4553 W. Lexington St. | Chicago, IL | 60624
www.hydrasafebrake.com
(630) 577-7979
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Spec Language

A. Ascending Car Overspeed Protection

1. Ascending car overspeed protection shall be provided to prevent the car from striking the hoistway overhead structure as a result of a failure in
    a. The electric driving-machine motor, brake, coupling, shaft, or gearing.
    b. The control system.
    c. Any other component upon which the speed of the car depends, except the suspension ropes and the drive sheave of the traction machine.
2. This device shall detect an ascending car overspeed condition at a speed not greater than 10% higher than the speed at which the car governor is set to trip.
3. Once actuated by overspeed, the overspeed detection means shall remain actuated until manually reset, and the car shall not start or run unless the detection means is reset.
4. If the overspeed detection means requires electrical power for its functioning, a loss of electrical power to the ascending car overspeed detection and control means shall cause the immediate activation of an emergency braking device.

B. Unintended Car Movement

1. Protection shall be provided with a device to prevent unintended car movement away from the landing with the hoistway door not in the locked position and the car door not in the closed position, as a result of failure in
    a. The electric driving-machine motor, brake, coupling, shaft, or gearing.
    b. The control system.
    c. Any other component upon which the speed of the car depends, except the suspension ropes and the drive sheave of the traction machine.
2. Once actuated, the unintended car movement device shall remain actuated until manually reset, and the car shall not start or run unless the detection means is reset.
3. If the unintended car movement device requires electrical power for its functioning, a loss of electrical power to the unintended car movement device shall cause the immediate activation of an emergency braking device.

C. Emergency Brake

1. Car frame members, brackets, and their connections subject to forces due to the application of the emergency brake shall be designed to withstand the maximum forces developed during the retardation phase of emergency braking so that the resulting stresses due to emergency braking and all other loads acting simultaneously, if applicable, shall not exceed 190 MPa (27,500 psi).
2. Provide a mechanical device, independent of the normal braking system, that will stop the elevator should it overspeed or move in an unintended manner.
3. The device used may be arranged to apply force to the car or counterweight rails, suspension or compensation ropes, drive sheave or brake drum.
4. The emergency brake shall be provided with a marking plate indicating the range of total masses (car with attachments and its load) for:
    a. The range of speeds at which it is set to operate.
    b. Rail lubrication requirements that may be critical to the performance.

D. Elevator System Balancing

1. The verification of added weight on the car per device shall be taken into consideration when calculating the balanced car conditions.
2. Confirmation of the 5% rule shall also be taken into consideration.
    a. Increase in the Dead Weight of the Car. Where an alteration results in an increase in the deadweight of the car that is sufficient to increase the sum of the dead-weight and rated load. as originally installed, by more than 5%, the installation shall conform to 3.14-3.17

E. Guide Rails

1. Allowable Stresses Due to Emergency Braking. Guide rails, brackets, supports, and their fasten-ings subject to forces due to the application of the emergency brake shall be designed to withstand the maximum forces developed during the retardation phase of emergency braking so that the resulting stresses due to the emergency braking and all other loading acting simultaneously, if applicable, shall not exceed 190 MPa (27,500 psi).