Federal Railroad Administration, DOT

§ 238.427 Suspension system.

(d) Electromagnetic interference and compatibility. (1) The operating railroad shall ensure electromagnetic compatibility of the safety-critical equipment systems with their environment. Electromagnetic compatibility can be achieved through equipment design or changes to the operating environment.

(2) The electronic equipment shall not produce electrical noise that interferes with trainline control and communications or with wayside signaling systems.

(3) To contain electromagnetic interference emissions, suppression of transients shall be at the source wherever possible.

(4) Electrical and electronic systems of equipment shall be capable of operation in the presence of external electromagnetic noise sources.

(5) All electronic equipment shall be self-protected from damage or improper operation, or both, due to high voltage transients and long-term over-voltage or under-voltage conditions.

§ 238.427 Suspension system.

(a) General requirements. (1) Suspension systems shall be designed to reasonably prevent wheel climb, wheel unloading, rail rollover, rail shift, and a vehicle from overturning to ensure safe, stable performance and ride quality. These requirements shall be met:

(i) In all operating environments, and under all track conditions and loading conditions as determined by the operating railroad; and

(ii) At all track speeds and over all track qualities consistent with the Track Safety Standards in part 213 of this chapter, up to the maximum operating speed and maximum cant deficiency of the equipment.

(2) All passenger equipment shall meet the safety performance standards for suspension systems contained in part 213 of this chapter, or alternative standards providing at least equivalent safety if approved by FRA under the provisions of §238.21. In particular—

(i) Pre-revenue service qualification. All passenger equipment shall demonstrate safe operation during pre-revenue service qualification in accordance with §213.345 of this chapter and is subject to the requirements of §213.329 of this chapter.

(ii) Revenue service operation. All passenger equipment in service is subject to the requirements of §§213.329 and 213.333 of this chapter.

(b) Carbody acceleration. A passenger car shall not operate under conditions that result in a steady-state lateral acceleration greater than 0.15g, as measured parallel to the car floor inside the passenger compartment. Additional carbody acceleration limits are specified in §213.333 of this chapter.

(c) Truck (hunting) acceleration. Each truck shall be equipped with a permanently installed lateral accelerometer mounted on the truck frame. If truck hunting is detected, the train monitoring system shall provide an alarm to the locomotive engineer, and the train shall be slowed to a speed at least 5 mph less than the speed at which the truck hunting stopped. Truck hunting is defined in §213.333 of this chapter.