiper(s) fails to operate for full stroke, or will not return to proper "park" position out of driver's critical view area when shut off. Wiper(s) smears or severely streaks windshield. |
| B. | | Inspect rubber element of blade(s). | B. | Blade(s) exhibits damaged, torn, hardened, or physical breakdown of rubber wiping element. |
| C. | | Inspect metal parts of wiper blade(s) or arm(s). | C. | Parts of blades or arm(s) are missing, severely damaged, or contacting glazing. |
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| D. | | Raise arm away from windshield and release. | D. | Arm fails to force the blade to contact the windshield firmly. |

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| 14.25 | WINDSHIELD WASHER. | | | | |
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| All vehicles produced after January 1, 1969, must be equipped with windshield washer systems. Any vehicle manufactured prior to this date is not required to have a washer system, but if so equipped, they must be in operating condition. | | | | | |
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| PROCEDURE – WINDSHIELD WASHERS | | | | REJECT VEHICLE IF: | |
|  | | | |  | |
| A. | | Inspect for proper operation of hand or foot control and an effective amount of fluid delivered to the outside of the windshield opposite each outboard front seating position. | | A. | 1. System fails to function.  2. Fluid in system is frozen.  3. System not capable of cleaning an effective wash area. |
|  | | | |  | |
| AGENCY NOTE: | | | System must function when temperature is both above and below the freezing point. Low fluid level is not a cause for rejection, but advise driver. | | |

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| 14.26 | VEHICLE GLAZING. | | | |
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|  | Vehicle Glazing (glass) originally installed in a vehicle must be marked with a manufacturer's Trademark and followed by the words AMERICAN STANDARD, or the letters AS followed by a number which indicates the location in which that particular glass may be used, in accordance with the following table. | | | |
|  | | |  | |
| 14.26.1 | | If a vehicle is equipped with a replacement glazing which is unmarked, the vehicle owner or driver must show an invoice, work order, or receipt from the glass installer which states that safety glazing was installed, the grade of glazing used (AS1, AS2, etc.) and the vehicle location (left vent glass, windshield, etc.). If the Certified Safety Tester is satisfied that the proper type of glazing is now installed, the vehicle should not be rejected because of replacement glazing. When a vehicle is rejected for a defective piece of glazing the Certified Safety Tester should inspect the replacement piece of glazing during the retest for the proper marking (AS1, AS2, etc.). | | |
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| PROCEDURE – VEHICLE GLAZING | | | REJECT VEHICLE IF: | |
| INSPECT | | |  | |
|  | | |  | |
| A. | For materials in window openings other than glass. | | A. | Plywood, cardboard, or other opaque material is used in any window not blocked by permanently installed body or equipment. |
| B. | All glazing for proper location in vehicle. Vehicles must have approved glazing installed in those areas where glazing had been installed by the vehicle manufacturer. | | B. | Glazing not installed in nonblocked window or improper grad of glazing installed.  AGENCY NOTE: See Table 14.2 and vehicle glazing guide (Fig. 14-19). |
| C. | Condition of glass.  1. Windshield – Critical area (i.e., those areas swept or wiped by the full proper length of the blade(s) of a properly functioning windshield wiper.) | | C. | 1. There are scratches or abrasions in the critical area which are more than ½ inch wide and more than 6 inches in length. There are any "spider webs" or holes in the critical area. There are any "star chips" or "bullseyes" (stone nicks) larger than 1½ inches in the critical area. There is a crack where an edge can be felt on the wiper side of the windshield in the critical are.  Discoloration extends more than 3 inches up from the bottom, or more than 1 inch down from the top. (Fig. 14-19). |
|  | 2. Side Vents, Front Door Windows, and Side Windows. | |  | 2. Left front door window will not roll completely down for driver to give hand and arm signals. Discoloration in the vents, front door windows or side windows extends more than 3 inches up from the bottom. There are any cracks or sharp edges which permit the glass to be moved or the edges of which could inflect a cut or injury. Glazing is in such defective condition or repair as to prevent the driver's clear view to either side. |
|  | 3. Nonblocked Rear Window. (See Sec. 14.23). | |  | 3. Discoloration or breakage of nonblocked rear glass does not permit a clear view at least 200 feet to rear of vehicle and two outside rearview mirrors are not provided. There are any cracks or sharp edges which permit the glass to be moved or the edges of which could inflect a cut or injury. Glazing is in such defective condition or repair as to directly impair the driver's view to the rear and two outside rearview mirrors are not provided. |
| D. | For posters, labels, advertising. | | D. | There is any sign, poster, or other nontransparent material on the front windshield, side wings, or side or rear windows which would materially obstruct, obscure, or impair the driver's clear view of the highway or any intersecting highway. |
|  | | |  | |
| E. | *For window application, reflective material, non-reflective material or tinted film on vehicles manufactured during or after 1982*. | | E. | *There is any window application, reflective material, nonreflective material or tinted film upon the front windshield (past 6 inches from top*), *sidewings or side windows immediately adjacent to each side of the driver on vehicles manufactured during or after 1982.* |
| *Tinted film is permissible on windows to the rear of the driver's seat. If tinting is present, the vehicle must be equipped with side mirrors on each side.* | | *Side mirrors are not present.* |
| *Tinted film is acceptable 6 inches from top of windshield.* | | *Tinted film extends past 6 inches from top of windshield.* (Ill. Rev. Stat. 95½, par. 12-503, as amended by P.A. 85-1144, effective July 29, 1988) |

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| 14.27 | | EXHAUST AND FUEL SYSTEMS. | | |
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| The EXHAUST SYSTEM includes the manifold(s) and piping leading from the exhaust ports of the engine to and including the muffler(s), resonators, and the tail piping. | | | | |
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| The FUEL SYSTEM includes the fuel tank(s), fuel pump, and necessary piping to carry the fuel from the tank to the carburetor. | | | | |
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| PROCEDURE – EXHAUST AND FUEL SYSTEM | | | REJECT VEHICLE IF: | |
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| INSPECT | | |  | |
| A. | EXHAUST SYSTEM. | | A. | 1. There are loose connections or leaking joints.  2. There are holes (other than manufacturer's) or rusted through places.  3. Parts of system are not securely fastened.  4. Muffler cutout, bypass, or similar device that allows excessive noise is present. (Noise is excessive if vehicle emits more noise than with original equipment.)  5. Any part of exhaust system passes through the passenger compartment.  6. Exhaust system on any "van" type truck does not extend to outside edge of unit or exhaust system on any other truck does not extend beyond the passenger compartment.  7. Any exposed exhaust stack, so located as to endanger pedestrians or cyclists by burning, does not have a protective shield or insulated lining to prevent such burns. |
| B. | FUEL SYSTEM.  For leaks and secure mounting (fuel tank(s), support straps, tube clamps, fuel tank vent hoses and tubes.) | | B. | 1. There is fuel leakage at any point in the system.  2. Any part of the system is not securely fastened.  3. Any additional fuel tanks added to the interior of van type truck. |

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| 14.28 | BRAKE SYSTEMS. | | | | | |  | | |
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| 14.28.1 | | | | DEFINITIONS. | | | |  | | |
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| AXLE | | | | | | The mechanical arrangement that transmits vehicle weight to those wheels whose centers may be included between 2 parallel transverse vertical planes 40 inches apart extending across the full width of the vehicle. | | | |
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| EMERGENCY BRAKE | | | | | | The system used for stopping the vehicle in the event of a malfunction in the service brake system. | | | |
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| PARKING BRAKE | | | | | | The system used to hold and maintain a vehicle in a stopped position. | | | |
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| SERVICE BRAKE | | | | | | The system routinely used for slowing or stopping a moving vehicle by dissipating energy at drums or discs near the road wheels. | | | |
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| TANDEM AXLE | | | | | Any two or more consecutive axles whose centers are more than 40 inches and not more than 72 inches apart, measured to the nearest inch between any two adjacent axles in the series. | | | | |
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| 14.28.2 | | | GENERAL STATUTORY REQUIREMENTS FOR BRAKES. | | | | | | |
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|  | | | A. | | Every motor vehicle shall be equipped with two (2) separate means of applying the brakes and they shall be so constructed that failure of any one part of the operating mechanism shall not leave the motor vehicle without brakes. Reject noncomplying vehicles. | | | | |
|  | | | B. | | Every motor vehicle shall be equipped with service brakes on ALL wheels EXCEPT any truck, tractor or motor vehicle having 3 or more axles need not be equipped with brakes on the front wheels unless there are 2 steerable axles, 1 of which shall have brakes on the wheels. Reject noncomplying vehicles. | | | | |
|  | | | C. | | Any motor vehicle having more than one axle which has 2 wheel brakes only SHALL BE REJECTED. | | | | |
|  | | | D. | | Any trailer or semitrailer with a gross weight of 5,000 pounds or more shall have service brakes on all road wheels. Reject noncomplying vehicles. | | | | |
|  | | | E. | | Any trailer or semitrailer with a gross weight of 5,000 pounds or more shall be equipped with brakes so designed and connected that in case of an accidental breakaway from the towing unit the brakes are automatically applied. Reject noncomplying vehicles. | | | | |
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| 14.28.3 | | | STATIC SAFETY TESTS FOR BRAKES | | | | | | |
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| PROCEDURE – BRAKES | | | | | | | REJECT VEHICLE IF: | | |
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| A. | | Inspect all portions of drums, discs, and linings that are visible without removing wheels. If vehicle is equipped with openings allowing lining observation, remove covers or plugs as necessary; visually inspect linings; reinstall any covers or plugs removed. | | | | | A. | | Drum or disc is cracked through to ventilated surface. Rivet, shoe, or pad backing is rubbing disc or drum. Lining is worn past wear indicator, if vehicle is so equipped. |
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| B. | | HYDRAULIC SYSTEM.  1. Vehicle with brake system failure indicator as part of original equipment\*. Apply parking brake and start engine, or follow other procedure recommended by manufacturer. Verify the indicator lamp is operable.  \*Required by federal rule, on cars manufactured after 12/31/67; on other motor vehicles manufactured after 8/31/75. | | | | | B. | | 1. Lamp fails to light when proper procedure is followed. |
|  | | 2. Apply heavy force (about 125 lbs. or as in a "panic" stop) to brake pedal for 15 seconds with engine running on vehicle equipped with power assist brakes. DO NOT "PUMP PEDAL. | | | | |  | | 2. Pedal moves toward floor while heavy force is maintained for 15 seconds (indicates leakage in system). Pedal moves to floorboard or other pedal-stop (indicates no reserve). |
|  | | 3. Check master cylinder reservoir fluid level (remove cover only if necessary). Visually inspect master cylinder, backing plates and/or calipers, connectors, hoses, and tubes. | | | | |  | | 3. Low of fluid. Leakage of brake fluid. Visible leakage of axle lubricant onto drum, disc or lining. Incorrect connector, hose or tube installed. Badly scraped, leaking, restricted, crimped, cracked, or broken connector, hose or tube. |
|  | | 4. Visually check hose and tube supports. | | | | |  | | 4. Hose or tube either not properly attached and supported or in abrasive contact with other hose, tube, connector, the frame, axle, or any other part of the vehicle. |
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| C. | | VACUUM SYSTEM.  1. Inspect tank(s), chambers, hoses, connectors, clamps, and air cleaner. | | | | | C. | | 1. Any component is restricted, collapsed, scraped, cracked, loose, or broken. Air cleaner is clogged sufficiently to prevent proper air intake. |
| 2. Inspect supports and attachments. | | | | | 2. Any support or attachment is broken. Any connecting line or other component is not attached or supported so as to prevent damage from scraping or rubbing frame, axle, other line, or any other part of vehicle. |
|  | | 3. Inspect for tractor-trailer brakes working in conjunction. | | | | |  | | 3. Brakes do not work together off of one pedal. |
|  | | 4. With engine off, repeatedly apply service brakes until vacuum is destroyed; with medium pressure on foot pedal, start engine; release brake and operate engine until maximum vacuum is established; stop engine; apply service brakes, hard.  AGENCY NOTE: Brakes on towed unit(s) of combination vehicles must be connected and operated during this test. | | | | |  | | 4. Foot pedal does not fall away from foot when engine is started; insufficient vacuum reserve to permit one full service brake application after engine is off without actuating "Low Vacuum" indicator; valve or diaphragm leaking. |
|  | | 5. Apply brake; start engine; after 1 minute of running engine check "Low Vacuum" indicator, if vehicle is so equipped. | | | | |  | | 5. Indicator shows "Low Vacuum". |
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| D. | | AIR SYSTEM  1. With air system fully charged, open all drain cocks in system until gauge indicates zero pressure. Note pressure at which "Low Pressure" warning is given. | | | | | D. | | 1. Low pressure warning device (light or buzzer) fails to function before pressure is lowered to 50 PSI. |
|  | | 2. Close drain cocks and run engine at fast idle. Record time to raise air pressure from 50-90 PSI on gauge. | | | | |  | | 2. Time required to build pressure from 50-90 PSI at fast idle is more than 5 minutes. |
|  | | 3. Continue running engine and observe gauge pressure when governor cuts out. | | | | |  | | 3. Governor cut-out pressure is higher than 135 PSI or vehicle manufacturer's maximum recommendation. |
|  | | 4. With system fully charged, note reservoir pressure gauge reading; stop engine: make one full, maximum brake application; release brakes; note pressure gauge reading. | | | | |  | | 4. Reservoir pressure drops below 80% of initial gauge reading. |
|  | | 5. Start engine; charge system until governor cuts out; with engine idling, make a series of brake applications and observe gauge pressure when governor cuts in. | | | | |  | | 5. Governor cut-in pressure is lower than 80 PSI or vehicle manufacturer's recommendation. |
|  | | 6. Hoses, tubes, connectors, tanks, chambers, supports and attachments, air cleaner, safety valves, and air compressor belt. | | | | |  | | 6.1 Hose, tube, or connector is leaking, restricted, scraped, crimped, cracked, or broken.  6.2 Support or attachment is broken or connecting line is not attached or supported so as to prevent damage from scraping frame, axle, other line, or any other part of vehicle.  6.3 Any audible leak in system.  6.4 Safety valve inoperative.  6.5 Compressor drive belt badly worn, frayed, or without sufficient tension.  6.6 Compressor air intake cleaner closed. |
|  | | 7. With the air reservoir(s) fully charged and engine stopped, fully apply the service brake and hold for 1 minute and watch pressure gauge. | | | | |  | | 7. Pressure drop in 1 minute is more than  3 PSI for single vehicle  4 PSI for 2 vehicle  combination  5 PSI for 3 vehicle  combination |
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| E. | | ELECTRIC SYSTEM.  Inspect supports, connections, and wires. | | | | | E. | | Loose or dirty connections. Broken, frayed or unsupported wires. Broken supports. |
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| F. | | PARKING AND EMERGENCY  BRAKE  AGENCY NOTE: These may be either two separate systems or combined into one system.  1. Apply operating control fully.  2. See that actuating mechanism fully releases. | | | | | F. | | 1. Not equipped with parking and emergency brake(s). Operating mechanism does not hold parking brake in the applied position after hand, or foot, is removed from control lever.  2. Actuating mechanism not fully released when parking brake release control is operated properly. |
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| G. | | BREAKAWAY DEVICES TRAILERS AND SEMITRAILERS OVER 5,000 POUNDS.)  Disconnect trailer or semitrailer brake system so as to actuate breakaway device(s). Try to move trailer or semitrailer. | | | | | G. | | Not equipped with breakaway device. Breakaway device does not cause brakes to hold trailer or semitrailer. |
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| H. | | SEPARATE MEANS OF BRAKING  Each breaking system must apply brakes to at least 2 wheels. | | | | | H. | | Not equipped with 2 separate means.  Separate means are interconnected. |
|  | | AGENCY NOTE: MICRO-BRAKES ARE NOT CONSIDERED A SEPARATE MEANS OF BREAKING. | | | | | | | |
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| I. | | VISIBLE MECHANICAL COMPONENTS OF ALL SYSTEMS LISTED IN B, C, D, E, F, G, and H.  Inspect all pins, cotter pins, loose parts, springs, rods, yokes, clevises, eyes, couplings, anchor pins, cables, connections, spring clips, brackets. etc. | | | | | I. | | Mechanical parts missing, badly misaligned, broken, or badly worn. Parts frozen. Cables stretched, frayed, or broken. |

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| 14.29 | DYNAMIC BRAKE PERFORMANCE TESTS. | | | | | |
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| 14.29.1 | | | | USING A DRIVE – ON PAD – TYPE BRAKE TESTER | | |
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| CAUTION: Check to see that vehicle has stopping ability before testing. | | | | | | |
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| When using a PAD-TYPE TESTER, a tandem axle consisting of 2, 3, or more axles may be tested as one unit to determine braking performance. When using a PAD-TYPE TESTER for testing brakes on the towing unit of a combination vehicle, it is recommended that the brakes on the towed unit(s) be made inoperative or the towed unit(s) disconnected from the towing unit. | | | | | | |
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| When using a PAD-TYPE TESTER for testing brakes on a towed unit of a combination vehicle, brakes on the towing unit must not be operated. | | | | | | |
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| PROCEDURE – DRIVE-ON PAD-TYPE TESTER | | | | | REJECT VEHICLE IF: | |
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| A. | | | Drive vehicle or unit onto brake machine pads at 4-8 M.P.H. and with engine disconnected apply SERVICE BRAKES to bring vehicle to halt. DO NOT LOCK WHEELS. Note the braking forces registered by the brake test machine. | | A. | Machine does not register a total braking force at least 60% of the empty weight of the vehicle.  (E.W. x .60 = Minimum Total Force.)  EXAMPLE:  Empty weight of vehicle  4,000 lbs.  Percent x .60  ….………  Minimum total Force 2,400 lbs. |
| B. | | | Note whether braking forces at opposite wheels on the same axle, or tandem axle, vary more than 20 %. | | B. | Braking force at wheel(s) on the side registering the lower braking force is less than 80% of the higher braking force at wheel(s) on the opposite side of the same axle, or the same tandem axle.  EXAMPLE:  Reading at the side of tandem producing the higher  reading 6,000 lbs.  Percent x .80 lbs.  Minimum acceptable reading at the other side of tandem  4,800 lbs. |
|  | | | | |  | |
| C. | | | Drive vehicle onto brake machine at 4-8 M.P.H. and bring vehicle to a halt by apply the EMERGENCY BRAKE (i.e., the 2nd of the 2 separate means of applying brakes). | | C. | Braking force is less than 20% of the empty weight of the vehicle or there is more than 20% variance (i.e., "low" side is less than 80% of "high" side on same axle or tandem). |
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| 14.29.2 | | | | USING A ROLLER TYPE BRAKE TESTER | | |
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| When using a ROLLER TYPE TESTER, each axle must be tested separately to find the correct braking performance. Transmission must be in neutral position when testing service brakes on any drive axle. | | | | | | |
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| PROCEDURE – ROLLER TYPE TESTER | | | | | REJECT VEHICLE IF: | |
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| A. | | Drive front axle onto rollers. Start roller motor. Apply SERVICE BRAKES, but DO NOT LOCK WHEELS. | | | A. | Braking force at wheel(s) on "low" side is less than 80 % of the braking force at wheel(s) on "high" side. |
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| B. | | Repeat the above step for each axle. | | | B. | Braking force at wheel(s) on "low" side is less than 80% of the braking force at wheel(s) on "high" side. |
| C. | | Total braking force cannot be determined on this type of machine UNTIL ALL AXLES HAVE BEEN TESTED and results added for a total. | | | C. | Total of all braking forces is less than 60% of empty weight of the vehicle. |
| D. | | Apply EMERGENCY BRAKE (i.e., the 2nd of the 2 separate means of apply brakes) just to the point where wheels will lock. | | | D. | Total of all braking forces is less than 20% of the empty weight of the vehicle, or braking force wheel(s) on "low" side is less than 80% of braking force at wheel on "high" side. |

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| 14.30 | EMERGENCY WARNING DEVICES | | | | | |
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| A. | | | Three (3) red electric lanterns and two (2) red cloth flags not less than 12 inches square, with standards adequate to maintain the flags in an upright position; or | | | |
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| B. | | | Three (3) portable bidirectional red emergency reflectors (triangles or other shape) that meet requirements of the Federal Bureau of Motor Carrier Safety for equipment prior to 1/1/74 (i.e., 49 CFR 393.95(f)) and two (2) red cloth flags not less than 12 inches square, with standards adequate to maintain the flags in an upright position; or | | | |
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| C. | | | Three (3) bidirectional, fluorescent reflective, day-night emergency triangles which are either marked "DOT" or certified to comply with Federal Motor Vehicle Safety Standard No. 125 (i.e., 49 CFR 571.125); or | | | |
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| D. | | | Three (3) liquid burning flares (pots), three (3) fuses, each of which is capable of burning 15 minutes, and two (2) red cloth flags not less than 12 inches square, with standards adequate to maintain the flags in an upright position. | | | |
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| 14.30.2 | | | | *Any vehicle which transports explosives, flammable liquids, or compressed gas or which uses compressed gas as a fuel shall not carry any flares, fuses, or signals produced by flame.* (Ill. Rev. Stat. 1987, ch. 95 ½, par. 12-702(b)) Therefore, such vehicle SHALL be equipped in accordance with 14.30.1 A, B, or C. | | |
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| PROCEDURE – EMERGENCY WARNING DEVICES | | | | | REJECT VEHICLE IF: | |
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| A. | | Emergency warning devices.  AGENCY NOTE: A vehicle which carries liquid burning flares (pots) MUST in addition carry three (3) 15-minute fusees. A fusee may not be substituted for a flare, reflector, or electric lantern. Fusees may be carried in addition to set 14.30.1 "A", "B" or "C", ONLY when the answer to the following question is "NO". | | | A. | One of the required sets of emergency warning devices described in 14.30.1 is not present, or the emergency warning device kit is incomplete, or the components do not comply with 14.30.1 or 14.30.2. |
| B. | | Does vehicle either transport explosive, flammable liquids, or compressed gas or use compressed gas as a fuel? (Ask driver or determine correct answer by other means.) | | | B. | Answer is "YES" and vehicle carries a fusee, flare flame lantern, or other emergency device capable of giving a signal produced by flame. |

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| 14.31 | SAFETY CHAINS. | |
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| *Every full trailer, every auxiliary axle, and every semitrailer not equipped with a fifth wheel must be equipped with two (2) safety chains or cables of sufficient size and strength to prevent the towed vehicle from parting from the drawing vehicle in case the drawbar should break or become disengaged. This applies only outside of a business, residential, or suburban district, or on a controlled access highway.* (Ill. Rev. Stat. 1987, ch. 95½, pars. 15-110(b)) | | |
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| PROCEDURE – SAFETY CHAINS | | REJECT VEHICLE IF: |
| Visually check for safety chains on full trailer, auxiliary axle, or semitrailer without 5th wheel. Ask driver if vehicle is towed outside of a business, residential, or suburban district, or on a controlled access highway. | | Answer is "YES" and towed vehicle is not equipped with two (2) safety chains or cables of sufficient size and strength to prevent the towed vehicle from parting from the drawing vehicle. |

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| 14.32 | SPLASH GUARDS. | | |
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| Every vehicle of the second division, except a truck-tractor, pole trailer, or vehicle in transit, must be equipped with rear wheel splash guards, either of the contour type or the flap type. | | | |
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| PROCEDURE – BRAKES | | REJECT VEHICLE IF: | |
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| A. | Width of splash guards. | A. | Not as wide as the tread of the tire(s). |
| B. | For required number. | B. | Not equipped with two. |
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| C. | Condition of splash guards. | C. | 1. Damaged or not securely fastened. |
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|  | |  | 2. "T" Bar or some other similar device not installed to properly restrain flap type splash guard. (This excludes those marked anti-sail). |

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| 14.34 | AUDIBLE ALARM ON GARBAGE OR REFUSE HAULER | | |
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| A. | | Effective on January 1, 1987, an audible alarm is required on each vehicle equipped with either:  1. A self-compactor for garbage or refuse hauls, or  2. A roll-off hoist and roll-on container for garbage or refuse hauls. | |
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| B. | | The alarm device shall be mounted on the outside of the vehicle. It shall be aimed to direct sound primarily into the space behind the vehicle. The device shall be located within the rear ⅓ of the vehicle's length.  AGENCY NOTE: "Vehicle's length" includes any permanently affixed body, tailgate, or special container handling or carrying equipment but does NOT include a roll-on roll-off container or the powered unit in a combination of vehicles. | |
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| C. | | The alarm device shall be activated whenever the transmission control is in a reverse position and the engine is running. During each safety test a vehicle identified in subsection A-2 must carry one of its roll-on roll-off containers, without cargo, unless its alarm system is arranged to operate with and without a container in place. | |
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| D. | | The alarm device shall be controlled automatically, either inside or outside the device, so that when activated it emits 1-2 pulsations of sound each second (60-120 per minute). "On" and "off" times shall be about equal. An alarm "cut-off" or separate "squelch" control is prohibited. Any sound level (or "squelch") control on or in the alarm device shall conform to subsection G. | |
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| E. | | The emitted sound shall be loud enough to alarm drivers and pedestrians behind the truck. The tone of the emitted sound shall differ distinctly from the tones of traffic horns usually installed on the front part of a vehicle. | |
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| F. | | The alarm device and its connections and controls shall be constructed or protected so as to withstand unfavorable environmental conditions, including extremes of weather and temperature (-35 degrees F - 170 degrees F), moisture, road splash, abrasion, vibration, and dust. (Testing against all these requirements usually cannot be conducted in an Official Testing Station. However, the passing of a safety test shall not be construed as condoning the installation of any device or system that fails to alarm when in service under such extreme or unfavorable conditions. See the last paragraph of Section 13-101 in the Illinois Vehicle Code (Ill. Rev. Stat. 1987, ch. 95½, par. 13-101).) | |
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| G. | | The Department incorporates by reference the criteria and standards recommended in Society of Automotive Engineers Recommended Practice SAE J994b, May 1974, "Performance, Test, and Application Criteria for Electrically Operated Backup Alarm Devices." Copies of SAE J994b, May 1974, may be obtained at the following two locations:  1. SAE Headquarters, Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096  2. American National Standards Institute (ANSI), 1430 Broadway, New York, NY 10018  This incorporation by reference does not include any earlier or later editions or amendments.  The alarm device shall conform to each criterion and standard recommended in the above-referenced SAE J994b for a Type A, B or C device, as the case may be. Any manual sound level control shall not reduce sound below the levels specified for a Type C device. Any automatic sound level control shall adjust sound to at least 5 decibels above the surrounding noise level but no higher than the maximum levels specified for a Type A device, and may reduce device sound below the levels specified for a Type C device. Wording in SAE J994b such as "should", "should be", "it is recommended" or similar nonmandatory wording shall be read as setting forth a mandatory requirement. This does not exclude any option or alternative specified in SAE J994b. Each alarm device shall bear a permanently affixed label or nameplate that:  Identifies its manufacturer;  Identifies the type or types of device (e.g., Type A, Type B, Type A-C manual, Type A-E automatic, Type C, etc.); and  States the device conforms to each applicable SAE J994b criterion.  This label or nameplate shall constitute the manufacturer's certification to the People of the State of Illinois that the device conforms to this subsection G. | |
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| H. | | In addition, on a vehicle identified in subsection A, either the backup alarm or a separate alarm shall be activated automatically whenever the engine or motor that operates the refuse handling equipment is running and before a top-hinged tailgate has opened more than 6 inches. The alarm shall remain activated until parts return to within 6 inches, or less, of the normal position for traveling. A separate alarm system, if installed, shall conform to all requirements in subsections B and D-H except the SAE J994b6.2 requirement for activation by transmission control. | |
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| PROCEDURE – ALARM TEST | | | REJECT VEHICLE IF: |
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| Inspect for alarm:  Mounting, aim, & location (B); "ON" in reverse while engine runs (C);  "On" & "off" frequency & times; (D)  Loudness & tone (E);  Cut-off" or "squelch" control (D);  Secure & connections protected (F);  Label or nameplate wording (G);  "On" before a top-hinged tailgate, body, hoist or tilt frame moves opens 6 1/64 inch (H). | | | Alarm system does not conform to each requirement.  Label or nameplate wording:  is wrong or incomplete, or  Indicates Type D or E on alarm with;  No sound adjustment, or Manual sound adjustment. |

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| 14.35 | TOW TRUCKS | | |
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| A tow truck is *every truck designed or altered and equipped and used to push, tow, or draw vehicles by means of a crane, hoist, towbar, towline or auxiliary axle, or to render assistance to disabled vehicles.* (Ill. Rev. Stat. 1987, ch. 95½, par. 1-205.1). Notice that type of registration is not mentioned in this definition. | | | |
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| A. | | *Every tow-truck that is not owned by a governmental agency (i.e., federal, state or local) shall have a sign on each side with:*  1) *Letters at least 2 inches in height, that*  2) *Contrast with color of background, and show*  3) *Name, address, and telephone number of either its owner or its operator.* | |
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| B. | | *Every tow-truck shall carry at least:*  1) *1 broom,*  2) *1 shovel,*  3) *1 trash can at least 18 inches in height, and*  4) *1 fire extinguisher that displays:*  a) *rating of 4-B:C or larger, and*  b) *approval by Underwriters Laboratories or by other laboratory qualified by the Division of Fire Prevention for approving fire extinguishers.* | |
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| C. | | *Every tow-truck cab shall contain a certificate of either bond or insurance. The certificate shall show liability coverages of:*  1) *$100,000 or more for injury of any one person and $300,000 or more for injury of persons in any one accident, plus*  2) *$50,000 or more for damage to property other than a towed vehicle, plus*  3) *$15,000 or more for damage to any vehicle towed by the owner or operator shown on the sign required by subsection A or towed by the governmental agency that operates the tow-truck.* (Ill. Rev. Stat. 1987, ch. 95 ½, par. 12-606) | |
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| PROCEDURE | | | REJECT VEHICLE IF: |
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| Inspect truck and equipment to determine whether it is a tow-truck. | | | Does not meet requirements for tow-truck classification. |
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| Check each tow-truck for: | | |  |
| Identification signs (vehicle owned by governmental agencies are exempt) | | | Not properly identified, |
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| Broom shovel, trash can, fire extinguisher (must meet size and rating requirements. | | | Not properly equipped or, |
|  | | |  |
| Certificate and Coverages | | | Not properly Certified and Covered |

(Source: Amended at 13 Ill. Reg. 7973, effective May 15, 1989)