Through our activities, we want to contribute to the environment and we always endeavor to use only environment-friendly materials.
The all-new Zenvironment line of tyres for trucks and buses improves fuel economy and provides long-life service.

Technological advancements in tyres can reduce the environmental impact in several ways. YOKOHAMA has led advances in tyre technologies for improving fuel economy, which reduce emissions and curtail the output of the greenhouse gas carbon dioxide.

Our all-new Zenvironment line of truck and bus tyres incorporates further progress in the improvement of fuel economy.

The shape of a tyre and the quality of its rubber changes due to daily use. To tackle this, YOKOHAMA has focused on the research of the growth of strains inside tyres and the degradation of the material properties. We aim to extend the life of a casing. We have developed strong and flexible compounds to reinforce the initial structure and improve anti-aging performance. With the Strain Control Tyre Profile, we worked on redesigning the inner parts of the tyre. We predicted strain changes resulting from a tyre shape growth due to running and the rupture of rubber resulting from aging, and introduced YOKOHAMA’s original concept, the Margin of Safety Ratio. The Zenvironment series was created taking into account the total lifespan of a tyre.

Effective utilization of the earth’s resources

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By using newly-developed mixing method, the Rolling Resistance and the Fuel Economy are improved, and the lifespan is prolonged.

The Zenvironment series was created taking into account the total lifespan of a tyre.
YOKOHAMA started by working on the development of new methods to produce tyres that can last longer and are stronger.

The theme “Reduce & Reuse” should not be ignored when considering the environmental performance of future tyres. YOKOHAMA’s aim is to produce ideal compounds that are tough and flexible.

The new Lower Temperature / Higher Torque Mixing Method kneads the rubber at a low temperature using rolls. Rubber and carbon can be mixed more uniformly because the functions of the mixer and the rolls are divided. This can prevent molecules of rubber from being broken and improve their dispersion. Totally new compounds that are tough and flexible can be produced. YOKOHAMA succeeded in extending the life in original tread durability and casing life for better retreadability.

The distribution of carbon particles is more even in rubber produced with the New Lower Temperature / Higher Torque Mixing Method process than in traditionally processed rubber.

The new method performs the kneading of the rubber on rolls after the rubber has been mixed. This process results in lower temperatures. It thus minimizes the splitting of the rubber’s long-polymer chains and promotes a more even distribution of the carbon-black particles, which are used as a reinforcing agent.

Stiff and less flexible rubber

Soft and less flexible rubber

Tough and flexible rubber

The new Lower Temperature / Higher Torque Mixing Method significantly increases original standards and dispenses carbon in rubber evenly.
Over the course of their life, tyres change, they wear out, they become harder. Predicting these changes can enhance durability.

Even small changes in the tyres due to use can make a difference. The Strain Control Tyre Profile is completed on the basis of an in-depth prediction of strains.

The period of using radial tyres for trucks and buses is longer in the “grown” state than in a “brand-new” state. YOKOHAMA studied the anti-aging performance. Heat generated during running increases the internal temperature of tyres, causing their outside diameter to grow slightly. Tyres generally halt growing after 40,000 to 50,000 km.

Until then, their outside diameter grows. The traditional performance evaluation could not always give strict results because it evaluated new tyre state only. YOKOHAMA developed its own simulation method, the Double Inflation Pressure Simulation Method, to solve the problem. This method can precisely analyze potential strains inside tyres in an entire tyre life through a computer simulation.

The Zenvironment series conducts the Total Strain Tyre Control. A tyre profile with high durability is achieved, which makes the tread growth due to running more uniform.

Our Tyre designs are based on a prediction of their growth.

Development of New Profiles

The Double Inflation Pressure Simulation Method enhances uniform profile at transverse state and after growth.
Heat generated by oxygen contained in the air inflation pressure chambers of tyres causes oxidation and degradation of the rubber inside a tyre. With the Zenvironment series, YOKOHAMA redesigned the tyre inner liner construction, so that oxidation and therefore degradation could be prolonged. A new carcass shape with the Strain Control Tyre Profile and new compounds that are strong and flexible were used, resulting in tougher-than-ever casings.

The Lower Temperature / Higher Torque Mixing Method was also used to produce tread compounds. Specially designed tread compounds have significantly increased wear-resistance due to the optimum composition balance of rubber. The long life performance and the fuel-efficient series were made by combining new tread patterns with tread compounds optimized for wear-resistance and fuel-efficiency.

Reducing the waste of resources reduces environmental impacts.
YOKOHAMA wants to reduce emissions even further. YOKOHAMA also wants to reduce nitrogen oxides (NOx) and particulate matter (PM) to protect the environment. We will never stop pursuing our quest to make tyres run more efficiently. With the evolution of tyres, vehicles will evolve. At YOKOHAMA, we will never stop trying to solve problems on a global scale.