



Technical Bulletin

Glossary of Tire & Rubber Terminology

Abrasion Resistance - The ability to resist mechanical wear.

Abrasion - The process of wearing down or rubbing away by means of friction.

Absorption - The act or process of one substance absorbing another substances liquid, gas or vapor into it's interior.

Accelerated Life Test - Test conditions designed to reproduce, in a shortened time period, the deterioration a product will obtain in its normal conditions.

Accelerator - A chemical which speeds up the vulcanization of an elastomer.

Acid Resistant - Resistance to the action of acids.

Actual Size - The precise size of an o-ring or seal in decimal dimensions, inches or millimeters, including tolerances.

Adhesion - The tendency of a material to cling to a contact surface.

Aging - Exposing materials to an environment for a period of time.

Air Checks - Surface markings resulting from the trapping of air between the material being cured and the mold surface.

Airtight Synthetic Rubber - Formulated with virtually impermeable butyl rubber, this material replaces the inner tube in modern, tubeless tires.

Anti-Extrusion Ring or Device - A washer like device of a relatively hard material placed in the gland between the o-ring and groove side wall also called a back up ring.

Antioxidant - An organic compound or substance that inhibits or slows the oxidation process.

APS - An advanced silica-based winter rubber compound that helps provide flexibility where the tread surface makes contact with the road.

Aramid - A synthetic fabric used in some tires that is (pound-for-pound) stronger than steel.

AS-568A - Aerospace standard dash numbering system used to assign o-ring sizes.

Aspect Ratio - The relationship of a tire's sidewall height to its section width.

Asphalt-Rubber Concrete - implies the use of an asphalt-rubber binder with gap or open graded aggregate gradations in a hot mix application.

Asymmetrical Tread Design (AD) - Different tread patterns featured on either side of the tread that enhance and optimize performance for both wet and dry handling. The inside shoulder has more grooves for water evacuation and massive tread blocks on the outside shoulder make for maximum handling.

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Glossary of Tire & Rubber Terminology (con't)

Atmospheric Cracking - Cracks on the surface of an o-ring because of exposure to atmospheric conditions.

Automobile Tires - tires with an outside diameter less than 66 cm – 26", used on automobiles, pickups, and light trucks.

Axial Seal - An o-ring that seals on a plane perpendicular to its axis.

Axial Squeeze - Compression on the top and bottom of the o-rings surface.

Back-Up Ring - A washer like device of a relatively hard material placed in the gland between the o-ring and groove side wall, also called a back up ring.

Bead - The section of the tire that sits on the wheel. Inside, there is a round hoop of steel wires, wrapped or reinforced by body ply cords, that clamps the tire firmly against the wheel rim.

Bead Chafer - A key component of the tire that is the contact point between the tire and the wheel, designed to withstand forces the wheel puts on the tire during mounting as well as the dynamic forces of driving and braking.

Bead Filler - Responsible for transferring propulsion and braking torque from the wheel rim to the road surface contact area.

Bead Seat - The edge of the rim that creates a seal between the tire bead and the wheel.

Bead Tension Structure - Two sidewall plies wrapped around each bead wire in opposite directions providing lateral stability but flex to absorb road irregularities.

Belt - A rubber-coated layer of cords located between the body plies and the tread, most commonly made from steel but may also be made from fiberglass, rayon, nylon, polyester or other fabrics.

Belted Bias Tires - Tires constructed similar to bias tires, but with reinforcing belts between the casing plies and the tread.

Bias-Ply - A type of tire with crossed layers of ply cord running diagonally to the center line of the tread.

Blemish - Deformity on the surface of a molded product.

Bolt Circle or Bolt Pattern - The diameter of an imaginary circle drawn through the center of each lug nut hole and then measured from two holes that are directly across from each other. The measurement is used in selecting the proper wheel for replacement.

Brittleness - The tendency to crack when deformed.

Buffing Waste - high quality scrap tire rubber which is a byproduct from the conditioning of tire carcasses (casings) in preparation for re-treading.

BUNA N - The copolymer butadiene and acrylonitrile also referred to as NBR or Nitrile.

BUNA S - The copolymer of butadiene and acrylonitrile also referred to as SBR.

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Butyl - Synthetic rubber exhibiting very low permeability to gases; a copolymer of isobutylene and isoprene.

Carbon Black - This is a reinforcing filler which, when incorporated into the tire rubber compound, gives it a high resistance to wear.

Carcass - The supporting structure of the tire consisting of plies anchored to the bead on one side and running in a radius to the other side and anchoring to the bead. Also called casing.

Carcass Ply - Made up of thin textile fiber cables bonded into the rubber. These cables are largely responsible for determining the strength of the tire.

Carrying Capacity - At a given air pressure, how much weight each tire is designed to carry. Each tire size has a load inflation table to ensure the inflation pressure used is sufficient for the vehicle axle load.

Centrifugal Force or Lateral Force - The sideways acceleration, measured in g's, of an object in curvilinear motion. As a car traverses a curve, centrifugal force acts on it and tries to pull it outward. To counteract this, the tires develop an equal and opposite force acting against the road.

Chafer - Abrasion resistant rubber coated material which helps prevent a tire's beads from rim damage and chafing.

Coefficient of Thermal Expansion - Average material expansion per one degree change in temperature, expressed as a fraction of the initial dimension.

Cold Flexibility - O-Ring flexibility (resistance to cracking and breaking) at low temperatures.

Cold Resistant - The ability of an o-ring to function at low temperatures.

Compliance Cushion - An added rubber tire component between the tread and belt that absorbs road irregularities for a smoother ride.

Compound - A mixture of an elastomer and other ingredients to produce a rubber like material.

Compression Molding - Thermoset molding technique in which the uncured rubber compound is put in a heated open mold cavity and closed under pressure. The material then flows completely filling the cavity.

Compression Set - The amount, expressed as a percentage of deflection, a rubber specimen fails to return to its original shape after being released from a constant compressive load.

Contact Patch - The area in which the tire is in contact with the road surface. Also called footprint.

Copolymer - An elastomer composed of two dissimilar monomers (i.e. SBR from Styrene and Butadiene).

Cord - The strands of fabric forming the plies or layers of the tire. Cords may be made from polyester, rayon, nylon, fiberglass or steel.

Cornering Force - The force on a turning vehicle's tires - the tire's ability to grip and resist side force - that keeps the vehicle on the desired arc.

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Corrosion - Progressive wearing away of a surface because of a chemical reaction.

Crackermill - Machinery that tears apart scrap tire shreds by passing the material between rotating corrugated steel drums, reducing the size of the rubber to a crumb particle.

Crown - the center section of a tire's tread.

Crown Plies - Provide the rigid base for tire tread which allows for good fuel economy. Also provide centrifugal and lateral rigidity to the tire, and are designed to flex sufficiently for a comfortable ride.

Crumb Rubber Modifier (CRM) - a general term for scrap tire rubber that is reduced in size and used as a modifier in asphalt paving materials.

Cryogenically Ground Rubber - a process that freezes the scrap tire rubber and crushes the rubber to the particle size desired.

Curb Guard - extra rubber running around the sidewall of a tire. It is there to protect the side of the tire and the wheel face from any damage that may come as a result of hitting a curb.

Cure - Another term for "vulcanization". A heat induced process resulting in the cross linking of polymer chains.

Dash Number - A three digit number preceded by a dash as specified by S.A.E. Aerospace Standard 568A to indicate the o-ring size based on inside diameter and cross-section.

Deflashing - Any of various processes used to remove the waste edge from a molded rubber part.

Deflection - The tread and sidewall flexing where the tread comes into contact with the road.

Devulcanization - The process by which the sulfur molecules are de-linked from the rubber molecules and stabilized, thereby facilitating the formation of new cross-linking structures with reapplication of heat and pressure.

Differential Pressure - The difference in the amount of force being exerted on the high-pressure side of a seal relative to the low pressure side.

DOT Markings - A code molded into the sidewall of a tire signifying that the tire complies with U.S. Department of Transportation motor vehicle safety standards.

Dry Process - any method that mixes the crumb rubber modifier (CRM) with the aggregate material before this mixture is charged with the asphalt cement. This method only applies to hot-mix asphalt production.

Dual Tread Compounding - Employs two compound types across the tread, the outside for dry traction and the inside for wet traction.

Duals - Tires placed side by side on an axle to increase both carrying capacity and traction capability; four tires across an axle.

Durometer - An instrument used to measure hardness. Specific to tires, a durometer typically measures the hardness of the tread compound. Durometer can also refer to the hardness result.

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Dynamic Seal - A seal used in an environment that subjects it to movement.

ECE Symbol - The Economic Commission of Europe develops motor vehicle requirements. ECE-approved tires must meet standards for physical dimensions, branding requirements and high-speed endurance regulations.

Elasticity - The tendency of a material to return to its original shape after deformation.

Elastomer - A general term used to describe both natural and synthetic polymers possessing the resilience to return to its original shape after deformation.

Elongation - Percentage increase in original length of a specimen produced by a tensile force applied to the specimen.

Expanded Rubber - Cellular rubber made from a solid rubber compound and having closed cells.

Extender Oil - An aromatic oil used to supplement the reaction of the asphalt cement and the crumb rubber modifier (CRM).

Extrusion - The process under which pressure is forced through the opening of a die in order to obtain a desired cross sectional shape.

Face - Front surface of a seal.

Filament at Zero - Individual, spiral-wrapped nylon or aramid/nylon reinforcing filaments can be precisely placed in specific portions or across the entire tread area of a tire, atop the steel belts banded at zero degrees. Not only does this help retain tire shape, but it also enhances ride quality and steering precision.

Filler - Relatively inexpensive and inert material added to an elastomer to reinforce or modify properties.

Flash - The excess material protruding from the surface of a molded part at the mold junctions.

Flaws - Surface imperfections that occur infrequently.

Flexural Strength - Ability of a material to flex without permanent distortion or breaking.

Footprint - the area of the loaded tire's tread that is in contact with the road. This is also called the contact patch.

Free Radius - The radius of the tire/wheel assembly that is not deflected under load.

Gasket - Static seal effected when a deformable material is sandwiched and compressed between two mating surfaces.

Gate Mark - A raised spot or small depression on the surface of an injection or transfer molded part where gates interface the cavity.

Gates - The openings in an injection or transfer mold that ensure even flow into the cavity.

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Gland - Complete cavity into which an o-ring is installed.

Granulated Crumb Rubber Modifier (CRM) - Cubical, uniformly shaped, cut crumb rubber particles with a low surface area, which is generally produced by a granulator.

Granulator - A process that shears apart scrap tire rubber, cutting the rubber with revolving steel plates that pass at a close tolerance, reducing the rubber to small particles.

Groove - 1) The space between two adjacent tire tread ribs; also called tread grooves, or 2) the machined glandular recess into which an o-ring is fitted.

Ground Crumb Rubber Modifier (CRM) - Irregularly shaped, torn crumb rubber particles with a large surface area, generally produced by a crackermill.

Heat Aging - Loss of physical properties as a result of exposure to heat.

Heat Resistance - The ability of rubber to retain its properties even under the destructive influence of heat.

Heteropolymer - Polymer composed of differing monomers.

Hypalon - A synthetic rubber that is completely resistant to ozone attack under the most extreme conditions and also possesses excellent color stability including the action of acids, bases, and many other chemicals.

Hysteresis - When rubber stretches and compresses, it does not render all the energy applied to it because energy is lost due to internal friction. The mechanical energy is transformed into thermal energy and the heat produced leads to both damage and energy loss.

Injection Molding - Process where preheated rubber is injected under pressure through a series of runners and into a closed mold cavity.

Inner Liner - The innermost layer of a tubeless tire, compounded with virtually impermeable butyl rubber. Some air loss over time will occur.

Kilopascal (kPa) - The metric unit for air pressure. One PSI is equal to 6.9 kPa.

Lateral Weight Transfer - When a vehicle travels through a curve, weight is transferred from the wheels on the inside of the curve to the wheels on the outside of the curve. This is a result of the centrifugal force, or lateral force acting on the vehicle.

Leakage Rate - The rate at which a fluid passes through a barrier.

Life Test - A laboratory test of the amount and duration of a products resistance to destructive forces.

Load Range - Defines a range of maximum loads that tires can carry at a defined pressure.

Loaded Radius - The measurement in inches from the wheel axle centerline to the ground when the tire is properly inflated for the load.

Loaded Section Height - The height of the section of the tire that is making contact with the road.

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Low Temperature Flexibility - The ability of an elastomeric product to be flexed at low temperatures without cracking.

Match Mounting - Technique that matches the harmonic high point of a tire with a low point of the wheel to insure optimal ride performance.

Memory - Ability of an elastomeric material to return to its original shape after deformation.

Metric Tire Size System - One system used to describe a tire's size. It is the standard system of the ETRTO (European Tire and Rim Technical Organization).

Modulus of Elasticity - Ratio of the stress to the strain as measured on a rubber specimen.

Mold Cavity - Hollow space of the mold within which the uncured rubber compound is shaped and cured to the desired shape of the product.

Mold Shrinkage - Dimensional loss in a molded rubber product that occurs during cooling after it has been removed from the mold.

Natural Rubber - Rubber obtained from latex of the rubber tree.

Neoprene - A polymer of chloroprene and is prepared from coal, salt and limestone. Neoprene is a synthetic rubber used in weather-resistant products, adhesives, shoe soles, sportswear, paints, and rocket fuels.

N. H. T. S. A. - National Highway Traffic Safety Administration.

Nibbling - Progressive mode of seal failure that occurs when excessive pressure forces a portion of the o-ring into a clearance gap.

Nitrile (Buna-N) - Copolymer of butadiene and acrylonitrile presently the industry's most common elastomer.

Nominal Rim Diameter - The diameter of a tire rim, given in nearest whole numbers (e.g. 15 in.).

Nominal Size - Approximate size of an o-ring or seal in fractional dimensions.

Non-Fill - A defect in a finished rubber product caused by the rubber failing to completely fill the mold.

Occlusion - The mechanical trapping of gasses, liquids or solids within the folds of a substance during working or solidification.

Oil Resistant - Ability of a vulcanized rubber to withstand the swelling and deteriorating effects of various type of oils.

O-Ring - Solid elastomer ring seal of circular cross-section.

Oscillating Seal - In this application the inner or outer member if the gland moves in an arc around the axis of a shaft, most commonly used in faucets.

Oxidation Resistance - The ability of rubber to withstand the reaction of atmospheric oxygen.

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Oxidation - The reaction of rubber with oxygen.

Ozone Resistance - The ability of rubber to withstand exposure to ozone without cracking or breaking.

Packing - A collar or gasket used to seal mechanical devices to retain fluids under pressure or seal out foreign matter.

Permanent Set - Amount of deformation in a rubber part after a distorting load has been removed.

Permeability - Measure of the ease with which a liquid or gas can pass through a material.

Plasticisers - Liquids which are used to soften rubber.

Ply - A rubber-coated layer of fabric containing cords that run parallel to each other and make up the structure of a tire. Layers of this material are called plies, and they extend from bead to bead, between the inner liner, and belts or tread. Plies are usually reinforced with either textile or steel cords.

P-Metric - Uniform designation of tire sizes, in metric measurements originally introduced by American tire manufacturers in 1977; commonly called P-metric series.

Pneumatic Tire - A tire designed to be filled with air.

Polymer - A long molecular chain material formed by the chemical combination of many similarly structured, small molecular units. It is a general term used to describe all rubbers and plastics.

Profile - refer to aspect ratio.

Proprietary Blended Compounding - Technology that creates a uniform compound blend that helps provide outstanding all-around performance in wet and dry conditions.

Quad Ring - Solid elastomeric ring seal with a four lobed cross-section.

Radial Ply Tire - A type of tire with plies arranged so cords in the body run at 90-degree angles to the center line of the tread.

Radial Seal - O-ring or seal having compression applied to its outside and inside diameters.

Radial Squeeze - Compression on an o-ring's outside and inside diameter.

R-Compounding - A racing-derived tire compound optimized for on-track performance and designed for maximum dry grip and repeated heat cycles.

Reaction - The interaction between asphalt cement and crumb rubber modifier (CRM) when blended together at a certain temperature for a certain period of time. The reaction, more appropriately defined as polymer swell, is not a chemical reaction. It is the absorption of aromatic oils from the asphalt cement into the polymer chains of the crumb rubber.

Reciprocating Seal - Dynamic seal used to seal piston or seals.

Recycled Tire Rubber - Rubber obtained by processing used automobile, truck or bus tires.

Resilience - Capability of a material to return to its original size and shape even after after deformation.

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Retreading - Applying new tread to a used tire casing. This practice is common among medium & heavy trucks.

Ribs - A pattern of tread features aligned around the circumference of a tire. There are usually multiple ribs across the tread area of a tire.

Ride Height - The distance from the ground to a fixed reference point (differs by automaker) on the vehicle's body. This dimension can be used to measure the amount of suspension travel or the height of the body from the ground.

Rim - That portion of a wheel to which a tire is mounted.

Rim Diameter - The diameter of the rim bead seats supporting the tire.

Rim Drop - Also called drop center, a change (drop) in the rim profile between the rim flanges in which the bead area of a tire is placed during the mounting process - allows the tire to be mounted on the rim.

Rim Flange - Surface of the rim of the wheel that contacts the side of the tire bead.

R. M. A. - Rubber Manufacturers Association.

RMS - Root Mean Square, a measure of surface roughness.

Rolling Resistance - The force required to keep a tire moving at a uniform speed. The lower the rolling resistance, the less energy needed to keep a tire moving.

Rotary Seal - Seals for rotating shafts, with the turning shaft protruding through the I.D. of the o-ring.

Rubber Aggregate - crumb rubber modifier (CRM) added to the hot asphalt mixture using the dry process.

Rubber Compound - A combination of raw materials blended according to carefully developed procedures. The rubber compound is specially adapted to the performance required of each type of tire.

Rubber Synthetic - Man made elastomers such as Nitrile.

Rubber - A material that displays elastic properties that allow recovery from large deformations quickly and forcibly.

Rubberized Asphalt - asphalt cement modified with crumb rubber modifier (CRM) at less than 15 percent by total weight of the asphalt cement.

Rubber-Modified Asphalt Concrete - a hot mix asphalt concrete mixture with dense graded aggregates a rubberized asphalt type of binder. (Note - The CRM percentage is generally low (5 to 10%) and is generally finer mesh (30 mesh or lower).

Rubber-Modified Hot-Mix Asphalt - a hot-mix asphalt mixture that incorporates the crumb rubber modifier (CRM) primarily as rubber aggregate. Also known as the "dry process".

S. A. E. - Society of Automotive Engineers.

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SAM - the abbreviation for a Stress Absorbing Membrane. A SAM is used primarily to mitigate reflective cracking of an existing distressed asphalt or rigid pavement. It is usually associated with an asphalt-rubber binder sprayed on an existing pavement surface at .60 gallons per square yard (± 0.05 gallons per square yard) and immediately followed by an application of a uniform pre-coated aggregate, which is then rolled and the aggregate is embedded into the binder layer. The nominal thickness normally ranges between 6 and 9 mm (1/4 and 3/8 inch).

SAMI - the abbreviation for a Stress Absorbing Membrane Interlayer. A SAMI is the same as a SAM but is applied prior to an asphalt concrete overlay. This overlay may or may not contain crumb rubber modifier (CRM).

SBR - Styrene Butadiene Rubber, a copolymer of Butadiene. An all-purpose type synthetic similar to natural rubber.

Scorching - Premature curing of rubber during storage or processing, usually caused by excess heat.

Section Height - The height of a tire, measured from its rim to its outer tread.

Section Width - The distance between the outside of a tire's sidewalls, not including any lettering or designs.

Service Description - Numbers and letters molded into the sidewall indicating the load-carrying capacity, load index, and the speed at which the tire can carry a load under specified conditions, or the speed rating. Also known as load index and speed symbol.

Shaft - Rotating or reciprocating component that operates within a cylinder or housing.

Shelf Aging - The potential degradation of seal performance capabilities due to exposure of o-ring elastomers to stressful environmental factors during storage.

Shelf-Life - Length of time a molded compound can be stored without suffering significant loss of physical properties.

Shoulder - The area of a tire where the tread and sidewall meet.

Shredding - process that reduces scrap tires to small pieces 0.15 meter squared (6 inches squared) and smaller.

Shrinkage - Decreased seal volume due to exposure to adverse environmental factors. All rubber material shrinks to some level during molding.

Sidewall - That portion of a tire between the tread and the bead. Protects the tire against impacts with curbs, etc. This is also where the sidewall markings can be found which tell you important information regarding the tire.

Silica Tread Compound - A compounding of silica with a specially formulated synthetic elastomer for exceptional grip on cold and wet surfaces, as well as reliable durability.

Silicone Rubber - A type of synthetic rubber containing silicone.

Singles - One tire mounted on each side of an axle (two tires per axle).

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Sipes - Special slits within a tread block that open as the tire rolls into the contact patch then close, breaking the water tension on the road surface and putting rubber in contact with the road to maintain adhesion, increasing wet and snow traction.

Size Nominal - Basic dimensions of a part from which plus and minus tolerances are developed to account for the range of actual dimensions expected during manufacturing.

Squeeze - Compression of the o-ring between the two mating surfaces comprising the walls of the cavity or gland in which it is installed.

Squirm - Flexing of the tread blocks between the belt package and the road surface. Less squirm means better steering response; more squirm means worse steering response.

Static Seal - Seal functioning in an environment in which there is no relative motion between the mating surfaces.

Steel Belt - The combination of steel cords covered with rubber that forms a strip or belt placed under the tread rubber and on top of the casing (carcass); ensures uniformity when the tire is rotating and helps prevent flats.

Step Groove - A design feature at the base of the groove that generates an additional gripping mechanism in deeper snow.

Stress Absorbing Membrane - a surface treatment (membrane) using an asphalt-rubber spray application and cover aggregate. Same as a SAM.

Structure - The way in which a tire carcass is constructed. Radial structure tires can be identified by the word radial or by the letter R and today account for the majority of vehicle tires.

Swell - Increased seal volume caused by exposure to adverse operating conditions, such as exposure to oils, fluids, heat and the like.

Symmetrical Tread Design - Uniform tread pattern on both sides of the tread for better performance in specific conditions and on specific roads.

Synthetic Rubber - Man-made, as opposed to natural, rubber – most tires today have a relatively small amount of natural rubber in their content.

T. & R. A. - Tire and Rim Association.

Tear Resistance - Resistance to the growth of a nick or cut in a rubber specimen when tension is applied.

Temperature Range - It is the range in which it shows the lowest temperature at which rubber remains flexible and the highest temperature at which it will function.

Tensile Strength - The tensile strength of a rubber compound is the resistance of the rubber to rupture under tension, and is measured in pounds per square inch (PSI).

Tension Set - Increase in length of an elastometric specimen following initial stretching and release.

Glossary of Tire & Rubber Terminology (con't)

Thermal Expansion - Linear or volumetric expansion caused by temperature increase.

Thermoset - Materials that undergo a chemical cross linking of molecules when processed, heated and molded, and therefore can not be reshaped.

Tire - Also called pneumatic tire, a precisely engineered assembly of rubber, chemicals, fabric, and metal, designed to provide traction, cushion road shock and carry a load under varying conditions.

Tire Designation - An alphanumeric code molded into the sidewall of the tire that describes the tire's size, including width, aspect ratio, rim diameter, load index, and speed rating. Most designations use the P-Metric system.

Torque - Turning or twisting effort, usually measured in lb-ft or Newton meters.

Traction - The friction between the tires and the road surface; the amount of grip provided.

Transfer Molding - Method of molding thermosetting materials. The elastomeric compound is placed in a transfer chamber which is part of the mold, heated, then squeezed down through a sprue, a runner, and agate leading into a closed mold cavity.

Tread - That portion of a tire that comes into contact with the road. It is distinguished by the design of its ribs and grooves. Provides traction in a variety of conditions, withstands high forces, and resists wear, abrasion, and heat.

Tread Blocks - individual sections of the tread separated by lateral grooves.

Tread Buffing - Scraping rubber off the tread. Also known as shaving.

Tread Depth - The depth of usable tread rubber measured in 32nds of an inch. If a tire comes new with 10/32nds of rubber, you have 8/32nds of usable rubber. Tires must be replaced when the wear bars are visible at 2/32nds.

Tread Life - The life of a tire before it is pulled from service; mileage.

Tread Pattern - the arrangement of grooves, blocks, sipes and channels on the tread.

Tread Rib - The tread section that runs around the circumference of the tire separated by the tread grooves.

Tread Shaving - shaving some of the tread from a tire for optimal performance and durability in racing applications.

Tread Wear - also called the tread life, it is the measure of how long a tire lasts. It is measured in miles or kilometers.

Treadwear Indicator - Narrow bands, sometimes called wear bars, that appear across the tread of the tire when only 2/32 inch of tread remains.

Tri Side-by-Side Compounding - A process that makes it possible to precisely place three different types of rubber compounds across the tread of a tire.

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Truck Tires - tires with an outside diameter greater than 66 cm – 26” and less than 152 cm – 60”, used on commercial trucks and buses.

Ultimate Elongation - The % of specimen stretching at the point of breaking.

Under-Cure - A condition where rubber has not been cured enough, exhibiting poor physical properties.

Undertread - Material between the bottom of the tread rubber and the top layer of steel belts; acts as a cushion that enhances comfort.

U. T. Q. G. S. - Also known as Uniform Tire Quality Grading Standards, it is a government-sponsored tire information system that provides consumers with ratings (from AA to C) for a tire's traction and temperature. Tread wear is normally rated from 60 to 700.

Valve - A device that lets air in or out of a tire. It is fitted with a valve cap to keep out dirt and moisture, plus a valve core to prevent air from escaping.

Variable Contact Patch - A system that maximizes the contact patch area during cornering through a combination of asymmetrical tread patterns and underlying belts.

Variable Integrated Pitch - The process of varying the size of tread blocks around the circumference of a tire to minimize the noise generated by the tire as it rolls.

Viscosity - Resistance to flow.

Vulcanization - An irreversible process of heating rubber under pressure. A rubber compound, through a change in its chemical structure, becomes less plastic and more resistant to swelling by organic liquids and elastic properties are conferred, improved, or extended over a wider range of temperature.

Vulcanized Rubber - rubber that has gone through the vulcanization process.

Weathering - The tendency of some o-ring seals to surface crack upon exposure to atmospheres containing ozone and other pollutants.

Wet Process - A method that blends crumb rubber modifier (CRM) with the asphalt cement before incorporating the resulting binder for use in an asphalt paving or surfacing project. This terminology is generally associated with asphalt-rubber binder materials.

Wet Traction - Indicates how efficiently the tire disperses water to combat aquaplaning, and how well it grips wet roads in low-speed driving.

Width - The cross sectional diameter of an o-ring.