



Standard Terminology Relating to the Characteristics and Performance of Tires¹

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1. Scope

1.1 This terminology primarily covers definitions for technical terms that occur in ASTM Committee F09 standards on the characteristics and performance of tires.

1.2 Definitions for terms that may also be used in other technologies, such as vehicle behavior, are worded to cover both areas.

1.3 When any definition in this terminology (that does not have the limiting phrase) is quoted out of context, editorially insert the limiting phrase *in a tire* after the dash following the term. This will properly limit the field of application of the term and definition.

2. Terminology

2.1 Definitions:

accelerometer, *n*—an instrument that senses inertial reaction to measure linear or angular acceleration. **F811**

accuracy, *n*—a measurement concept that describes the degree of correspondence between an average measured value and an accepted reference or standard value for the object, material or phenomenon under test. **F1082**

age, *v*—to apply conditions so as to promote change of material properties. **F2838**

aging, accelerated laboratory (also: aging, laboratory), *n*—increased rate of tire material property changes under specified conditions, including temperature, inflation pressure, oxygen concentration in the filling gas, and time. **F2838**

aging, in-service, *n*—material property changes within tires due to consumer usage. **F2838**

aging, oven, *n*—accelerated laboratory aging in an elevated temperature environment. **F2838**

aging, thermal oxidative, *n*—the process whereby chemical and physical material properties of a tire change with exposure to heat and oxygen. **F2838**

aligning stiffness [FL/γ], *n*—of a tire, the rate of change of tire aligning torque with respect to change in tire slip angle, usually evaluated at zero slip angle.

aligning stiffness coefficient, *n*—of a tire, the ratio of tire aligning stiffness to the tire normal force.

aligning torque [FL], *n*—of a tire, the component of a tire moment vector tending to rotate a tire about the *Z*-axis, positive clockwise when looking in the positive direction of the *Z*-axis. **F403, F424**

alignment, *n*—the adjustment of various parts of the vehicle's suspension system to ensure proper handling stability and to minimize abnormal tire treadwear. **F1922**

all-season tread, *n*—tread design providing dry, wet, and snow traction performance for an optimized balance for year-round performance and which may meet the Rubber Manufacturers Association (RMA) definition for an M&S, M+S, M/S, MS, etc. marked tire (see RMA “Snow Tire Definitions for Passenger and Light Truck (LT) Tires”). **E1136, F2493**

analysis, *n*—an act of inspecting the S/H image and associating this image with a known calibration reference. **F1364**

anomaly, *n*—a change in the strain pattern of the rubber surface of a straining block as a result of applied stress brought about through a change in atmospheric pressure on the rubber surface. **F1364**

anti-lock braking system (ABS), *n*—a collection of sensing and control hardware installed on a vehicle to prevent wheel lock-up during brake application. **F1649**

average tire tread depth [L], *n*—the average of all tire groove (void) depth measurements. **F1016**

axle efficiency [nd], *n*—in a vehicle, the ratio of the sum of the wheel torques at the driven wheels to the product of driveshaft torque and axle ratio.

balancing, *n*—a process to correct for heavy or light areas of a tire and wheel assembly. **F1922**

bandwidth [$1/T$], *n*—the range of frequencies within which certain performance characteristics occur; specific limits normally apply. **F811**

¹ This terminology is under the jurisdiction of ASTM Committee F09 on Tires and is the direct responsibility of Subcommittee F09.94 on Terminology.

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