

**WAC 296-96-24255 Drive machines, sheaves and brakes.** (1) All new winding drums, traction sheaves, overhead sheaves and deflecting sheaves shall:

(a) Be made of cast iron or steel;

(b) Have diameters at least 30 times the diameter of the wire hoisting ropes;

EXCEPTION: If 8 x 19 steel ropes are used, drum and sheave diameters may be reduced to 21 times the diameter of the hoisting rope.

(c) Have machined rope grooves.

(2) The factor of safety, based on the static load (the rated load plus the weight of the car, ropes, counterweights, etc.) to be used in the design of driving machines and sheaves, shall be at least 5.

(3) Set screw type fastenings shall not be substituted for keys or pins if connections are subject to torque or tension.

(4) Gears:

(a) When connecting drums or sheaves to the main driving gear, friction gears, clutch mechanisms or couplings shall not be used.

(b) Worm gears having cast iron teeth shall not be used.

(5) Brakes:

(a) Electric brakes shall be of the friction type set by springs and shall release electrically.

(b) All brakes shall be able to stop and hold a car carrying 125 percent of its rated load.

(c) At least one brake shall be mounted on the load side of the driving machine's worm shaft. On indirectly driven lifts, brakes shall engage when the driving machine fails.

(d) If a single ground or short-circuit, a counter-voltage or a motor field discharge occurs and the operating device is set in the stop position, the brake magnet shall set the brake.

(6) Driving machines:

(a) A driving machine may be mounted on a conveyance chassis or in a remote location. However, if mounted in a remote location all sheaves and sprockets shall be guarded and positioned so the hoisting ropes and chains remain properly aligned while the conveyance is in use.

(b) Screw type machines shall not be used.

(c) Hydraulic driving machines shall conform to ASME A17.1.

(d) Roped-hydraulic machines may be used.

(e) Rack and pinion drive may be used.

EXCEPTION: Existing inclined private residence conveyances for transporting property may use wrapped cable drums as long as they do not show signs of excessive wear.

[Statutory Authority: Chapter 70.87 RCW. WSR 18-18-070, § 296-96-24255, filed 8/31/18, effective 10/1/18.]