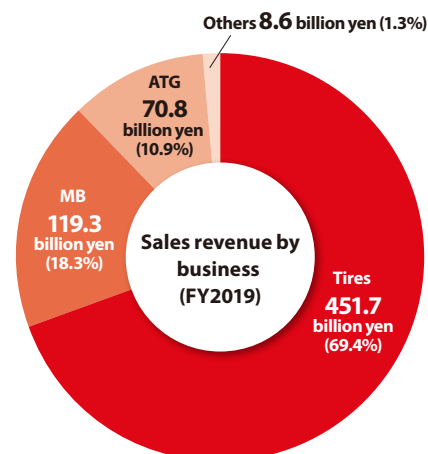


Business and Main Products of Yokohama Rubber

The Yokohama Rubber Group aims to achieve its basic philosophy “to enrich people’s lives and contribute to their greater happiness and well-being by devoting our wholehearted energies and advanced technology to the creation of beneficial products.” We will communicate joy to our stakeholders and gain their trust through business growth strategies that evoke a distinctive identity unique to Yokohama Rubber. The strategies and initiatives in each field are as follows.

Consumer Tires	Through quality and performance to “Help consumers get more out of motoring lifestyles” with a focus on premium car tires, winter tires, and hobby tires, we deliver safer and more enjoyable driving.
Commercial Tires	We have expanded off-highway tires and truck and bus tires to contribute to the sustainability of industries and improvements in mass transport efficiency.
MB (Multiple Business) Operations	We aim to establish a firm position in the automotive components business and marine products business that will lead to the next generation by exploiting compounding and compositing technologies that we are strong in.
Alliance Tire Group (ATG)	The Alliance Tire Group (ATG) has been providing tires for use on agricultural machinery (such as tractors, etc.) and forestry machinery for over 60 years, under the Alliance brand and other brands.



Consumer Tires

[Principal products] Production and sales of tires, tire tubes, aluminum alloy wheels and other peripheral products for passenger cars and for motor sports.

► BluEarth-4S AW21 all-season tires for passenger cars

The BluEarth-4S AW21 all-season tire can be used in a wide range of road conditions all year round, including wet or dry road surfaces, and in snowy weather, regardless of the temperature. Besides providing outstanding performance on snow and on wet roads, it also offers superior dry road performance and first-class wear resistance. As the BluEarth-4S AW21 can cope with sudden snowfalls, it can be used year-round, with no need to implement seasonal tire changes. The Divergent V-grooves and Crossing Narrow Grooves, which make use of newly-developed directional tread pattern technology, ensure both good water expulsion performance on wet roads and also superior performance in snowy conditions. In addition, the tire’s wide tread and large shoulder blocks provide a large tread contact area, making for enhanced handling on dry roads. The BluEarth-4S AW21 is made using a silica end-locked polymer compound, which improves performance both on snow and on wet roads. The tire sidewalls bear the “Snowflake Mark” symbol, confirming that the tire conforms to the severe-weather snow tire requirements specified by international standards, allowing the tire to be used during periods when special winter tires are required by law.*1



*1 Please note that in regions where tire chains are compulsory in winter for all vehicles, chains must be fitted to all tires (including studless tires).

► BluEarth-XT AE61 summer tires for crossover sports utility vehicles (CSUVs)

The BluEarth-XT AE61 is a summer tire specially designed for use with crossover sports utility vehicles (CSUVs). It delivers the sharp handling performance that drivers need on city streets and highways, as well as a quiet ride that contributes to comfort inside the car interior. In addition, the tire’s resistance to uneven wear gives it a long useful lifespan. Within Japan, all sizes of the BluEarth-XT AE61 tire have achieved the rare distinction of receiving both an “a” grade, the highest possible rating, for wet-grip performance, and an “A” grade for rolling resistance. These strengths provide drivers with a greater sense of safety when driving in the rain, while also contributing to the vehicle’s low fuel consumption. The tire profile features a smooth road contact surface shape and a mound profile that evenly distributes contact pressure, with a newly-developed asymmetric tread pattern design that provides high rigidity from the shoulder to the center rib, contributing to enhanced handling performance and resistance to uneven wear. Four straight grooves combined with inside narrow grooves contribute to the tire’s outstanding wet-grip performance. The tread pattern is designed to suppress air-pumping noise, which makes for a superior level of quietness, while the compound used for the tire is a nano-blend rubber that combines silica and polymer to enhance wet-grip performance and fuel efficiency.



► BluEarth-Van RY55 – The first BluEarth tire specially designed for vans, with outstanding wear resistance

The BluEarth-Van RY55 provides enhanced wear resistance, a key requirement for van tires, along with superb performance in wet conditions. It uses the newly-developed Extra Powerful Profile, a specially designed tread pattern, and also features the Aggressive Shoulder, with a combination of deep lugs and sipes on the tire shoulder, making for enhanced wear resistance and resistance to uneven wear. The compound used for the BluEarth-Van RY55 features Triple polymer for enhanced durability, and the tire also incorporates a specially-developed tire profile that provides contact shape optimization, while also reducing uneven wear. In addition, the triangular profile and wide center grooves contribute to superior rigidity and improved water expulsion. Thanks to these special features, by comparison with the JOB RY52, a conventional van tire, the BluEarth-Van RY55 realizes a 20% improvement in wear resistance and a 6% improvement in wet handling.



Commercial Tires

[Principal products] Production and sales of tires for trucks and buses, and for construction equipment.

► 902L all-season ultra-wide-base (UWB) tires

Ultra-wide-base (UWB) tires are special, extra-wide tires that make it possible to replace dual wheels (that use a set of two tires) with a single wheel and tire. Switching over to a single wheel reduces the burden of tire replacement and day-to-day inspection tasks, and because the single wheel and tire are lighter, the truck can carry up to as much as around 170kg of extra load. The 902L uses Yokohama Rubber's unique, specially-developed SpiraLoop® belt structure, which has a steel belt layer running parallel to the direction of rotation of the tire. This belt structure helps to reduce shoulder area expansion and belt distortion when the vehicle is moving, and also provides outstanding resistance to uneven wear and improved durability, thereby contributing to increased tire lifespan. The new tread pattern also makes for improved traction performance, reduces rolling resistance, and improves water expulsion and handling. Tire models that use SpiraLoop® have already been introduced in the North American market, and have attracted a lot of positive comment.



902L



► RR42 off-the-road radial tires for port facility vehicles

The RR42 is a newly-developed radial tire designed for use on straddle carriers, which are vehicles used to transport containers in port facilities. A brand-new tread pattern and optimized profile ensure long, even wear and reduced vibration and lateral deflection. By comparison with conventional tire products, the RR42 offers enhanced wear resistance and improved handling, thereby contributing to reduced resource consumption and greater comfort and safety for customers.

MB (Multiple Business)

[Principal products] Incorporating Yokohama Rubber's hose and couplings, industrial materials, Hamatite (sealants and adhesives) and aerospace products businesses, the MB business unit undertakes production and sales of high-pressure hoses, couplings, conveyor belts, fenders, marine hoses, adhesives, sealants, aircraft water tanks and other products.



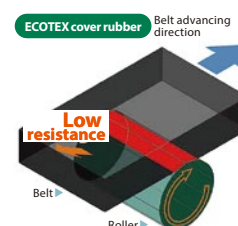
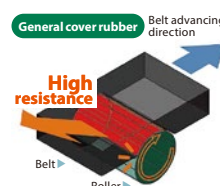
► Pneumatic fenders – Helping to drive the growth of marine industries

Yokohama Rubber holds the highest global market share for pneumatic fenders, which are used to prevent collision damage when ships come alongside one another or when they berth at a pier, whether in port or at sea. Fenders comprise three layers: an outer rubber layer, a reinforcing tire cord layer, and an inner rubber layer; the overall thickness is in the range of 2 – 3 cm. To date, Yokohama Rubber has supplied more than 40,000 fenders, which are in use all over the world. Responding to the trend for the ships that carry resources across the globe to get steadily bigger, Yokohama Rubber has become the first company in the world to supply mega-sized fenders (which are 6 m in diameter and 11.5 m long). To contribute towards the safety of marine transportation, Yokohama Rubber is working on the development of new marine products that use sensor functionality to provide enhanced value.



► ECOTEX energy-saving conveyor belt

ECOTEX was used in the longest conveyor line in Japan in recognition of its energy savings and high durability. The viscoelasticity of the bottom facing cover rubber that comes into contact with the roller has been optimized to reduce the resistance when going over the roller and contribute to a reduction in conveyor power consumption. A significant reduction in power consumption of at least 50% compared to before has been achieved.



ATG (Alliance Tire Group K.K.)

[Principal products] Production and sales of tires for agricultural, industrial, construction, and forestry machinery.

► Alliance 398 MPT tires for agricultural machinery

The Alliance 398 MPT is compatible for use with a central tire inflation system*2 that automatically adjusts tire pressure to the level suitable for driving in the field or on a paved road. In addition, the tires' all-steel radial flotation construction*3 enables the Alliance 398 MPT to deliver excellent performance on and off the road, with perfect traction, high load capacity, and soil protection when used on the farm and stable handling and a quiet and comfortable ride at high speeds when used on paved roads. The tire is the world's first*4 agricultural tire capable of delivering speeds up to 100km/hr on paved roads. This duality enables farmers to load their crops directly in the field and transport them without the need to transfer to another vehicle, eliminating the need for grain carts and other equipment and contributing to greater work efficiency. This tire won an Innovation Award Silver Medal at the 2019 AGRITECHNICA exhibition in Hannover, Germany, the world's leading trade fair for agricultural machinery.



*2 A system that automatically adjusts tire inflation levels. On the farm, the air pressure is lowered so as to increase the surface contact area and disperse the load, thereby lightening the burden on the soil. On paved roads, tire pressure is increased to facilitate smooth rides at higher speeds. The automated system enables the driver to increase or reduce the tires' air pressure without disembark from the truck cab.

*3 Among steel radial tire structures for tires used on agricultural machinery, this structure is known for excellent flotation (buoyancy) performance that lightens the burden on soil found on nonpaved road surfaces, including muddy roads.

*4 An in-company investigation.