

Technical Amendment
November 10, 2022
EDUCATION AND LABOR CABINET
(Technical Amendment)

803 KAR 2:325. General industry standards.

RELATES TO: KRS Chapter 338, 29 C.F.R. 1910.333, 49 C.F.R. Part 571

STATUTORY AUTHORITY: KRS 338.051(3), 338.061

NECESSITY, FUNCTION, AND CONFORMITY: KRS 338.051(3) requires the Kentucky Occupational Safety and Health Standards Board to promulgate occupational safety and health regulations and authorizes the chairman to reference federal standards without board approval if necessary to meet federal time requirements. KRS 338.061 authorizes the board to establish, modify, or repeal standards and reference federal standards. This administrative regulation establishes standards that are enforced by the Department of Workplace Standards in general industry.

Section 1. Definitions.

- (1) "C.F.R." means Code of Federal Regulations.
- (2) "Employee" is defined by KRS 339.015(2).
- (3) "Employer" is defined by KRS 338.015(1).

Section 2. Batteries. Changing and charging storage batteries for automotive-type battery charging installations, in-vehicle charging of batteries, and battery jump starting of vehicles.

- (1)
 - (a) Facilities shall be provided for flushing electrolyte from the eyes and skin with water when changing or charging storage batteries.
 - (b) An adequate water supply shall be within twenty-five (25) feet of the work area.
- (2)
 - (a) A battery shall not be charged or discharged within a closed or unvented container.
 - (b) The batteries shall be charged:
 1. In the open;
 2. In a mechanically-ventilated space; or
 3. In a space providing at least twenty (20) cubic feet per ampere of charging capacity.
- (3)
 - (a) A face shield or goggles shall be provided and available at each charging unit.
 - (b) The use of the face shield or goggles shall be required for connection and disconnection of vehicle or charger leads to the battery terminals and for the addition or pouring of electrolyte.
- (4) Employees shall wear face shields or goggles during installation and removal of batteries from vehicles, while connecting and disconnecting battery charger or jumper cable leads, or while handling electrolyte.
- (5) Employees shall be instructed to:
 - (a) Turn off the battery charger to connect or disconnect the battery;
 - (b) Wash acid spills immediately; and
 - (c) Flush electrolyte from eyes and skin with water for ten (10) minutes.

Section 3. Off-highway Motor Vehicles and Equipment.

- (1) General requirements.
 - (a) Heavy machinery, equipment, or parts suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.

- (b)
 - 1. Bulldozers and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use.
 - 2. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
- (c) Whenever the equipment is parked, the parking brake shall be set.
- (d) Equipment parked on inclines shall have the wheels chocked and the parking brake set.
- (e) All cab glass shall be safety glass, or equivalent, that introduces no visible distortion affecting the safe operation of any machine covered by this section.
- (f) All equipment covered by this section shall comply with the requirements of 29 C.F.R. 1910.333 when working or being moved in the vicinity of power lines or energized transmitters.
- (2) Motor vehicles.
 - (a) Coverage. Motor vehicles covered by this section are those vehicles that operate within an off-highway job site not open to public traffic. The requirements of this section do not apply to equipment in subsection (3) of this section.
 - (b) General requirements.
 - 1. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system.
 - 2. These systems may use common components, and shall be maintained in operable condition.
 - (c) Whenever visibility conditions warrant additional light, all vehicles, or combinations of vehicles, in use shall be equipped with at least two (2) headlights and two (2) taillights in operable condition.
 - (d) All vehicles, or combination of vehicles, shall have brake lights in operable condition regardless of light conditions.
 - (e) All vehicles shall be equipped with an adequate audible warning device at the operator's station and in an operable condition.
 - (f) Motor vehicle equipment shall not be used having an obstructed view to the rear unless:
 - 1. The vehicle has a reverse signal alarm audible above the surrounding noise level;
 - or
 - 2. The vehicle is backed only when an observer signals that it is safe to do so.
 - (g)
 - 1. All vehicles with cabs shall be equipped with windshields and powered wipers.
 - 2. Cracked and broken glass shall be replaced.
 - 3. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshields shall be equipped with operable defogging or defrosting devices.
 - (h) All haulage vehicles loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield or canopy adequate to protect the operator from shifting or falling materials.
 - (i) Tools and material shall be secured to prevent movement when transported in the same compartment with employees.
 - (j) Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees carried.
 - (k) The employer shall provide and insure the use of seat belts and anchorages meeting the requirements of 49 C.F.R. Part 571, Department of Transportation, Federal Motor Vehicle Safety Standards.
 - (l) Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental

lowering of the body while maintenance or inspection work is being done.

(m) Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device that prevents accidental starting or tripping of the mechanism.

(n) Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.

(o)

1. Each employer shall assure the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use:

- a. Service brakes, including trailer brake connections;
- b. Parking system brake;
- c. Brakes;
- d. Tires;
- e. Horn;
- f. Steering mechanism;
- g. Coupling devices;
- h. Seat belts;
- i. Operating controls; and
- j. Safety devices.

2. All defects shall be corrected before the vehicle is placed in service.

3. These requirements shall also apply to equipment such as lights, reflectors, windshield wipers, defrosters, and fire extinguishers.

(3) Material handling equipment.

(a) General. The requirements of this subsection shall apply to scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.

(b) Seating and seat belts.

1. Each employer shall insure safe seating with seat belts on all equipment covered by this section, and shall meet the requirement of J386, Society of Automotive Engineers Handbook, 1986, Operator Restraint Systems for Off-road Work Machines.

2. Seat belts for agricultural and light industrial tractors shall meet the seat belt requirements of Society of Automotive Engineers J1194, Society of Automotive Engineers Handbook, 1986, Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors.

(c) Seat belts need not be provided for equipment designed only for stand-up operation.

(d) Seat belts need not be provided for equipment that does not have rollover protective structure or adequate canopy protection.

(e) Audible alarms.

1.

a. All bidirectional machines, such as rollers, compactors, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction.

b. The horn shall be maintained in an operative condition.

2. Material handling equipment or compacting equipment that has an obstructed view to the rear shall not be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

(f) Scissor points. Scissor points on all front-end loaders that constitute a hazard to the operator during normal operation shall be guarded.

Section 4.

E_{is} = Energy input to be absorbed during side loading.

$E'_{is} = 723 + 0.4 W$ ft.-lb. ($E'_{is} = 100 + 0.12W'$, m.-kg.).

E_{ir} = Energy input to be absorbed during rear loading.

$E'_{ir} = 0.47 W$ ft.-lb. ($E'_{ir} = 0.14 W'$, m.-kg.).

W = Tractor weight as prescribed in subsection (3)(e)1 and (e)3, in lb. (W' , kg.). L = Static load, lb. (kg.).

D = Deflection under L , in. (mm.).

L - D = Static load-deflection diagram.

$L_m D_m$ = Modified static load-deflection diagram (Figure W-20). To account for increase in strength due to increase in strain rate, raise L in plastic range to $L \times K$.

K = Increase in yield strength induced by higher rate of loading (1.3 for hot rolled low carbon steel 1010-1030). Low carbon is preferable; however, if higher carbon or other material is used, K must be determined in the laboratory. Refer to Charles H. Norris, et al., Structural Design for Dynamic Loads (1959), p. 3.

L_{max} = Maximum observed static load.

Load = Point on L - D curve where observed static load is $Limit 0.8 L_{max}$ (refer to Figure W-19).

E_u = Strain energy absorbed by the frame, ft.-lb. (m.-kg.) area under $L_m D_m$ curve.

FER = Factor of energy ratio, $FER = E_u/E_{is}$ also = E_u/E_{ir}

P_b = Maximum observed force in mounting connection under static load, L , lb. (kg.).

FSB = Design margin for mounting connection $FSB = (P_u/P_b)-1$.

H = Vertical height of lift of 4.410 lb. (2,000 kg.) weight, in. (H' , mm.). The weight shall be pulled back so that the height of its center of gravity above the point of impact is defined as follows: $H = 4.92 + 0.00190 W$ or ($H' = 125 + 0.107 W'$) (Figure W-24).

Fire Apparatus and Fire Department Facilities.

- (1) Scope. This section shall apply to industrial fire departments and private, public or contractual type fire departments. This section shall not apply to volunteer fire departments.
- (2) Persons riding on fire apparatus. A person riding on fire apparatus shall be secured to the vehicle by seat belts or safety harnesses when the vehicle is in motion.
- (3) Inspection, maintenance, and repair of vehicles.
 - (a) All fire department vehicles shall be inspected at least weekly and within twenty-four (24) hours after any use or repair to identify and correct unsafe conditions.
 - (b) A fire department vehicle found to be unsafe shall be placed out of service until repaired.
 - (c) After being repaired, the vehicle shall be inspected prior to being placed back in service.
 - (d) The inspection shall include:

1. Tires, brakes, warning lights and devices, headlights and clearance lights, windshield wipers and mirrors;
 2. Starting the apparatus, and verification of the operation of pumps and other equipment; and
 3. Inspection of the safety equipment carried on fire department vehicles.
- (e) A fire department shall maintain inspection, maintenance, repair, and service records for all vehicles and equipment used for emergency operations.
- (4) Facility safety.
- (a) Sleeping areas in fire stations shall:
1. Be separated from vehicle storage areas by at least one (1) hour fire resistive assemblies; or
 2. Have operable fire suppression or operable smoke detection systems.
- (b) A fire station shall have a system capable of ventilating.

Section 5. Material Incorporated by Reference.

- (1) The following material is incorporated by reference:
- (a) J386, Society of Automotive Engineers Handbook, "Operator Restraint Systems for Off-road Work Machines", 1986; and
 - (b) J1194, Society of Automotive Engineers Handbook, "Rollover Protective Structures (ROPS) for Wheeled Agricultural Tractors", 1986.
- (2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Kentucky Education and Labor Cabinet, Mayo-Underwood Building, 3rd Floor, Frankfort, Kentucky 40601, Monday through Friday, 8:00 a.m. to 4:30 p.m. EST. The Education and Labor Cabinet Web site is www.labor.ky.gov.
- (3) The Society of Automotive Engineers Web site is SAE.org.
- (3 Ky.R. 793; 4 Ky.R. 104; eff. 8-3-1977; 231; eff. 2-1-1978; 6 Ky.R. 585; eff. 7-2-1980; 8 Ky.R. 919; eff. 4-7-1982; 10 Ky.R. 299; eff. 12-2-1983; 12 Ky.R. 252; eff. 9-10-1985; 13 Ky.R. 61; eff. 8-12-1986; 18 Ky.R. 165; 691; eff. 9-6-1991; TAm eff. 8-9-2007; TAm eff. 9-8-2011; Recodified from 803 KAR 2:015, 1-7-2021; 47 Ky.R. 2697; 48 Ky.R. 1539; eff. 2-1-2022; TAm eff. 11-10-2022.)

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