

The following are proposed definitions to be added to Handbook 44, Appendix D to support the Weigh-In-Motion code.

weigh-in-motion (WIM). A process of estimating a moving vehicle's gross weight and the portion of that weight that is carried by each wheel, axle, or axle group, or combination thereof, by measurement and analysis of dynamic vehicle tire forces.

axle. The axis oriented transversely to the nominal direction of vehicle motion, and extending the full width of the vehicle, about which the wheel(s) at both ends rotate.

axle-group load. The sum of all tire loads of the wheels on a group of adjacent axles; a portion of the gross-vehicle weight.

axle load. The sum of all tire loads of the wheels on an axle; a portion of the gross-vehicle weight.

axle spacing. The distance between the centers of any two axles. When specifying axle spacing, you also need to identify the axles used.

single-axle load. The load transmitted to the road surface by the tires lying on the same longitudinal axis (that axis transverse to the movement of the vehicle and about which the wheels rotate).

tandem-axle load. The load transmitted to the road surface by the tires of two single-axles lying on the same longitudinal axis (that axis transverse to the movement of the vehicle and about which the wheels rotate).

triple-axle load. The load transmitted to the road surface by the tires of three single-axles lying on the same longitudinal axis (that axis transverse to the movement of the vehicle and about which the wheels rotate).

Weigh-in-Motion Screening Scale . A WIM system used to identify potentially overweight vehicles.

Wheel weight. The weight value of any single or set of wheels on one side of a vehicle on a single axle.

WIM System. A set of sensors and supporting instruments that measure the presence of a moving vehicle and the related dynamic tire forces at specified locations with respect to time; estimate tire loads; calculate speed, axle spacing, vehicle class according to axle arrangement, and other parameters concerning the vehicle; and process, display, store, and transmit this information. This standard applies only to highway vehicles.